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# **Projections Suite Introduction**

## Welcome to Projections Suite

The Projections Suite software is an array of applications designed to help state analysts review historical employment data, estimate future employment trends for industries and occupations, and report final projections.

The Projections Suite combines the five major projections applications: Short Term Industry Projections (STIP), Long Term Industry Projections (LTIP), Occupational Projections (OP), Report Manager (RM), and Local Review into one unified structure. All five systems have the same look and feel and share common data. The Projections Suite database can be installed on a local PC or on a network.



Projections Suite consists of 130 program modules broken up amongst three applications (<u>STIP</u>, <u>LTIP</u>, and <u>OP</u>) and includes two web-based applications (<u>Report</u> <u>Manager</u> and <u>Local Review</u>).

Click on a category above, or view the <u>Projections Applications and Controls</u> to get started!

# Installation

The majority of the Projections Suite installation documentation is housed on the Projections Central website. Visit the Projections Central Support website <u>installation</u> <u>instructions</u> for guides on SQL Express and Database Tool installation, Projections Suite installation, prerequisite requirements, and additional installation information.

View the Projections Suite Installation Frequently Asked Questions (FAQ) by clicking <u>here</u>.

# **Access Projections Suite**

To open Projections Suite, use one of the following procedures:

1. Double-click on the Projections Suite desktop icon.



Figure 1: Projection Suite icon

### Or

- 1. Click the Start Menu button.
- 2. Click Projections Managing Partnership.
- 3. Select Projections Suite.

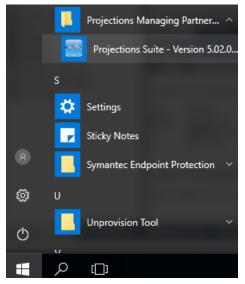


Figure 2: Menu choices used to open Projections Suite

# **Projections Suite Database Setup Tool**

Users may need to access the Projections Suite Database Setup Tool to manage their database(s). To access the Database Setup Tool, either double-click the desktop icon or access it through the Start Menu (under Projections Managing Partnership > Projection Suite Database Setup Tool). When accessed, the following screen will be displayed:

| Database Setup  | Diagnostics                                     |  |                          |                          |  |
|---|---|--|--------------------------|--------------------------|--|
| Credentials<br>Server Informat  | tion  |  |                          | Tasks<br>Required Steps: | Optional Steps:  |
|   | SEDTS-L1LF-4GNH\SQ                              | Port: 1433   | T Connect                | 🔂 1. Create Database     | 🐺 Add Demo Data  |
| Server Adminis<br>Username:<br>Password:<br>Vuse V<br>Database Nami<br>ProjectionsSu<br>Database Back<br>Location: C/US | Windows Login<br>e<br>ite<br>up Folder<br>iers\ | PS Application User<br>Username:<br>Password:<br>Use Windows Login | Cancel                   | 0                        | Restore Database     Delete Database     Uninstall FoxPro driver Help Exit |
|   | Please click Help or                            | read the Setup manual for instructions on                          | configuring these option | 5.                       |  |
| Progress Information  | ion   |  |                          |                          |  |
| Overall Progress:   |   |  |                          |                          |  |
| File Progress:  |   |  |                          |                          |  |
| Ready   | Time  | Process Status Descri  | ption                    | Info                     |  |

Figure 1: Projections Suite Database Setup Utility

For detailed instructions on how to configure the Projections Suite Database Setup Tool, click the **Help** button.

### **Related Content**

- Add Separations Tables
- Backup Database

# **Projections Applications and Controls**

## **Projections Applications and Controls Introduction**

 Short Term
 Long Term
 Occupational
 Report Manager
 Local Review
 @ Getting Started
 Settings
 Exit

Figure 1: Applications and controls in Projections Suite

The Projections Suite contains the following applications and controls:

- Short Term Projections
- Long Term Projections
- Occupational Projections
- Report Manager
- Local Review
- Getting Started
  - By clicking Getting Started during any point while calculating projections, this help document will appear. Alternatively, clicking the Help button on the <u>Active Module Toolbar</u> will open to the section in this document you are currently having trouble with.

Tips are written throughout the Getting Started and Help documentation, to assist the user in navigating the Projections Suite modules.

#### • <u>Settings</u>

- Clicking the Settings menu selection will open the Projection Suite Settings, where you can adjust the way the Projections application looks (to include chart colors and general application settings).
- Exit
  - Exits Projections Suite.

# **Navigating the Help File**

### **Projections Suite Help Navigation Menu**

When navigating through Help, to get back to screens already visited, use one of the following methods:

• Click the Back arrow icon in the upper left hand corner of the help application, to move back one screen per click.



Figure 1: Clicking Back navigates to the last page visited

Alternatively, hold the **Alt** button and use the **left** and **right arrow keys** to rapidly navigate back and forth through your topic selections.

### **Bread Crumb Navigation**

• Click on the desired path segment from the path bread crumb at the top of the help page.

<u>Home</u> > <u>Occupational Projections</u> > <u>Occupational Projections Menu Items</u> > Calculate Projections

Figure 2: Click on Occupational Projections, to navigate directly to that topic

### **Table of Contents Navigation**

• Click on the page's Table of Contents link.

| 1   |
|---|
| Projections Suite Introduction            |
| Projections Applications and Controls     |
| Short Term Industry Projections           |
| Long Term Industry Projections            |
| Occupational Projections                  |
| [?] Occupational Projections Introduction |
| ? Create an Occupational Projection       |
| Occupational Data Menu Items              |
| Occupational Analysis Menu Items          |
| Occupational Projections Menu Items       |
| Occupational Output Menu Items            |
| Occupational Compare Menu Items           |
| Occupational Utilities Menu Items         |
| Seport Manager                            |
| Se Local Review                           |
| S File Formats                            |
| Statistical and Technical Terms           |

Figure 3: Click on the Table of Contents link to go directly to a topic

# **Application Toolbar**

The Application Toolbar appears at the top of (and allow access to) each of the application group menus. Its purpose is to display the group menu (sub-menu) items for the active application section.

| Short Term   | n Data              |
|--------------|---------------------|
| Manage Ro    | unds                |
| Manage An    | eas                 |
| Industry Di  | rectory             |
| Manage Re    | lated Industries    |
| Variable Dir | rectory             |
| Import Text  | t File              |
| Import Spre  | eadsheet            |
| Aggregate    |                     |
| Reconcile    |                     |
| Create Bala  | ince of Area        |
| Review Emp   | ployment            |
| Review Zero  | o/Neg/Missing Value |
| Review Are   | as                  |
| Review Vari  | iables              |

Figure 1: Application Toolbar

Hovering over each selection reveals a hot-key for quick access. Typical Application Toolbar menu items include:

- Data Menus (F5)
- Analysis Menus (F6)
- Projections Menus (F7)
- Adjustments Menus (F8)
- Output Menus (F9)
- Geographic Comparison Menus (F12)
- Utilities Menus (F11)

The Application Toolbar choices will change each time a different application is selected. Not all Application Toolbar choices are available in each application.

# **Application Group Menus**

Use the Group Menus under each Application Toolbar menu item to access the individual modules within each the application.

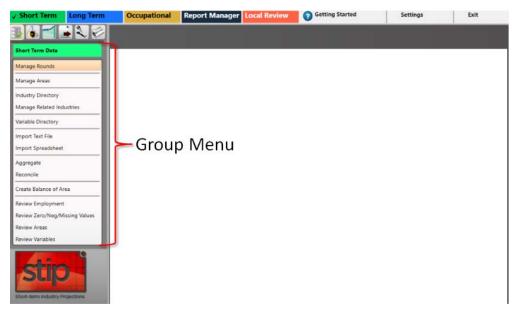


Figure 1: This example displays the Short Term Data group menu, at the left of the screen

To utilize the **Application Toolbar** or an application menu choice, click on it. The chosen module will activate.

| Short Term Long Tern           | Occupational   | Report Manager Local Review     | Getting Started   | Settings | Exit           |
|--------------------------------|--|---------------------------------|---|----------|----------------|
|                                | Manage Areas (ST)  |                                 |   |          | • <sup>1</sup> |
| Short Term Data                |  |                                 |   |          |                |
| Manage Rounds                  | Area Setup<br>Select any State Area(s) for which you would like to develop projections.<br>Right click for context menu options. |                                 | Area Groups<br>Groups can be created using the right click 'context' menu in the Area<br>Setup window. Select a State or Substate area. Right click and select men<br>item 'Create Area Group.' Then add other areas to the group using the 'Ar |          |                |
| Manage Areas                   |  |                                 |   |          |                |
| Industry Directory             |  |                                 | Area to Existing Group' context menu item.  |          |                |
| Manage Related Industries      | <ul> <li>United States</li> </ul>  |                                 | 4   |          |                |
| Variable Directory             | Freedonia [FIPS=80, AreaCode=000080]  Balance of State [code=30]   |                                 | Freedonia WIAs (Parent: Freedonia)<br>Freedonia Balance of State WIA  |          |                |
| Import Text File               |  | orce Development Area [code=17] | Freedonia WIA 2<br>Freedonia WIA 3  |          |                |
| mport Spreadsheet              |  |                                 | Freedonia WIA 4   |          |                |
| Aggregate                      |  |                                 | Freedonia WIA 5<br>Freedonia WIA 6  |          |                |
| Reconcile                      |  |                                 |   |          |                |
| Create Balance of Area         |  |                                 |   |          |                |
| Review Employment              |  |                                 |   |          |                |
| Review Zero/Neg/Missing Values |  |                                 |   |          |                |
| Review Areas                   |  |                                 |   |          |                |
| Review Variables               |  |                                 |   |          |                |
|                                |  |                                 |   |          |                |
| Stip                           |  |                                 |   |          |                |
|                                |  |                                 |   |          |                |

Figure 2: This example displays the Manage Areas module

There are two types of modules, **Long-Lived** and **Short-Lived**. The types act differently when you open multiple windows.

- Long-Lived These windows stay open when you open another window. Examples are Manage Rounds, Manage Areas, and Industry Directory. When a long-lived window is open and you open another, the first window auto-hides at the bottom of the frame. If you hover over the auto-hidden window, it partially opens. Click the title in the bottom of the frame to swap the auto-hidden window with the open window.
- **Short-Lived** These windows automatically close when you open another window.

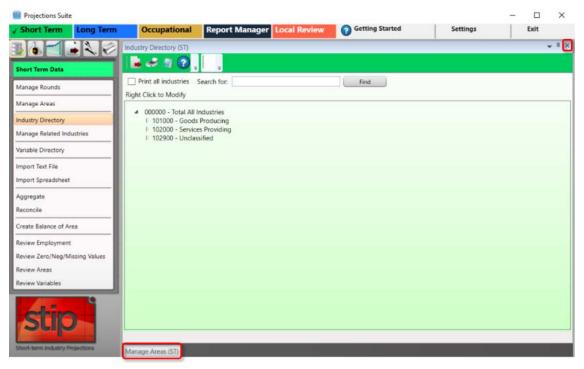


Figure 3: Example of a long-lived module's tab

To close long-lived windows, simply open them and click the **X** near the top right-hand corner of the module (closing the window in this way saves any changes). Be careful not to click the X in the *uppermost* top right-hand corner, unless you want to close Projections Suite entirely.

If you close an open module, the auto-hidden module will partially display. Click the auto-hide push pin 🖪 to fully display the window.

Some modules like **Create Balance of State** need to remain open while accessing other screens, due to its long processing time.

# **Settings Menu**

Short Term Long Term Occupational Report Manager Local Review Settings Exit

Figure 1: Settings menu selection

The Settings option allows the user to set specific values for common settings for the Suite and its applications. There are eight main areas in the Settings menu:

- **Application -** Displays general application settings (i.e., window size, backup options, etc.).
- Charts Allows you to change chart settings and colors.
- General Data Preparation Settings for application defaults (specifically for <u>Outliers</u>).
- **Geographic Comparison** Account details for the Geographic Comparison modules.
- Long Term Settings for Long Term data defaults.
- Occupational Projections Settings for Occupational data defaults.
- Short Term Settings for Short Term data defaults.
- **Support Site Account** Shows Projections Support Site email and occluded password.

### **Utilize Settings Menu**

1. Click the **Settings** menu choice. The Projections Suite Settings will display:

| Application Colors: System                   | ~ | New Delete   | Save Changes | Cancel 🕻 |
|--|---|--------------|--------------|----------|
| ApplicationSettings                          |   |              |              |          |
| ₹↓ Search:                                   |   |              |              | Clear    |
| Application                                  |   |              |              |          |
| Charts                                       |   |              |              |          |
| General Data Preparation                     |   |              |              |          |
| Geographic Comparison                        |   |              |              |          |
| Long Term                                    |   |              |              |          |
| Current Base Year                            |   | 2018         |              |          |
| Current Projected Year                       |   | 2026         |              |          |
| Location quotient threshold                  |   | 1.2          |              |          |
| Start year default for batch/multiple region |   | 1992         |              |          |
| Start year default for dummy variables       |   | 1970         |              |          |
| Warn on missing observation?                 |   | $\checkmark$ |              |          |
| Warn on missing variable value?              |   | $\checkmark$ |              |          |
| Zeroes/Negs Boundary Start Year              |   | 1970         |              |          |
| Occupational Projections                     |   |              |              |          |
| Import Base Year                             |   | 2016         |              |          |
| Import Projected Year                        |   | 2026         |              |          |
|  |   |              |              |          |

Figure 2: Projections Suite Settings

- 2. Click the Expand [+] icon for the desired option.
- 3. Click on the value in the right column to change the existing value.
- 4. Click the **Save Changes** button to save changes made.
- 5. Click the **Cancel** button to cancel making any changes.

An example of changing settings is the Long Term Projections **Current Projected Year**. Reset this value at the beginning of each new projection cycle. You can also set the base year. The standard base year is ten years less than the projected year, for Long Term applications.

# **Screen Controls**

This section was included to aid the user with familiarization of modules and screens, and to demonstrate that the look, feel, and ease of use of the Projections Suite is standardized. Trying out these options will increase your ability to use the application easily, efficiently, and to your liking.

Projections Training includes demonstrations of the user interface.

### **Screen Resolution**

The minimum supported screen resolution is 1024x768 while the application is maximized. If you cannot see the entire screen, please check your screen resolution. Do this by right-clicking on your Windows desktop, selecting **Properties**, and then the **Settings** tab. For Windows 10, right click your desktop, select **Display Settings**, then navigate to **Resolution**.

#### **Docking and Floating**

Projections Suite opens modules as docked or floating. Most modules as are opened as docked, by default. This documentation will tell you if a window or screen will be opened as floating. However, nearly all windows can be docked or floated. To change whether a window is docked or floated, use the following steps:

1. Right click the title bar (above the Active Module Toolbar) of any window, or click the down arrow to open the following context menu.



Figure 1: Right click the title bar

- 2. Click the desired choice.
- **Floating** The window can be dragged to any position within the application or even outside the main application window. To dock the window, right click in the title bar and select **Dockable**. Then close the window. When you reopen the window it will be docked.
- **Dockable** The window is in a fixed position to the rest of the application windows.

- **Auto Hide** The window is minimized and the title displays in the bottom left of the window. To re-open the window, uncheck the **Auto Hide** option.
- **Hide** The window closes. To reopen the window, click the module's group menu option under the correct category.

Alternatively, double-clicking the title bar will quickly switch between floating and docked, if the screen is dockable.

In addition, as you move the floating window over the application, you will see a square tile icons (, , , , ), ) with an arrow in it on each of the four sides, to the right of the application group menu. To dock the screen with these arrows, use the following steps:

1. Click and drag the screen to be docked, directly over the arrow pointing to the side of the frame, on which the screen is to be docked.

2. Release the mouse button.

If another window is already open in the frame, the windows will tile themselves. If no other window is open, it will occupy the entire frame. Similarly, a docked window when made floating will remove itself from the default frame.

To make the window dockable again, right click the title bar and select Dockable.

### **Pushpin Controls**

The pushpin icon 🖳 pins the window to the edge of the frame. You can view the window by clicking its tab. If the screen's pin icon is horizontal 🗐, it may show partially and then re-hide. To make it show full screen click its pushpin again (so its position is vertical 🔍).

#### **Other Screen Controls**

Screen Controls are initially listed at the top of each module's help topic to orient you and familiarize you with the module. Some examples include:

| Manage Rounds             |
|---------------------------|
| Manage Areas              |
| Industry Directory        |
| Manage Related Industries |

Figure 2: Menu Choices

| Freedonia       | • |
|-----------------|---|
| United States   |   |
| Freedonia       |   |
| Freedonia WIA 2 |   |
| Freedonia WIA 3 |   |
| Freedonia WIA 4 |   |
| Freedonia WIA 5 |   |
| Freedonia WIA 6 |   |

Figure 3: Drop-down menus

Process

Figure 4: Buttons

Analyze All Areas

Figure 5: Check boxes

| Sh | ow Outliers  |
|----|--|
| 0. | fhree times the interquartile range or greater.              |
| 0  | wo standard deviations from the differenced mean or greater. |
| 0, | Absolute magnitude difference of 1200 or greater             |
| 0  | op 100 by absolute difference from the differenced median    |

Figure 6: Radio buttons, also known as a control group in this documentation

| Search for: |
|-------------|
|-------------|

Figure 7: Input Fields



Figure 8: Collapse and Expand Data Grid buttons

| Change Font Size | 12 |
|------------------|----|
|                  |    |

Figure 9: Sliders



Figure 10: Date Spinners

For more information on operating spinners, reference the <u>Date Spinner Controls</u> topic.

# **Active Module Toolbar**

The Active Module Toolbar has choices to export, print, record notes, or access the help documentation, using the data created by the active module.

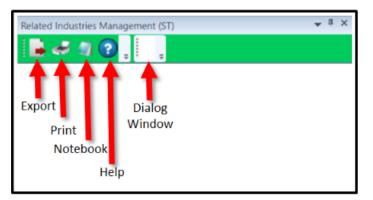


Figure 1: Active Module Toolbar

The real tools are available in every instance of the Active Module Toolbar. The toolbar is contextual, its options based on which module you are currently running.

- **Export Icon** Used to export data to spreadsheets, external files, or between Projections applications (i.e., Occupational Projections to Report Manager).
- Print Icon Prints reports, spreadsheets, or notes.
- **Notebook Icon** Access the <u>Notebook</u> module. The Notebook option is not available in Long Term Projections application.
- Help Icon Different from the Getting Started menu option, the Help Icon will automatically open the associated help information for the currently selected module.
- **Dialog Window** Displays system information messages, based on the current module and activity.

# **Date Spinner Controls**

Date spinner controls are in many of the Projections Suite modules. They are used to adjust data and analysis dates. They are typically displayed in pairs as From and To date spinners, but can be displayed in several combinations. Click the up and down arrows to adjust the time frame you wish to examine.

All date spinners are accompanied by a Max button. Click the Max button to automatically view the longest time frame possible based on available data, or reset a zoomed-in graph.

### **Utilize a Display Date Spinner**

- 1. Click the Display From: year spinner until the year is set.
- 2. Click the Display From: quarter/month spinner until the correct value is set.
- 3. Click the To: year spinner until the year is set.
- 4. Click the To: quarter/month spinner until the correct value is set.
- 5. Click the Max button to start over, or set the longest time frame possible.

Display: From 2008 Q4 To 2010 Q3 max

Figure 1: Display From and To date spinners

Throughout this manual, changing the year using the spinner control is described as using the spinner arrows . The year can also be changed by treating the spinner control as an input field. Clicking onto the actual date allows typing a new date into the control. Press the **Enter** key to accept the new value.

# **Select Chart Dates with the Mouse**

Besides using Date Spinner Controls, data on graphs can be examined in more detail by selecting the time series with the mouse cursor.

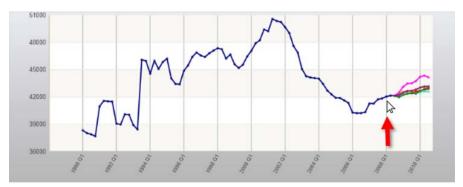


Figure 1: Start by holding the left mouse button at the starting date of interest (2008 Q1)

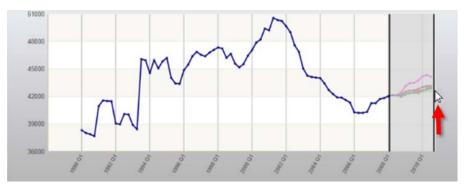


Figure 2: Drag the mouse to the desired ending date and release the left button

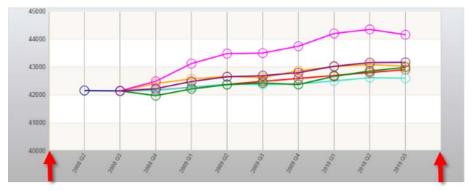


Figure 3: The chart will redraw, using the selected starting and ending date points (2008 Q1 past 2010 Q3)

Click the Max button to start over and view the longest time frame possible.

# **Graph Enhancement Controls**

**Graph Enhancement Controls** are available in several modules throughout Projections Suite. Their purpose is to apply statistical overlays on top of calculated/projected data. They are referenced often in the documentation and demonstrated here.

There are five options to enhance your graph:

- Mean
- Best Fit
- Minimum/Maximum (Min/Max)
- Trend
- Standard Deviation (Std. Dev.)

They are displayed at the bottom of graphs in the following layout:



Figure 1: Graph Enhancement Controls

### Mean

This line represents the average value of the provided data. The Mean will be displayed as a green line through the center of your graph:

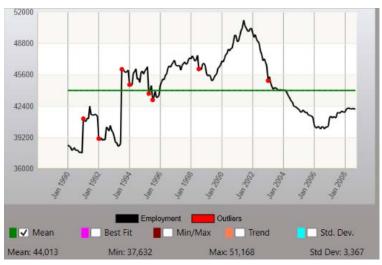


Figure 2: Mean selected

#### **Best Fit**

Displayed in pink, the Best Fit measures the relationship between the mean value and the corresponding values of all other variables. Clicking the Best Fit check box will overlay a calculation based on a linear model. If you select a linear model in Projections and click Best Fit, the statistical line should line up with the projection (demonstrated in Figure 3).



Figure 3: Best Fit selected

### Min/Max

The Minimum/Maximum is displayed in brown. These two lines attain the bounds of the upper and lower threshold, within which all other data values are contained.

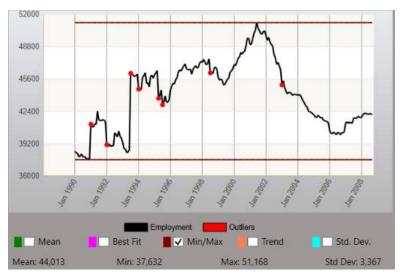


Figure 4: Minimum/Maximum selected

### Trend

The Trend displays in orange. For many time series, two important components are seasonal variation, which is periodic change usually in yearly cycles, and *trend*, which is the long-term change in the seasonally adjusted figures. The Trend check box calculates its line based on a polynomial model. If you choose a polynomial model and click Trend, the statistical line should line up with your projection (as demonstrated in Figure 5).



Figure 5: Trend selected

### Std. Dev.

Standard Deviation (Std. Dev.) is displayed in blue. Standard Deviation is the positive square root of the variance, a commonly used measure of the dispersion of observations in a sample. Checking Standard Deviation draws two lines at one standard deviation above and below the mean.

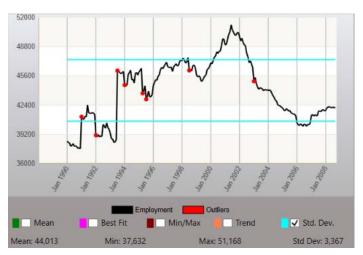


Figure 6: Std. Dev. selected

### **Multiple Selections**

Multiple Graph Enhancement Controls can be selected at once, to further interpolate the data or enhance your presentation. Up to all five controls can be selected simultaneously.

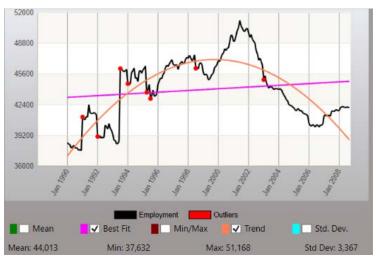


Figure 7: Multiple Graph Enhancement Controls selected

### **Related Content**

• <u>Time Series (LT)</u>

# **Select Multiple Items**

Throughout Projections Suite, selecting more than one possible choice for a process may be desirable. To do this (where it is available), use the following steps:

### Select Items in a Continuous Range

- 1. Click the first item to be selected.
- 2. Hold down the **Shift** key.
- 3. Click the last item to select. This selects the entire range of items.

### Select Items in a Non-Continuous Range

1. Click the first item to be selected.

2. Hold the Control (**Ctrl**) key down (keep it held down during the entire selection process).

- 3. Individually, click each item to be selected.
- 4. Release the Control (Ctrl) key. This selects the individual items only.

The selection process will result in all previously selected items to be deselected. The selection process will need to begin again.

# **Short Term Industry Projections**

## **Short Term Industry Projections Introduction**

Short Term Industry Projections (STIP) examines the methods and models involved in forecasting two-year industry employment projections for a state or sub-state area. The STIP application helps state analysts develop industry employment projections that can be reported or that can be applied to occupational staffing patterns. Projections show trends for industries and provide information helpful to users in making education, job training, and career decisions.

Information about Short Term Industry Projections is available on the Projections Central Support site, under <u>STIP Resources</u>. The STIP Resources contains useful checklists, monthly national variables, and various tips. Use these resources to get started with Short Term Projections.



Figure 1: Short Term Industry Projections application

The Short Term Industry Projections application contains 41 modules under the following group menu selections:

- <u>Short Term Data</u> (F5)
- Short Term Analysis (F6)
- <u>Short Term Projections</u> (F7)
- <u>Short Term Output</u> (F9)
- <u>Short Term Compare</u> (F12)
- <u>Short Term Utilities</u> (F11)

# **Create a Short Term Industry Projection**

This section is meant to be an end-to-end guide for creating a Short Term Industry Projection. Visit the <u>STIP Resources</u> page on the <u>Projections Central Support</u> website for additional, helpful information when producing Short Term Projections.

## **Produce Short Term Industry Projections**

### 1. Pre-Projection Decisions and Adjustments

These decisions and adjustments should be made before starting to produce industry employment projections or forecasts.

Use <u>Manage Rounds</u> to set or modify rounds and to determine discrepancies associated with the imported data.

Use <u>Manage Areas</u> to set the geographic coverage:

- Area Set Up predefined areas
  - o States
  - o Counties
  - Metropolitan Statistical Areas
  - $_{\odot}\,$  Micropolitan Statistical Areas
- Area Set Up user defined areas
- Area Groups user defined grouping of existing areas

## Directories

Industry Directory

Industry codes cross-walked from <u>NAICS</u> codes. Use to review or adjust industries.

Variable Directory

Use to review or adjust variables for use in the Projections process.

## 2. Import Data

- Use the <u>Import Spreadsheet</u> module to import employment data series and variable data.
- Employment Series File: The file may be populated with <u>QCEW</u>, CES, or any user-defined monthly historical series.
- You must have the State industry employment series. If you have monthly data, <u>Aggregate</u> by time to create an annual series. For Short Term, you must have the state industry monthly employment series with at least 4 years of data. Monthly data can be rolled up to annual data for use in Long Term.

• Import the National Economic Variable Spreadsheet. This data is available on under <u>STIP Resources</u> on the <u>Projections Central Support</u> website.

## 3. Review and Edit Data

- <u>Preview Employment</u> to add, edit, or delete data.
- You must have industry "000000 Total All Industries" employment in your employment series. You may use <u>Aggregate</u> to roll-up data.
- The <u>Data</u> and <u>Analysis</u> menu categories are necessary to evaluate historical data.
- The Analysis menu category is used to evaluate employment and variable data.
- Review variable data to add, edit, or delete data.

# 4. Develop Short Term Industry Projections

- Evaluate and select <u>Leading Index</u> variables for use in projections models.
- Use <u>Project Single Region</u> to project the state industry or sub-state area as a single region. Select the models, analyze results, and save projections. All industries must be completed and saved.
- Use <u>Project Multiple Regions</u> if projecting sub-state areas.

# 5. ICT Export

• Use <u>ICT Export</u> to transfer ICT data to Occupational Projections.

# **Short Term Data Menu Items**

# **Short Term Data Introduction**

The **Short Term Data** group menu enables the management of rounds, areas, industries, and variables. Data importing, manipulation, and review tools are also available.



Figure 1: Short Term Data group menu

The Short Term Data group menu contains the following selections:

- Manage Rounds
- Manage Areas
- Industry Directory
- Manage Related Industries
- Variable Directory
- Import Text File
- Import Spreadsheet
- <u>Aggregate</u>
- <u>Reconcile</u>
- <u>Create Balance of Area</u>
- <u>Review Employment</u>
- <u>Review Zero/Neg/Missing Values</u>
- <u>Review Areas</u>
- Review Variables

# **Manage Rounds**

Use the **Manage Rounds** module to define a projection period, based on a specific time frame for completing Short Term Industry Projections. A Short Term Projections round will include a two-year period following the base period (the last ending month of the employment series), and a title to describe the round.

You may have as many rounds defined as you need, and you can define multiple rounds for the same base period. Defining rounds for the same base period allows you to do projections with different scenarios.

T is very important to remember to select a round before processing any data in the system.

#### **Screen Controls**

- Select current round drop-down menu
- Right click menu choices
  - o **Add**
  - o **Edit**
  - o Delete

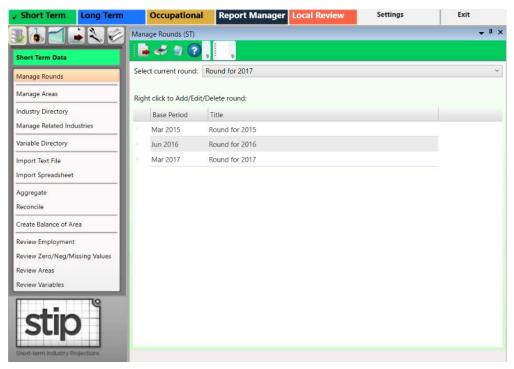


Figure 1: Manage Rounds module

#### Add a New Round

1. **Right click** the background of the **Manage Rounds** screen to open a context menu.

2. Select the **Add** option.

3. Type the monthly **Base Period** of the new round. The base period is the month and year where the employment series data will end. This is typically at the end of the quarter.

4. **Tab** into the Title field and type a **Title** for the new round. The title can be any description that easily defines the round.

5. Press the **Enter** key to save the round. **Right click** and select **Cancel Add** to cancel adding the round.

#### Edit a Round

- 1. **Right click** a round to edit it.
- 2. Select the **Edit** option from the context menu.
- 3. Update the information and press Enter or Tab.

#### Delete a Round

1. Right click the round you want to delete.

2. Select the **Delete** option from the context menu. The **Delete Record** dialog box will be displayed.

3. Click **Yes** to delete the round. Click **No** to keep the round.

The security of the security o

#### Export Round Data to a Spreadsheet

1. Click the **Export** icon on the Active Module Toolbar. A **Save As** dialog box will be displayed.

2. Enter a name for the file and navigate to the location to save the data.

3. Click **Save**. This creates a spreadsheet listing all the rounds defined in the system.

### **Related Content**

- ICT Export
- Variable Directory

- <u>Project Single Region</u>
  <u>Project Multiple Regions</u>

# **Manage Areas**

Use the **Manage Areas** module to select and customize areas for Industry and Occupational Projections. Manage Areas organizes the basic geographical areas your projections will be calculated from. You can select your state, add or change area types, add sub-state areas, and create Area Groups. Area Groups are used in sub-state projections and the Project Multiple Regions (<u>ST</u> and <u>LT</u>) modules.

The Manage Areas module is available in the Short Term, Long Term, and Occupational Projections applications. The changes you make in any of these modules will populate throughout the applications.

### **Screen Controls**

Area Setup section

- Right Click Context Menu (United States)
  - Show All States
  - Hide Unchecked States
- Right Click Context Menu (state)
  - Show All Area Types
  - Show Area Types with Areas
  - Add Area Type
  - Create Area Group
  - Print Area Types
  - Print Areas
  - Print Area Groups
- Right Click Context Menu (Substate)
  - Add Area
  - Edit Area Type
  - Print Area Types
  - Delete Area

#### Area Groups section

- Right Click Context Menu (Highest Level)
  - o Delete Area Group
  - Print Area Groups
- Right Click Context Menu (Substate)
  - Delete Area Group Member

| / Short Term Long Term  | Occupational                | Report Manager Local  | Review   | Settings  | Exit  |
|---|-----------------------------|---|--|---|---|
| Short Term Data   | Manage Areas (ST)           |   |  |   | ▲ <u>†</u> ×                                  |
| Manage Rounds<br>Manage Areas<br>Industry Directory<br>Manage Related Industries  | Select any State Area(s) fo | rea Setup<br>or which you would like to<br>nt click for context menu options.     | in the Area S<br>Right click a<br>add other ar | Area Groups<br>be created using the right<br>setup window. Select a St<br>nd select menu item 'Crea<br>eas to the group using the<br>up' context menu item. | ate or Substate area.<br>te Area Group'. Then |
| Variable Directory<br>Import Text File<br>Import Spreadsheet<br>Aggregate<br>Reconcile<br>Create Balance of Area<br>Review Employment<br>Review Zero/Neg/Missing Values<br>Review Areas<br>Review Variables | 🕨 🗹 🔁 Balance               | PS=80, AreaCode=000080]<br>e of State [code=30]<br>rce Development Area [code=17] | Freed<br>Freed<br>Freed<br>Freed<br>Freed      | Freedonia WIAs (Parent<br>Jonia Balance of State Wi<br>Jonia WIA 2<br>Jonia WIA 3<br>Jonia WIA 4<br>Jonia WIA 5<br>Jonia WIA 5<br>Jonia WIA 6               |   |

Figure 1: Manage Areas module

## Area Setup Section of the Screen

1. Right click the State Area you want to work with to open its context menu.

| Manage Areas (ST)   | <del>^</del> ± ×   |
|---|--|
| Area Setup<br>Select any State Area(s) for which you would like to<br>develop projections. Right click for context menu options.  | Area Groups<br>Groups can be created using the right click 'context' menu<br>in the Area Setup window. Select a State or Substate area.<br>Right click and select menu item 'Create Area Group'. Then<br>add other areas to the group using the 'Add Area to<br>Existing Group' context menu item. |
| <ul> <li>✓ United States</li> <li>✓ Freedonia [FIPS=80, AreaCode=000080]</li> <li>P ♥ ♥ ₱ Balance of State [code=30]</li> <li>Ø ♥ Workforce Development Area [code=17]</li> <li>Ø ♥ ♥ Freedonia WI</li> <li>P ♥ ♥ ₱ Freedonia WI</li> <li>Ø ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱ ₱</li></ul> | Freedonia WIAs (Parent: Freedonia)<br>Freedonia Balance of State WIA<br>Freedonia WIA 2<br>Freedonia WIA 3<br>reedonia WIA 4<br>reedonia WIA 5<br>reedonia WIA 6   |

Figure 2: Context menu for working with State Areas

Depending on the changes needed to this area, click the appropriate option from the following:

- Edit Area
- Print Area
- Create Area Group
- Add Area to Existing Group
- Print Area Groups
- Delete Area

#### Edit an Area

1. Click Edit Area. The Edit Area dialog box will display:

| Area Name: | Freedonia WIA 2       |  |
|------------|-----------------------|--|
| Area Code: | 800002                |  |
| Enter code | e of exactly 6 digits |  |

Figure 3: Edit Area dialog box

- 2. Change the Area Name and/or Area Code.
- 3. Click OK.

#### **Print Areas**

1. Select **Print Area Groups** from the context menu. This menu choice is accessed by right-clicking the second highest level (Freedonia, in this example) in the **Area Setup** section. The **Print Preview** screen will be displayed.

2. Click the **Print** icon to print the area's data.

#### **Create an Area Group**

1. Right click on the 2nd level in the Area Setup screen section.

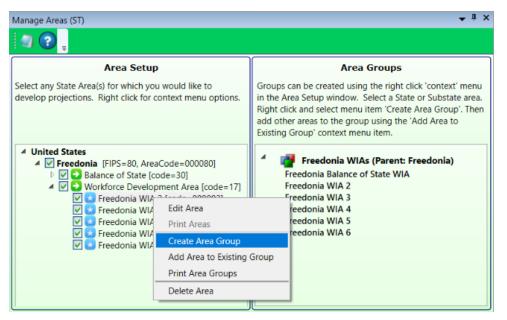


Figure 4: Create Area Group, to add to the Area Groups screen section

# 2. Click **Create Area Group**. The **Create Area Group** dialog box will be displayed:

| Create Area Group  |
|--|
| This action creates a new Area Group that is composed of a 'parent'<br>area and can have other areas called 'children'. Children should be<br>areas contained within the parent area, and may be added at any<br>time. |
| In addition, a 'balance of state' area can be created if the parent area is not in any of the children.  |
| To create the group, enter the group name below and click OK   |
| Parent Area  |
| Area: Freedonia WIA 2<br>FIPS: 80  |
| Type: Workforce Development Area<br>Code: 17 - Workforce Development Area  |
| New Group Name: Test Group   |
|  |
| OK Cancel  |

Figure 5: Create Area Group dialog box

3. Name the new Area Group.

4. Click **OK**. This will add the new Area Group (named Test Group, in this example) to the **Area Groups** section of the screen.

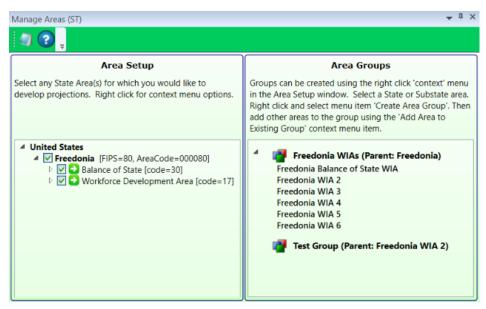


Figure 6: The new Area Group (Test Group) is added

5. Continue adding areas to the Area Group by **right-clicking** and selecting **Add Area to Existing Group** from the context menu. Select a group from the dropdown menu to add the area to the Area Group, then click **OK**.

#### **Delete Area**

- 1. Right click on the area to select it.
- 2. Select **Delete Area**. The following dialog box will be displayed:

| # Records | Database Record Type   |
|-----------|------------------------|
| 1         | Area                   |
| 2242      | AnnualEmployment       |
| 71        | LTIndustryProjection   |
| 26550     | MonthlyEmployment      |
| 1         | Notebook               |
| 24        | STMultipleRegionPrelim |

Figure 7: Delete Area dialog box

3. To delete the area, click **OK**. Click **Cancel** to keep the area.

## **Delete an Area Group**

1. Right click the Area Group to select it for deletion.

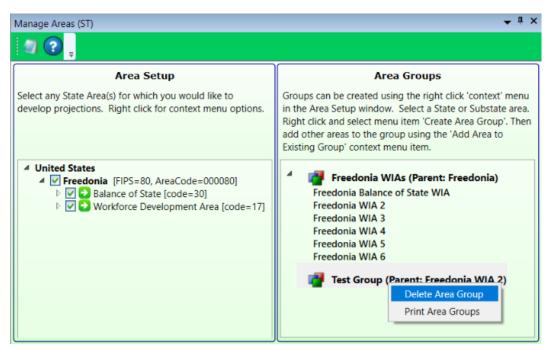


Figure 8: Delete the Area Group, Test Group

2. Select **Delete Area Group** from the context menu. You will be prompted to confirm the deletion.

3. Click **OK** to confirm. Click **Cancel** to keep the Area Group.

### **View Area Types**

It may be helpful to view the various area types when initially setting up your Projections software, to determine the best way to classify your areas. To view all area types:

1. **Right click** your state and select **Show All Area Types**. This will list all of the area types and their associated codes in the Area Setup section.

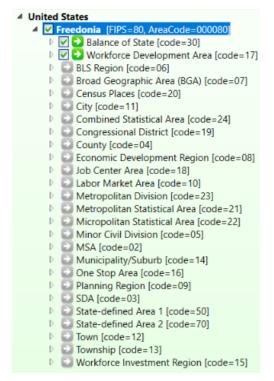


Figure 9: All area types

2. When you are finished, close the list by **right-clicking** your state and selecting **Hide Area Types With No Areas** from the context menu.

#### **Related Content**

- <u>Create Balance of Area</u>
- <u>Review Areas</u>
- Project Multiple Regions (<u>ST</u> and <u>LT</u>)
- <u>Area Format</u>

# **Industry Directory**

Use the **Industry Directory** as a resource for information about specific industries, listed by <u>NAICS</u>. The Industry Directory lists all valid industry codes and titles in a tree view. All Projections Suite applications use it for defining industries. A default Industry Directory is installed with the Projections Suite.

Analysts can modify the directory as needed for your state. However, the position of industries in the industry tree is critical. When adding or moving industries, ensure you place them correctly within the parent industry. Industry placement will affect aggregation of employment data in later projections steps.

The Industry Directory module is available in the Short Term, Long Term, and Occupational Projections applications. The same screen displays in each application.

#### **Screen Controls**

- Print all industries check box
- Search for field
- Find button
- Expand/Collapse arrows

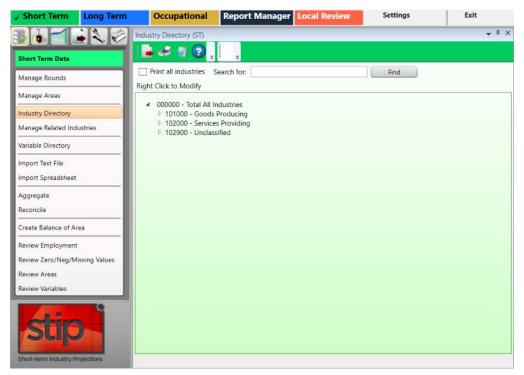


Figure 1: Industry Directory module

The **Total All Industries** code is displayed at the top of the tree. Beneath **Total All Industries** are the NAICS codes for Super-Sectors (2-digit), sectors (3-digit), and detailed industries (4 - 6 digit).

## Manually Expand/Collapse the Industry Hierarchy

1. Click the **Expand** icon next to the general category of the industry. The category will expand one level.

2. Continue clicking the expand icons in that category until the desired industry level is displayed.

3. Click the **Collapse** icon on the category header to collapse to that level.

### Use the Search Tool

- 1. Click into the Search for field.
- 2. Type an industry description or industry code.

3. Click the **Find** button or press **Enter**. The designated industry will be displayed if it is listed in the industry hierarchy.

| Industry Directory (ST)                                     | • ‡ ×                                 |
|---|---------------------------------------|
|   |                                       |
| Print all industries Search for: 541100 Find                |                                       |
| Right Click to Modify                                       |                                       |
| ▲ 000000 - Total All Industries                             | ^                                     |
| D 101000 - Goods Producing                                  |                                       |
| ▲ 102000 - Services Providing                               |                                       |
| 102100 - Trade, Transportation, and Utilities               |                                       |
| 102200 - Information  |                                       |
| 102300 - Financial Activities                               |                                       |
| 102400 - Professional and Business Services                 |                                       |
| 4 540000 - Professional, Scientific, and Technical Services |                                       |
| 4 541000 - Professional, Scientific, and Technical Services |                                       |
| 541100 - Legal Services                                     | 0                                     |
|   | · · · · · · · · · · · · · · · · · · · |

Figure 2: Using the Search for field

| Search for: | Legal Services | Find |
|-------------|----------------|------|

Figure 3: Use a description to find an industry

# Additional Options in the Industry Directory

There are various options in the Industry Directory to help customize industries. To customize the Industry Directory:

1. **Right click** on an entry in the Industry Directory. Depending on which industry level you've selected, one of two context menus will be displayed.

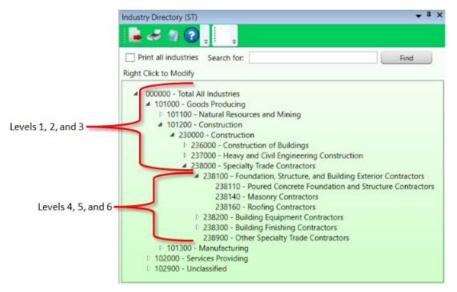


Figure 4: Industry Directory breakdown

The context menus contain the following items:

- Expand all children will expand the selected entry to the sixth level.
- Collapse all children will collapse all entries within the selected entry.
- Add enables the addition of new industries to the selected entry. Ensure their placement is correct to avoid future aggregation issues.
- **Cut** will remove the selected entry and copy it to the clipboard for pasting into another area.
- **Delete** will delete the selected entry.
- Edit enables editing of a selected entry.
- Move allows the selected entry to be moved to another location in the directory.
- **Paste** will paste a previously cut industry into another area in the hierarchy.

# **Manage Related Industries**

Use the **Manage Related Industries** module to view and edit <u>Related Industries</u> for specific areas and industries.

The default set of related industries is included during system installation and can be used to help you determine industry assignments, but they must be assigned to be used in the projections process. The default list includes a set of industries, assigned to specific industries, selected by national experts. These lists can be used as a starting point for assigning related industries, then adjusted for each area/industry combination. Related industries are used as variables in the projections process when the **Related Industries** model is selected in <u>OLS</u>, <u>VAR</u>, or <u>BVAR</u> model types.

A related industry marked with a red flag **0** indicates the industry has no employment data and should not be included in projections calculations. Either delete the industry from the list or import data for the industry. If a flagged industry remains in the list, an error will occur when trying to project an industry using the Related Industries model.

## **Screen Controls**

- Select an Area drop-down menu
- Assign Defaults to all Industries button Assigns pre-set Related Industries to all industries in the selected area
- Select an Industry drop-down menu
- **Remove All Related Industries** button Eliminates all related industries for the selected area
- Arrow buttons

| / Short Term Long Term         | Occupation           | al Report Manager           | Local Review             | Settings            | Exit                           |
|--------------------------------|----------------------|-----------------------------|--------------------------|---------------------|--------------------------------|
|                                | Related Industries M | inagement (ST)              |                          |                     |                                |
| Short Term Data                |                      |                             |                          |                     |                                |
| Manage Rounds                  | Select an Area       | Freedonia                   |                          | ~ Ass               | ign Defaults to All Industries |
| Manage Areas                   | Select an Industry   |                             |                          | ~ le                | move All Related Industries    |
| Industry Directory             | A                    | vailable Industries         |                          | Related In          | dustries                       |
| Manage Related Industries      |                      |                             |                          |                     |                                |
| Variable Directory             |                      |                             |                          |                     |                                |
| Import Text File               |                      |                             |                          |                     |                                |
| import Spreadsheet             |                      |                             |                          |                     |                                |
| Aggregate                      |                      |                             |                          |                     |                                |
| Reconcile                      |                      |                             | 23                       |                     |                                |
| Create Balance of Area         |                      |                             |                          |                     |                                |
| Raview Employment              |                      |                             |                          |                     |                                |
| Review Zero/Neg/Missing Values |                      |                             |                          |                     |                                |
| Review Areas                   |                      |                             |                          |                     |                                |
| Review Variables               |                      |                             |                          |                     |                                |
| Stip                           | S Flagged reco       | ds do not have employment s | eries data. Attempting t | o use them in proje | ections will cause an error.   |

Figure 1: Manage Related Industries module

## Assign Default Related Industries to an Area

### 1. Select an Area.

2. Click the **Assign Defaults to All Industries** button. By assigning the default, you are saying you want to use the default set of related industries.

3. A confirmation dialog will display. Click **Yes** to assign default industries. Click **No** to cancel.

| This action will check each   | industry in the selected area |
|---|-------------------------------|
|   | f no related industries have  |
| been assigned for the select<br>related industries are assig<br>overwritten. Would you like | ned. No existing data is      |
|   |                               |

Figure 2: Confirm dialog box

Default related industries are typically defined for 3-digit industries, but may not be present for all 3-digit industries. More detailed industries (4, 5, and 6-digit) will not have default related industries assigned. This means that, at the national level, they have not determined which (if any) related industries should be assigned.

If the area/industry selection already has related industries assigned, the Assign Defaults button will not overwrite the relationships between these industries. This protects custom assignments.

### View and Edit an Industry's Related Industries

1. **Select an Area** and **Industry** from the drop-down menus. The available industries for those choices display in the **Available Industries** table. In Figure 3, you can see that no default industries have been assigned to industry 519000 - Other Information Services in the **Related Industries** table.

| Related Industries Ma   | anagement (ST)  |            |                            |          | <del>~</del> ‡ ×   |
|---|---|------------|----------------------------|----------|--|
| 1   | , i ,   |            |                            |          |  |
| Select an Area<br>Select an Industry  | Freedonia<br>519000 - Other Information Services<br>Available Industries  |            |                            | ~        | Assign Defaults to All Industries<br>Remove All Related Industries |
| 238000 - Specialty<br>311000 - Food Ma<br>312000 - Beverage<br>313000 - Textile M | Sas Extraction<br>tion<br>tion of Buildings<br>nd Civil Engineering Construction<br>Trade Contractors<br>inufacturing<br>e and Tobacco Product Manufacturing<br>lills | >          |                            |          |  |
| Flagged record  | ds do not have employment series data   | Attempting | to use them in projections | s will c | ause an error.   |

Figure 3: Available Industries are displayed

2. Select industries in the **Available Industries** table to move into the **Related Industries** table. Industries can be moved one at a time or in multiple selections.

3. Use the **arrow** buttons to move the selected industry or industries to or from the **Related Industries** table.

| elect an Area      | Freedonia                                   | v       | Assign Defaults to All Industrie |
|--------------------|---|---------|----------------------------------|
| elect an Industry  | 519000 - Other Information Services         | ~       | Remove All Related Industries    |
|                    | Available Industries                        | Related | Industries                       |
| 510000 - Informat  | ion   |         |                                  |
| 511100 - Newspaj   | per, Periodical, Book, and Directory Publis |         |                                  |
| 511200 - Software  | Publishers                                  |         |                                  |
| 512000 - Motion    | Picture and Sound Recording Industries      |         |                                  |
| 515000 - Broadcas  | sting (except Internet)                     |         |                                  |
| 517000 - Telecom   | munications                                 |         |                                  |
| 518000 - Data Pro  | cessing, Hosting and Related Services       |         |                                  |
| 522000 - Credit In | termediation and Related Activities <       |         |                                  |
| 523000 - Securitie | is, Commodity Contracts, and Other Finar    |         |                                  |
| (                  |   |         |                                  |

Figure 4: Select Related Industries

The industries in the Related Industries table and the selected industry are now related. These industries will now be used as variables in the projections process when the **Related Industries** model is selected in OLS, VAR, or BVAR model types. Typically, you do not want too many variables, so the Related Industries table should be kept to a minimum (no more than 4 or 5 industry selections).

Context menu items are also available to assist in selection by right-clicking the **Available** and **Related Industries** tables:

### **Available Industries table**

- Add Selected
- Select All
- Unselect All

#### **Related Industries table**

- Remove Selected
- Select All
- Unselect All
- Add Default Industries add any default industries that were previously removed
- Update Default Industries update the default related industries list. Any subsequent adding default industries to other areas will use the new values.

### **Remove All Related Industries**

1. Click the **Remove All Related Industries** button. A confirmation message will be displayed.

2. Click Yes to remove the industries. Select No to cancel.

# **Variable Directory**

Use the **Variable Directory** to create, edit, and delete the monthly variable definitions used in the projections process. Short-term variable types are National, State, or Regional.

Variable data can be <u>imported</u> as a spreadsheet. Match variable names on spreadsheets exactly; misspellings will cause a new variable to be created in the directory. View a variable file format example by clicking <u>here</u>.

The Short Term application comes with a default set of national variables, as well as data for each of those variables. The national variables are updated about every three months. National variables are available on the Projections Central Support web site under <u>STIP Resources</u>, Supplemental Files (Short-Term Monthly National Variables Time Series - USVariables.zip). Update the variables whenever you update the employment series, so the data match the ending date set for the round in the <u>Manage Rounds</u> module.

State and Regional variables are imported or created in the Variable Directory module and it is up to the state analyst to compile data for these types.

# **Screen Controls**

• Select Variable Type drop-down menu

| / Short Term Long Term          | Occupational Report Manager Local Review   | Settings | Exit                  |
|---------------------------------|--|----------|-----------------------|
|                                 | Variable Directory (ST)  |          | <b>₩</b> <sup>1</sup> |
| Short Term Data                 | a 🖉 🖓 😨 🖕  |          |                       |
| Manage Rounds                   | Select Variable Type: National   |          |                       |
| Manage Areas                    | Right click variable to Add/Edit/Delete.   |          |                       |
| Industry Directory              | Average Weekly Hours in Manufacturing  |          |                       |
| Manage Related Industries       | Average Weekly Initial UI Claims   |          |                       |
| Variable Directory              | Building Permits - New Housing   |          |                       |
| Import Text File                | Composite Index - 10 Leading Indicators  |          |                       |
| Import Spreadsheet              | Consumer Expectations  |          |                       |
| Aggregate                       | CPI - Urban: All items   |          |                       |
| Reconcile                       | Interest Rate Spread   |          |                       |
| Create Balance of Area          | Light Vehicle Sales<br>Manufacturer's New orders - Cons. Goods                               |          |                       |
| Review Employment               | Manufacturer's New Orders - Cons. Goods<br>Manufacturer's New Orders - non-Defense cap goods |          |                       |
| Review Zero/Neg/Missing Values  | Money Supply (M2)  |          |                       |
| Review Areas                    | NAPM: US mfg Composite   |          |                       |
| Review Variables                | PPI - Finished Goods - Except Food   |          |                       |
|                                 | 5 & P 500  |          |                       |
| STID                            | Test   |          |                       |
| - and                           | Total Business Inventories   |          |                       |
| Short-term Industry Projections |  |          |                       |

Figure 1: Variable Directory module

#### Add a Variable

- 1. Select Variable Type from the drop-down menu.
- 2. Right click the variable table and select Add.

| Name | Test       |
|------|------------|
| Туре | National 🔻 |

Figure 2: Add/Edit Variable dialog box

3. Enter a variable name (this must be a unique name that clearly identifies the variable).

- 4. Select the variable type (National, State, or Regional).
- 5. Click Save.

#### Edit a Variable

- 1. Right click the variable and select Edit.
- 2. Edit the variable name and/or type.
- 3. Click Save.

#### **Delete a Variable**

- 1. **Right click** the variable and select **Delete**. A dialog box will be displayed.
- 2. Click **Yes** to delete the variable. Click **No** to keep the variable.

The variable will be deleted.

### **Related Content**

- <u>Review Variables</u>
- Preview Variables
- Manage Rounds
- Export Variable Series
- Import Spreadsheet

# **Import Text File**

The **Import Text File** module is only used to import Quarterly Census of Employment and Wages (QCEW) program data.

The file is created specifically for this import by running QCEW job ES2J247D (also known as job 247D). Request the file from your QCEW analysts by providing the parameters for the specific data you need. To save time, it is very important to extract data from the QCEW job output specific to the industry employment and area data required. The text file may have the needed data, but it may require importing into a spreadsheet file first to manipulate or clean up the data before importing it. If this is the case, use the <u>import spreadsheet</u> module to add the data to the database. Reference the <u>QCEW Data Extract</u> topic for additional information.

The Import Text File module is available in the Short Term and Long Term Projections applications. The same screen displays in each application.

## **Screen Controls**

- Select File to Import field
- Browse button
- Import button
- Change Font Size slider

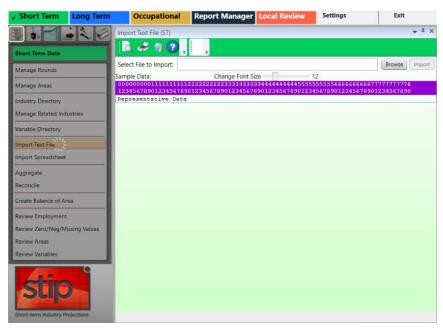


Figure 1: Import Text File module

The format of the text file to be imported must have the data elements of the table into which it is imported. The valid table formats are below. Click the appropriate link to see details:

### **QCEW Text Format**

The QCEW text file format consists of a fixed set of 42 or 43 required columns, depending on the QCEW type (Expo202 or Win202, respectively). If the text file has fewer or greater number of columns, the application will display errors. For additional information about this format, click <u>here</u>.

#### Win202/MSA Text Format

The Win202/MSA format is similar to the standard QCEW format, except the area code has one additional column. The import software expects this format to have 43 columns. If the text file has fewer or greater number of columns, the application will display errors. For details about this format, click <u>here</u>.

#### **Import Text File**

1. Click the **Browse** button.

2. Select the text file and click **Open**. The first row of data will appear below the purple bar.

| Import Text File (LT)  |   | <b>→</b> ╄ ×  |
|------------------------|---|---------------|
| 🗟 🛹 🖓                  | Ready to Import text file.                          |               |
| Select File to Import: | C:\Projections Suite\Data Files\ALMIS.long.good.txt | Browse Import |
| Sample Data:           | Change Font Size 12                                 |               |
| 1234567890123456       | 11122222222233333333334444444445555555555           |               |
|                        |   |               |

Figure 2: First row of data in file

Numbers in the purple bar are read top to bottom to indicate the column position they represent. For example, 0 and 1 is the first column position. 1 and 0 is the tenth column position. 2 and 5 is the twenty-fifth column position, and so on. These column positions help in explaining the data elements of the text file.

Click the **Preview** button on the Active Module Toolbar to preview the data in the text file.

3. If you are satisfied with the file layout, click **Import**. There are two places import information displays (see Figure 3):

- The Active Module Toolbar.
- A detailed data validation message/confirmation will be displayed in the message grid. These messages will provide information to determine the cause of import errors.

| Select File to Import:       C:\Projections Suite\Data Files\ALMIS.short.good.txt       Browse       Import         Sample Data:       Change Font Size       12         000000000111111122222222233333333334444444444  | Import Text Fil  | e (ST)   |   |  |   |  | <b>↓</b> ₽   |
|---|--|--|---|--|---|--|--|
| Nample Data:         Change Font Size         12           000000000111111112222222222233333333333  | 🗟 🤣 (  | File ca  | an not be imp   | ported.  | _   |  |  |
| Row #         Message         State FIPS         Area Code         Area Type         Industry         Occupation           0  | Select File to I   | mport: C:\Projecti   | ons Suite\Da  | ta Files\ALMI  | S.short.good.   | txt E  | Browse   |
| 123456789000000000000000000000000000000000000 | ample Data:  |  | Change Fo   | ont Size —   |   | 12   |  |
| 49 0001 04 491100 200910 4 00000010 1 1 0<br>Import Status:<br>Row # Message State FIPS Area Code Area Type Industry Occupation<br>Ownership<br>attribute was<br>assigned on row<br>(Column 39). We<br>cannot import<br>data with specific<br>ownership -   | the second s | continuent interfacts while a training of given rate dama at the later.  | And the second  | the strength of the strength o | and the second se | the second s | where we are not and a state of a state of the state of t |
| Import Status:         Row #       Message       State FIPS       Area Code       Area Type       Industry       Occupation         0       Ownership<br>attribute was<br>assigned on row<br>(Column 39). We<br>cannot import<br>data with specific<br>ownership -       Import Column 39   |  | A REAL PROPERTY AND A REAL PROPERTY A REAL PROPERTY AND A REAL PRO | a second s |  | 567890123   | 456789012  | 234567890123   |
| 1     Ownership<br>attribute was<br>assigned on row<br>(Column 39). We<br>cannot import<br>data with specific<br>ownership -  |  |  |   |  |   |  |  |
| 1 attribute was<br>assigned on row<br>(Column 39). We<br>cannot import<br>data with specific<br>ownership -   | Row #  | Message  | State FIPS  | Area Code  | Area Type   | Industry   | Occupation   |
|   | 1  | attribute was<br>assigned on row<br>(Column 39). We<br>cannot import<br>data with specific<br>ownership -  |   |  |   |  |  |

Figure 3: Data validation messages

4. If you are not satisfied with the file layout, click **Cancel**. The import will stop.

The order of the data is imported, you can view it in the <u>Review Employment</u> module to verify the information is correct or resolve any problems if it is not.

5. Click the **X** in the top right corner to close the Import Text File module to enable the other group menu selections.

#### **Related Content**

- File Formats Introduction
- QCEW Output Text Format
- <u>Win202/MSA Text Format</u>
- QCEW Data Extraction Instructions

# **Import Spreadsheet**

Use **Import Spreadsheet** to import various spreadsheet formats. This is the most common method for importing data. Spreadsheet file formats must be exact. For additional information and examples of file formats, reference the <u>File Formats</u> <u>Introduction</u> topic.

The Import Spreadsheet module is available in the Short Term and Long Term applications. The same general screen displays in each application, however, if you attempt to import data meant for use in the Short Term application while using the Long Term Import Spreadsheet module (and vice versa), you will be prompted to use the correct module for importation.

#### **Screen Controls**

- Select File to Import field
- Browse button
- **Import** button
- Detected file type field

| ✓ Short Term            | Long Term   | Occupational            | Report Manager           | Local Review     | Settings | Exit   |              |
|-------------------------|-------------|-------------------------|--------------------------|------------------|----------|--------|--------------|
|                         | 20          | Import Spreadsheet (ST) |                          |                  |          |        | <b>*</b> ≞ × |
| Short Term Data         |             | 📕 🛹 🗐 😯 ,               | Click Browse button to s | select file<br>∓ |          |        |              |
| Manage Rounds           |             | Select file to import:  |                          |                  |          | Browse | Import       |
| Manage Areas            |             | Detected file type:     |                          |                  |          |        |              |
| Industry Directory      |             |                         |                          |                  |          |        |              |
| Manage Related Indus    | stries      |                         |                          |                  |          |        |              |
| Variable Directory      |             |                         |                          |                  |          |        |              |
| Import Text File        |             |                         |                          |                  |          |        |              |
| Import Spreadsheet      |             |                         |                          |                  |          |        |              |
| Aggregate               |             |                         |                          |                  |          |        |              |
| Reconcile               |             |                         |                          |                  |          |        |              |
| Create Balance of Area  | a           |                         |                          |                  |          |        |              |
| Review Employment       |             |                         |                          |                  |          |        |              |
| Review Zero/Neg/Mis     | sing Values |                         |                          |                  |          |        |              |
| Review Areas            |             |                         |                          |                  |          |        |              |
|                         |             |                         |                          |                  |          |        |              |
| Stort-term Industry Pro | jections    |                         |                          |                  |          |        |              |

Figure 1: Import Spreadsheet module

#### Import a Spreadsheet

1. Click the **Browse** button.

2. Select the spreadsheet file and click **Open**. The system will validate the data and display the file type in the **Detected file type** field. Depending on the type of import, you will be prompted to classify variables and validation messages (if any) will display.

3. Click the **Import** button. An Import Spreadsheet dialog box will be displayed, indicating if the import was successful and how many usable rows will be imported.

| valid records were found.<br>Would you like to proceed and import the valid records? | valid records were found.                               | 658 unusable rows found c | during validation. However, 94 |
|--|---|---------------------------|--------------------------------|
| Would you like to proceed and import the valid records?                              | Would you like to proceed and import the valid records? |                           | ioning remotion in remotion, a |
|  |   |                           |                                |

Figure 2: Import Spreadsheet dialog box

4. Click **Yes** to import the valid records. Click **No** to stop importing the records. Clicking **Yes** will display the Import Spreadsheet dialog box:

| mport Spreadsheet                             |                   |
|---|-------------------|
| Successfully imported 94/752 rows, up records | dated 94 database |
|   | OK                |

Figure 3: Successfully imported records

5. Click **OK**. Import Status messages will display in the message grid.

|               |         | ÷   | Ŧ               |                 |             |          |            |
|---------------|---------|---|-----------------|-----------------|-------------|----------|------------|
| ect file to i | mport:  | ons Input-Output Files\US\                                      | /ariables (1)\l | US Variables Ja | an1990-Dec2 | 017.xls  | rowse      |
| etected fil   | e type: | Variables   |                 |                 |             |          |            |
| Import St     | atus:   |   |                 |                 |             |          |            |
| Row #         | Messa   | ige   | State FIPS      | Area Code       | Area Type   | Industry | Occupation |
| 1             |         | Validation: # Rows that<br>dy to import: 336                    |                 |                 |             |          |            |
| 1             | colum   | tion: Import will ignore 1<br>ns that were empty or<br>ognized. |                 |                 |             |          |            |
| 1             |         | tion: Spreadsheet contains<br>of 336 rows (excluding<br>r)      |                 |                 |             |          |            |
| 1             |         | : Successfully imported<br>6 rows                               |                 |                 |             |          |            |

Figure 4: Import Status messages

6. Click the **X** in the top right corner to close the Import Spreadsheet module and enable the other group menu items.

## **Related Content**

- File Formats Introduction
- Variable Directory

# Aggregate

The **Aggregate** module is a tool for creating industry employment series within the system, rather than importing data from external sources. With the aggregation tools, you can create total industry series from more detailed industries and ensure that state total records are the sum of sub-state records. The Aggregate module allows the user to rollup data across selected areas, industries, and time. For example, if employment information is imported for 3-digit industries, you can aggregate employment from the detailed 3-digit industries to sector (2-digit) industries. Also, aggregation by time can create an annual employment series from monthly employment series. You have the option of creating new records or supplementing already existing data.

The Aggregate module is available in the Short and Long Term applications. The same screen displays in each application.

### **Screen Controls**

- Select aggregation type down-down menu
- Industry radio button
- Industry Levels radio button
- Select an Industry drop-down menu
- Select an industry Level drop-down menu
- Roll up to drop-down menu
- **Overwrite** radio button
- Add radio button
- Aggregate Data button
- View Results Data/Graph button

| ✓ Short Term           | Long Term     | Occupational             | Report Manager Lo | cal Review | Getting Started | Settings | Exit |
|------------------------|---------------|--------------------------|-------------------|------------|-----------------|----------|------|
|                        |               | Aggregation (ST)         |                   |            |                 |          |      |
| Short Term Data        |               |                          |                   |            |                 |          |      |
| Manage Rounds          |               | 1 Select aggregation t   | ype:              | ~          |                 |          |      |
| Manage Areas           |               |                          |                   |            |                 |          |      |
| Industry Directory     |               |                          |                   |            |                 |          |      |
| Manage Related Ind     | ustries       |                          |                   |            |                 |          |      |
| Variable Directory     |               |                          |                   |            |                 |          |      |
| Import Text File       |               |                          |                   |            |                 |          |      |
| Import Spreadsheet     |               |                          |                   |            |                 |          |      |
| Aggregate              |               |                          |                   |            |                 |          |      |
| Reconcile              |               |                          |                   |            |                 |          |      |
| Create Balance of Ar   | ea            |                          |                   |            |                 |          |      |
| Review Employment      |               | Current aggregation para | meters            |            |                 |          |      |
| Review Zero/Neg/M      | issing Values | No parameters selected y | et!               |            |                 |          |      |
| Review Areas           |               |                          |                   |            |                 |          |      |
| Review Variables       |               |                          |                   |            |                 |          |      |
| stip                   |               |                          |                   |            |                 |          |      |
| Short-term Industry Pr | ojections     |                          |                   |            |                 |          |      |

Figure 1: Aggregate module

The Aggregate module uses numeric step indicators to guide the process. After Step 1 (select aggregation type), the other steps will be enabled.

### Aggregate by Industry

Aggregating by Industry adds employment across various industry levels or groups of industries for a particular area or group of areas.

1. Select **Aggregate by Industry** from the **Select aggregation type** drop-down menu. The step guide buttons will be unlocked.

| Aggregation (ST)   |                      |                            | <b>≁</b> ₫ × |
|--|----------------------|----------------------------|--------------|
|  |                      |                            |              |
| 1 Select aggregation type: Aggregate by Industry ~   |                      |                            |              |
| 2 Select areas:  | 3 Select industries: | OIndustry OIndustry Levels |              |
| Freedonia<br>Freedonia Balance of State WIA<br>Freedonia WIA 2<br>Freedonia WIA 3<br>Freedonia WIA 4<br>Freedonia WIA 5<br>Freedonia WIA 6 |                      |                            |              |
| Overwrite OAdd Current aggregation parameters  |                      |                            |              |
| Aggregating by industry<br>New records will be created.  |                      |                            |              |
| 5 Aggregate Data View Results Data/Graph   |                      |                            |              |

Figure 2: Aggregate by Industry selected

2. **Select areas** to aggregate from the area list box. The list shows all areas with monthly employment in the database. For assistance with selecting multiple items, click <u>here</u>.

3. Select the Industry or Industry Levels radio button.

- When the **Industry** radio button is selected, the **Select an industry** dropdown menu becomes available. Selecting an industry will populate the **Select industries to sum** window. Select the industries to include in the aggregation from the **Select industries to sum** window and continue to the next step.
- Selecting the **Industry Levels** radio button enables you to **Select an industry Level** from the drop-down menu and select a level to **Roll up to** from the drop-down menu. Option combinations are available to aggregate data at various industry levels. The chosen industry level will select the next highest level to **Roll up to** automatically, but higher roll-up levels can be selected as well.

| Select an industry:  | 334000 - Computer and Electronic Product Manufa  | cturing ~            |
|--|--|----------------------|
| Select industries to sum:  | r)   |                      |
| <ul> <li>✓ 334100 - Com</li> <li>✓ 334200 - Com</li> <li>✓ 334300 - Audi</li> <li>✓ 334400 - Sem</li> <li>✓ 334500 - Navi</li> </ul> | ter and Electronic Product Manufacturing<br>iputer and Peripheral Equipment Manufacturing<br>imunications Equipment Manufacturing<br>io and Video Equipment Manufacturing<br>iconductor and Other Electronic Component Manufact<br>igational, Measuring, Electromedical, and Control Instru-<br>iufacturing and Reproducing Magnetic and Optical Meri<br>Olndustry | uments Manufacturing |
| Select an industry Level:  | ThreeDigit   |                      |
|  | Sector   |                      |
| Roll up to:  |  |                      |

Figure 3: Select industries option groups

Fach time selections are made, the **Current aggregation parameters** window will change to reflect the modifications.

- 4. Select an **Overwrite** or **Add** radio button option.
- **Overwrite** will replace an existing data point with newly summed data. It will only do this on a month-by-month basis. Months not part of the rollup process will be left unaffected.

- Add will add the new value to existing data, if that data is present. This is a way to supplement the aggregation process.
- 5. Click the **Aggregate Data** button to perform the rollup.

6. Click the **View Results Data/Graph** button. The **Aggregation Results** screen will activate to show the results of the aggregation. If other areas or industries were chosen in Step 2, they will be available from the drop-down boxes.



Figure 4: Aggregation Results

To view statistical values overlaid on the data, select the <u>Graph Enhancement</u> <u>Controls</u> at the bottom of the graph. <u>Use the Display date spinner</u> or <u>select chart</u> <u>dates with the mouse</u> to examine the data.

# Aggregate by Area

Aggregate by Area sums the employment for each child member of an Area Group and creates a new employment series for the parent area for a particular industry or group of industries.

1. Click the **Select aggregation type** drop-down menu and select **Aggregate by Area**.

2. Select a group from the **Select area groups** list. More than one Area Group can be selected.

3. Select either the **Industry** or **Industry Levels** radio button option. Select specific industries from the industry list, or select an industry level.

4. Click the **Aggregate Data** button.

## Aggregate by Time

Aggregation by Time will average monthly employment for a year to create annual employment for that year, for specific areas and industries.

1. Click **Aggregate by Time** from the **Select Aggregation Type** drop-down menu.

2. Select the areas to include in the aggregation.

3. Select the **Industry** or **Industry Levels** radio button. Select the industries to include.

4. Click the **Aggregate Data** button.

## **Related Content**

• Industry Mix (LT)

# Reconcile

Use the **Reconcile** module to compare summed employment and actual employment for industries, areas, or times. Reconcile is a tool that helps you determine the consistency of industry employment in the database. It's important, for example, that employment in sub-state areas adds to employment at the state level for each industry, and that employment adds consistently across industry levels. It's also important that annual data be reflective of monthly data for the same industry and area. The Reconcile module provides diagnostic information for all of these scenarios.

The Reconcile module is available in the Short Term and Long Term applications. The same screen displays in each application.

## **Screen Controls**

- Select reconciliation type drop-down box
- Select areas list box
- Select industries option group
  - Industry radio button
  - Industry Levels radio button
- Select an industry drop-down box
- Select industries to sum check boxes
- Select an industry level drop-down box
- Roll up to drop-down box
- Reconcile Data button
- Off radio button
- Absolute difference greater than radio button/spinner
- Percent difference great than radio button/spinner
- Date Range spinner
- View Results Data/Graph button

| ✓ Short Term Long Term                  | Occupational                | Report Manager Local Review | Getting Started | Settings | Exit  |
|---|-----------------------------|-----------------------------|-----------------|----------|-------|
|   | New Reconciliation (ST)     |                             |                 |          | + ¤ × |
| Short Term Data                         |                             |                             |                 |          |       |
| Manage Rounds                           | 1 Select reconciliation     | type: ~                     |                 |          |       |
| Manage Areas                            |                             |                             |                 |          |       |
| Industry Directory                      |                             |                             |                 |          |       |
| Manage Related Industries               |                             |                             |                 |          |       |
| Variable Directory                      |                             |                             |                 |          |       |
| Import Text File                        |                             |                             |                 |          |       |
| Import Spreadsheet                      |                             |                             |                 |          |       |
| Aggregate                               |                             |                             |                 |          |       |
| Reconcile                               |                             |                             |                 |          |       |
| Create Balance of Area                  |                             |                             |                 |          |       |
| Review Employment                       | Current reconciliation para | ameter                      |                 |          |       |
| 125 X X                                 | No parameters selected ye   | et!                         |                 |          |       |
| Review Areas                            |                             |                             |                 |          |       |
| Review Variables                        |                             |                             |                 |          |       |
| stip<br>Shot-term inclustry Projections |                             |                             |                 |          |       |

Figure 1: Reconcile module

The Reconcile module uses numeric step indicators to guide the process. After Step 1 (select reconciliation type), the other steps will be enabled.

#### **Reconcile by Industry**

Reconcile by Industry compares employment between various industry levels or groups of industries, for a particular area or group of areas.

- 1. Select **Reconcile by Industry** from the **Select reconciliation type** drop-down.
- 2. Select area(s) to be included in the reconciliation.

| New Reconciliation (ST)                               |                      | ▲ ij ×                     |
|---|----------------------|----------------------------|
|   |                      |                            |
| 1 Select reconciliation type: Reconcile by Industry ~ | ]                    |                            |
| 2 Select areas:                                       | 3 Select industries: | OIndustry OIndustry Levels |
| Freedonia   |                      |                            |
| Freedonia Balance of State WIA                        |                      |                            |
| Freedonia WIA 2                                       |                      |                            |
| Freedonia WIA 3                                       |                      |                            |
| Freedonia WIA 4                                       |                      |                            |
| Freedonia WIA 5                                       |                      |                            |
| Freedonia WIA 6                                       |                      |                            |
|   |                      |                            |
| Current reconciliation parameter                      |                      |                            |
| Reconciling by industry                               |                      |                            |
| Areas: Freedonia                                      |                      |                            |
| 4 Reconcile Data View Results Data/Graph              |                      |                            |

Figure 2: Select the area(s)

- 3. Select the **Industry** or **Industry Levels** radio button.
- If the **Industry** radio button is selected, the **Select an industry** drop-down menu becomes available. After selecting an industry, the **Select industries to sum** window will populate. Select the industries to include in the reconciliation from the **Select industries to sum** window and continue to the next step.
- Selecting the **Industry Levels** radio button will allow you to **Select an industry level** and **Roll up to** level from two drop-down menus. The selected Industry Level will choose the next highest level to **Roll up to** automatically, but higher roll-up levels can be selected from the menu.

| Select an industry:  | 334000 - Computer and Electronic Product Manufactur  | ring v |
|--|--|--------|
| Select industries to sum:  | :  |        |
| <ul> <li>334100 - Com</li> <li>334200 - Com</li> <li>334300 - Audi</li> <li>334300 - Audi</li> <li>334400 - Semi</li> <li>334500 - Navi</li> <li>334600 - Man</li> </ul> | ter and Electronic Product Manufacturing<br>inputer and Peripheral Equipment Manufacturing<br>imunications Equipment Manufacturing<br>io and Video Equipment Manufacturing<br>iconductor and Other Electronic Component Manufacturin<br>igational, Measuring, Electromedical, and Control Instrume<br>urfacturing and Reproducing Magnetic and Optical Media | -      |
| Select industries:   | Industry     Industry     Levels   |        |
| Select an industry Level:  | ThreeDigit   |        |
|  | Sector   |        |
| Roll up to:  |  |        |

Figure 3: Select an Industry or Industry Levels

Feach time selections are made, the **Current reconciliation parameter** window will change to reflect the modifications.

#### 4. Click the Reconcile Data button.

5. Click the **View Results Data/Graph** button. The **Review reconciliation results** screen will open in a new window to show the results of the reconciliation. If other areas or industries were chosen, they will be available from the drop-down boxes.

#### **Projections Suite**

|    | ] 💽 📒                          |                              |                              |   |                             |  |                            |
|----|--------------------------------|------------------------------|------------------------------|---|-----------------------------|--|----------------------------|
| Fi | Itering                        |                              |                              |   | Select an area:             |  |                            |
| 0  | Off                            |                              |                              |   | Freedonia                   |  | 1                          |
| 0  | Absolute dif                   | ference great                | er than: 1000                | 08                                      | Select a parent ind         | ustry:   |                            |
| 0  | Percent diffe                  | rence greate                 | r than: 5                    | 38                                      | 000000 - Total All I        | ndustries  |                            |
|    | 244                            | 6                            |                              |   |                             |  |                            |
|    | Range: Fron<br>Area            | n JAN 🗐                      | 1990 To<br>Date              | JAN 😂 2009 😂                            | Actual Employment           | Difference   | % Difference               |
|    |                                |                              |                              |   | Actual Employment<br>518908 | la contra c | % Difference<br>-84.91     |
|    | Area                           | Industry                     | Date                         | Summed Employment                       |                             | la contra c | -84.91                     |
|    | Area<br>Freedonia              | Industry<br>000000           | Date<br>Jan 1990             | Summed Employment<br>3437769            | 518908                      | -2918861<br>-2903010   | -84.91<br>-84.66           |
|    | Area<br>Freedonia<br>Freedonia | Industry<br>000000<br>000000 | Date<br>Jan 1990<br>Feb 1990 | Summed Employment<br>3437769<br>3428884 | 518908<br>525874            | -2918861<br>-2903010   | -84.91<br>-84.66<br>-84.71 |

Figure 4: Review reconciliation results

The filter options are available to filter results. The filter defaults to off. One way to filter is the **Absolute difference greater than** spinner. The default value is 1000, but you can adjust this. Another filter is a **Percent difference greater than** spinner. A **Date Range** spinner is also available to view results within a specific time frame.

#### **Reconcile by Area**

Reconcile by Area compares employment in the members of an Area Group to the employment in the parent area for a particular industry or industries.

- 1. Select Reconcile by Area from the Select reconciliation type drop-down.
- 2. Select area groups to be included in the reconciliation.
- 3. Click a **Select Industries** radio button.
- 4. Click the **Reconcile Data** button.

5. Click the **View Results Data/Graph** button. The **Review reconciliation results** screen will display the results of the reconciliation.

#### **Reconcile by Time**

Reconcile by Time compares the average monthly employment for a year to the annual employment for that year, for specific areas and industries.

1. Select **Reconcile by Time** from the **Select reconciliation type** drop-down.

- 2. Select area(s) to be included in the reconciliation.
- 3. Click a **Select industries** radio button and make your selections.

4. Click the **Reconcile Data** Button. The **Review reconciliation results** screen will activate to show the results of the reconciliation.

#### **Related Content**

• Industry Mix (LT)

### **Create Balance of Area**

**Create Balance of Area** creates a new area consisting of all employment in a parent area that does not belong to the child members of the area group. For example, if a state is projecting employment in metropolitan statistical areas (MSAs), a state's balance of area would contain the remainder of the employment in the state that lies outside the MSAs. A Balance of Area is also known as a Balance of State (BOS).

The Create Balance of Area module is available in the Short Term and Long Term applications. The same screen displays in each application.

#### **Screen Controls**

- Select an Area Group down-down menu
- Provide a Name input field
- Area Code input field
- **Process** button

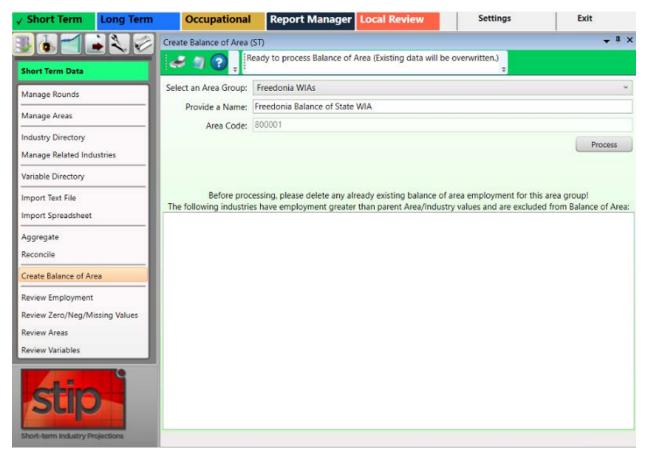


Figure 1: Create Balance of Area module, docked

#### Create a Balance of Area

1. Click the **Create Balance of Area** menu option. The **Create Balance of Area** screen will open in an undocked window.

- 2. Select an Area Group from the drop-down menu.
- 3. Type a name for the new area in the **Provide a Name** input field.

4. Type a valid **Area Code** into the input field. The area code must be 6 digits in length. The **Process** button will be enabled.

| Create Balance of Area | (ST) • • • ×  |
|------------------------|---|
| <i> 🗸</i> 🗿 📮          | eady to process Balance of Area (Existing data will be overwritten.)  |
| Select an Area Group:  | Freedonia WIAs ~  |
| Provide a Name:        | Freedonia Balance of State WIA  |
| Area Code:             | 800001  |
|                        | Process   |
|                        | essing, please delete any already existing balance of area employment for this area group!<br>s have employment greater than parent Area/Industry values and are excluded from Balance of Area: |

Figure 2: Preliminary information entered, Process button unlocked

5. Click the **Process** button. For each industry at the parent area level (for example, the state level), the software sums all of the employment in the industry in each of the sub-state areas that already exist in the group. It then subtracts that sum from the state employment and creates a new industry record. The record is the difference between the state employment and the sum of the non-balance of area sub-state employment. This new employment value is assigned to the Balance of Area. The system will do this for each year when accessed through Long Term Industry Projections and for each month when accessed through Short Term Industry Projections.

When processing is finished, the BOS Processed dialog box will be displayed.



Figure 3: Number of records processed

**Projections Suite** 

6. Click **Yes** to save the Balance of Area records to the database. Click **No** to cancel the save.

After the values have been saved, any industries with sums greater that the group total (which have been excluded from the saved values) are noted in the bottom section of the **Create Balance of Area** screen.

| al 🗐 🕜 Mont                |  | + I     |
|----------------------------|--|---------|
|                            | hly Balance of Area created.   |         |
| Select an Area Group: Fre  | eedonia WIAs   |         |
| Provide a Name: Fre        | edonia Balance of State WIA  |         |
| Area Code: 800001          |  |         |
|                            |  | Process |
|                            | ng, please delete any already existing balance of area on<br>we employment greater than parent Area/Industry values and the second se |         |
| 230000 - Construction      |  |         |
| 480000 - Transportation ar | nd Warehousing   |         |
| 510000 - Information       |  |         |

Figure 4: All records saved; highlighted industries were not

You can view the new industry employment data in the Long Term <u>Edit</u> <u>Employment Time Series</u> module.

#### **Related Content**

Manage Areas

## **Review Employment**

Use the **Review Employment** module to perform a quality check on the historical data series for industries in a specified area. With the quality check, you are able to identify potential problems in the data series.

Prerequisites that must be completed prior to using this module are:

- Run the area set up using the Manage Areas module.
- Import the Monthly Employment Data using the <u>Import Text File</u> or <u>Import</u> <u>Spreadsheet</u> modules.

#### Screen Controls

- Select an Area drop-down menu
- Show / print flagged records only check box
- Process button
- Employment Table tab
- Missing Industries (Substate) tab

| ✓ Short Term Long Term                  | Occupational            | Report Manager Local Review   | Settings | Exit         |
|---|-------------------------|-------------------------------|----------|--------------|
|   | Review Employment (ST)  |                               |          | <b>↓</b> ‡ × |
| Short Term Data                         | 📕 🛹 🖉 😨 🖕               |                               |          |              |
| Manage Rounds                           | Select an Area: Freedom | nia                           |          | v            |
| Manage Areas                            | Show / print flagge     | ed records only               |          | Process      |
| Industry Directory                      | Employment Table        | Missing Industries (Substate) |          |              |
| Manage Related Industries               |                         |                               |          |              |
| Variable Directory                      |                         |                               |          |              |
| Import Text File                        |                         |                               |          |              |
| Import Spreadsheet                      |                         |                               |          |              |
| Aggregate                               |                         |                               |          |              |
| Reconcile                               |                         |                               |          |              |
| Create Balance of Area                  |                         |                               |          |              |
| Review Employment                       |                         |                               |          |              |
| Review Zero/Neg/Missing Values          |                         |                               |          |              |
| Review Variables                        |                         |                               |          |              |
| Stip<br>Short-term Industry Projections |                         |                               |          |              |

Figure 1: Review Employment module

#### **Review Historical Employment Data**

#### 1. Select an Area.

2. Click **Process**. A list of industries will display on the **Employment Table** tab with the start date and end date for each industry, as well as the number of observations. If an industry contains a start date or an ending date that is different from the majority of the industries and different than the round ending date, they will be flagged.

| ect | an Area:    | reedonia                                    |            |          |              |    |
|-----|-------------|---|------------|----------|--------------|----|
|     |             | t flagged records only                      |            |          | Proce        | ss |
| mp  | oloyment Ta |   |            |          |              |    |
|     | Code        | Title                                       | Start Date | End Date | Observations | 1  |
|     | 454000      | Nonstore Retailers                          | Jan 1990   | Mar 2015 | 303          |    |
|     | 481000      | Air Transportation                          | Jan 1990   | Mar 2015 | 303          |    |
| (   | 482000      | Rail Transportation                         | Jan 1998   | Mar 2015 | 207          |    |
|     | 483000      | Water Transportation                        | Jan 1990   | Mar 2015 | 303          |    |
|     | 484000      | Truck Transportation                        | Jan 1990   | Mar 2015 | 303          |    |
|     | 485000      | Transit and Ground Passenger Transportation | Jan 1990   | Mar 2015 | 303          |    |
|     | 486000      | Pipeline Transportation                     | Jan 1990   | Mar 2015 | 303          |    |

Figure 2: Employment Table tab

The flag • displays if there is information missing between the start and end dates. The flagged records should be reviewed for accuracy. One tool to help locate missing dates is by using the <u>Review Zero/Neg/Missing Values</u> module. Running this module can help identify each industry that may be missing employment and print a report. If there is missing employment information, use the <u>Preview Employment</u> module under the Analysis category to view or modify employment data.

Once you have corrected any issues, click **Process** to reprocess the data. It is okay to have industry ending data extend beyond the ending date of the round, but be aware that numerous flags may appear in the list of industries on the employment tab. Flags are used as a warning to identify potential problems, but do not necessarily need to be removed to continue.

3. Check the **Show / print flagged records only** box to view only records with flags.

Click a table heading to sort data by that heading. For example, to sort by Title, click the Title heading.

#### **Missing Industries (Substate) Tab**

If the selected area is a sub-state area, the **Missing Industries (Substate)** tab is enabled after clicking the Process button. At the top, the tab displays a list of industries that were found in the state area but not found in the sub-state area.

| mp   | loyment Table  | Missing Industries (Substate)              |            |          | 2            |
|------|----------------|--|------------|----------|--------------|
| he f |                | stries were found in Freedonia, but not in |            | Ĩ        |              |
|      | Code           | Title                                      | Start Date | End Date | Observations |
|      | 230000         | Construction                               | Jan 1990   | Sep 2008 | 225          |
|      | 310000         | Manufacturing                              | Jan 1990   | Sep 2008 | 225          |
|      | 480000         | Transportation and Warehousing             | Jan 1990   | Sep 2008 | 225          |
|      | 510000         | Information                                | Jan 1990   | Sep 2008 | 225          |
| her  | e were no Free | donia WIA 2 industries missing from Free   | donia.     |          |              |
|      | Code           | Title                                      | Start Date | End Date | Observations |

Figure 3: Missing Industries (Substate) tab

At the bottom, industries found at the sub-state level but not statewide are displayed. Before you run the <u>Project Multiple Regions</u> module, you must have all the same industries in the state and sub-state areas.

## **Review Zero/Neg/Missing Values**

The **Review Zero/Negative/Missing Values** module allows the viewing of industries, in the selected area, which have employment levels that are zero, negative, or are missing values. This identifies errors in an employment data series.

Prerequisites that must be completed prior to using this module are:

- Run the area set up using the Manage Areas module.
- Import the Monthly Employment Data using the <u>Import Text File</u> or <u>Import</u> <u>Spreadsheet</u> modules.

#### Screen Controls

- Select an area drop-down menu
- Beginning Date spinner
- Show only exceptions from base period check box
- Process button

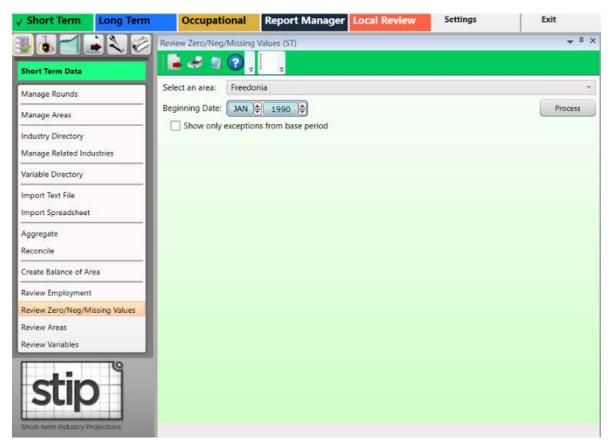


Figure 1: Review Zero/Neg/Missing Values module

#### **Review Zero/Negative/Missing Values**

1. Select an Area from the drop-down menu.

2. Click the **Beginning Month/Year** spinner to set the **Beginning Month and Year**.

3. Click the **Show only exceptions from base period** check box to use the base period only.

4. Click the **Process** button. Industries with zero, negative, or missing values for the selected area and date are displayed.

|    | <b>.</b> 3 | <b>a</b> ? | ÷ ÷                         |            |   |
|----|------------|------------|-----------------------------|------------|---|
| el | ect an are | ea: Free   | edonia                      |            |   |
| e  | ginning D  | ate: JAI   | N 🗣 1990 🖨                  |            | Process   |
| Г  | Show of    | _          | tions from base period      |            |   |
|    | Mon        | Year       | Industry                    | Emp. Level | Exception Condition                             |
|    | 10         | 2017       | 517000 - Telecommunications | 0          | Employment Level is less than or equal to zero. |
|    | 11         | 2017       | 517000 - Telecommunications | 0          | Employment Level is less than or equal to zero. |
|    | 12         | 2017       | 517000 - Telecommunications | 0          | Employment Level is less than or equal to zero. |
|    |            | 2010       | 517000 - Telecommunications | 0          | Employment Level is less than or equal to zero. |

Figure 2: Flagged records display with the reasons they are flagged

Take note of the Month, Year, and Industry columns with error flags and visit the <u>Preview Employment</u> module under the Short Term Analysis group menu to view and modify employment data. Once you have corrected any issues, return to this module and click **Process** to reprocess the data and verify there are no exceptions or that there is no concern for the exception.

# **Review Areas**

The **Review Areas** module compares Area Group information to identify potential problems found in the employment data series.

Prerequisites that must be completed prior to using this module are:

- Run the area setup and set up an Area Group using the <u>Manage Areas</u> module. Creating Area Groups allows for the comparison of information between a parent and child areas. This will help to determine if there are data problems.
- Import the Monthly Employment Data using the <u>Import Text File</u> or <u>Import</u> <u>Spreadsheet</u> screens.

The Review Areas module is available in the Short Term and Long Term applications. The same screen displays in each application.

#### **Screen Controls**

- Select an Area Group drop-down menu
- Process button
- Show / print flagged records only check box

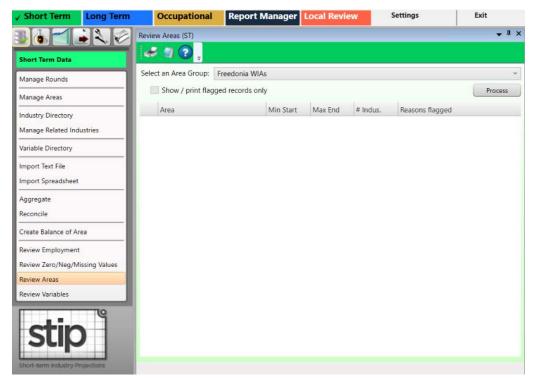


Figure 1: Review Areas module

#### **Review Areas**

- 1. Select an Area Group.
- 2. Click the **Process** button. When processing is complete, the results display.

| Selec | t an Area Group: Freedonia WIA    | s         |          |          |   |
|-------|-----------------------------------|-----------|----------|----------|---|
|       | ] Show / print flagged records on | ly        |          |          | Process   |
|       | Area                              | Min Start | Max End  | # Indus. | Reasons flagged   |
|       | Freedonia                         | Jan 1990  | Sep 2008 | 114      |   |
|       | Freedonia Balance of State WI     | Jan 1990  | Sep 2008 | 114      |   |
|       | Freedonia WIA 2                   | Jan 1990  | Sep 2008 | 114      |   |
| 0     | Freedonia WIA 3                   | Jan 1990  | Sep 2008 | 116      | Child industry count greater than<br>parent industry count. |
|       | Freedonia WIA 4                   | Jan 1990  | Sep 2008 | 114      |   |
|       | Freedonia WIA 5                   | Jan 1990  | Sep 2008 | 114      |   |
|       | Freedonia WIA 6                   | Jan 1990  | Sep 2008 | 114      |   |

Figure 2: Discrepancies are listed in the Reasons Flagged column

Review starting dates, ending dates, and number of observations to make certain they are what is expected. A flag **0** indicates there are issues with the record. In Figure 2, Freedonia WIA 3 contains more observations than the other areas. This information can help identify possible discrepancies.

Modify data as needed either using the <u>Preview Employment</u> module or by reimporting a corrected spreadsheet. When the number of industries is different in child areas than the parent area, the Review Employment (<u>ST</u> and <u>LT</u>) module can then be used to determine specifics of the discrepancies. Industries can be identified that are found in the parent area but not in a child area, and vice versa.

Once you have corrected any issues, return to this module and click **Process** to reprocess the data and verify there are no exceptions or that there is no concern for the exception.

### **Review Variables**

Use the **Review Variables** module to review the National, State, and Regional variables for any inconsistencies in the data series.

Prerequisites that must be completed prior to using this module are:

- Run the area setup using the Manage Areas module.
- Import the Monthly Variable data using the Import Spreadsheet module.

#### **Screen Controls**

- Select Variable Type drop-down menu
- Show / print flagged records only check box
- Process button

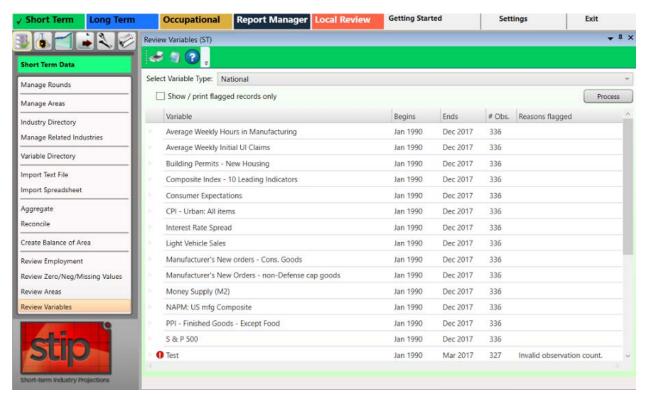


Figure 1: Review Variables module

#### **Review Variables for Inconsistencies**

1. Select Variable Type from the drop-down menu.

2. Click the **Process** button. The variables of the selected type will be displayed. Variables with errors will be flagged and their discrepancies listed in the **Reasons flagged** column.

Click the **Show / print flagged records only** check box to hide all records that do not have discrepancies.

Review any flagged records to ensure the information is correct. Use the <u>Preview</u> <u>Variables</u> module under the Analysis category to modify or add a variable record, or re-import variable data. Once you have corrected any issues, return to this module and click **Process** to reprocess the data and verify there are no exceptions or that there is no concern for the exception.

#### **Related Content**

- Variable Directory
- Preview Variables (ST)
- Dummy Variables (ST)

# Short Term Analysis Menu Items

### **Short Term Analysis Introduction**

The menu items for the **Short Term Analysis** group menu include tools to review data series or to create/edit dummy variables in preparation for processing projections. The employment series imported into the Short Term application should be an unadjusted (not seasonally adjusted) data series.

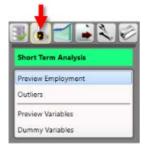


Figure 1: Short Term Analysis group menu

The Short Term Analysis group menu contains the following selections:

- Preview Employment
- <u>Outliers</u>
  - o <u>Time Series Plot Tab</u>
  - o Transformed Time Series Plot Tab
- Preview Variables
- Dummy Variables

# **Preview Employment**

Use the **Preview Employment** module to analyze and edit the Monthly Industry Employment data series.

The graph displays all of the monthly employment data values so you can visually see trends for the employment series and any irregularities that might be occurring. Using this module, you are able to view the historical graph of an industry's employment series and review the related industries assigned to the selected industry.

#### **Screen Controls**

•

- Select an Area drop-down
- Select an Industry drop-down
  - View % Shares check box
- View <u>Related Industries</u> button
- Delete Data Series button
- Level radio button
- % Growth radio button
  - Display date spinner
    - o Max button
- Graph Enhancement controls

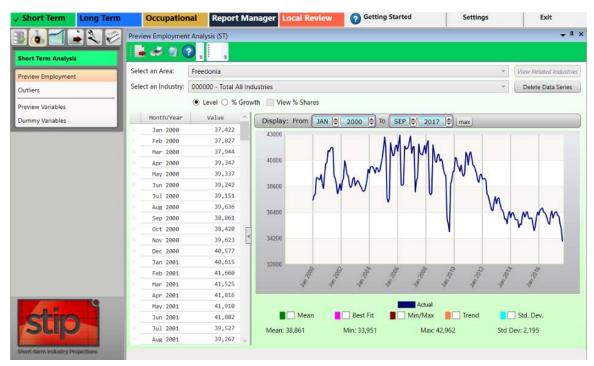


Figure 1: Preview Employment Module

#### View Monthly Industry Employment Data

- 1. Select an Area from the drop-down menu.
- 2. Select an Industry.
- 3. Click either the Level or % Growth radio button.
- The Level radio button displays the actual employment data charted.
- The % Growth radio button displays the percent of change of the data charted. The growth calculation represents the compounded annual growth rate for the two-year projection period. A <u>Growth Rate document</u> is available on the Projections Central website in the <u>Short Term Resources</u> section.
- The View % Shares check box displays (as a separate line on the graph) the percent of a sub-state area industry employment, compared to the state total for the industry. To activate the View % Shares check box, select a sub-state area from the Select an Area drop-down menu.

4. Change the display months and years by <u>adjusting the Display date spinner</u>, or by <u>selecting a point on the graph</u>. The graph will be updated automatically as changes are entered using these controls. <u>Graph Enhancement Controls</u> can also be used to overlay statistical measures on the graph.

The **data grid** displays the date (**Month/Year**) and employment level (**Value**) for the selected area and industry historical series. When scrolling through the data grid, a date pop-up will appear (see Figure 2). As you move the scroll bar, the pop-up will display the month/year in chronological order. When the desired date is located in the series, release the mouse button and the selected date will appear at the top of the grid.

| Year / Qtr  | Value        | ^ |
|-------------|--------------|---|
| 1991 02     | 5.234.199    |   |
| 199: Year / | Qtr: 1991 Q3 |   |
| 1991 Q4     | 5,204,573    |   |
| 1992 Q1     | 5,084,673    |   |

Figure 2: Date pop-up

Alternatively, click on a value in the Data Grid and move up and down through the series with the keyboard arrow buttons.

#### Edit the Data Grid

- 1. Highlight the row you want to adjust.
- 2. Right click and select Add, Edit, or Delete from the context menu.

• To **add new information**, select **Add**. A new record will appear at the top of the grid. Double-click in the blank **Month/Year** field and enter the date.

Tou can enter the date as Oct 2008, October 2008, or 10 2008. All of these examples will format to Oct 2008.

- Press **Tab** to or double-click the **Value** field to enter a value. Press **Enter** to add the record and the value will be sorted into the proper order within the grid. **Right click** and select **Cancel Add** to delete the new row without adding it to the data series.
- To edit a value, **right click** it and select **Edit**. Type the new value and press **Enter** to save it.
- To delete an observation from the series, right click it and choose **Delete**. When prompted, click **Yes** to delete the record.

Multiple observations can be deleted simultaneously. For instructions on making multiple selections, click here.

#### Additional Preview Employment Options

- Click the **Review Related Industries** button, to display a list of industries related to the selected industry in a new window.
- Click the **Delete Data Series** button to remove employment data for the selected area/industry combination.

#### Export/Print the Area/Industry Combination

- Click the **Export** button on the Active Module Toolbar to create a spreadsheet from the area/industry selection.
- Click the **Print** button to print a report.

#### **Related Content**

<u>Review Zero/Neg/Missing Values</u>

# Outliers

**Outliers** are data that deviate from normal seasonal fluctuations. An outlier is a point in a time series that has a value different enough from the points immediately surrounding it to raise questions about that point's validity.

Outliers may occur for several reasons:

- Errors in the data.
- Very small data values causing relative fluctuations.
- Economic upturns or downturns reflected in employment values rising or falling suddenly.

It is the analyst's responsibility to decide the cause of a particular outlier's presence in an employment series. The software cannot make that decision. However, the Outlier module provides the tools to search for possible outliers and to suggest possible alternative values.

The Outlier module is duplicated in the Short and Long Term applications. The only difference is Short Term displays monthly data in addition to yearly data. The Long Term Outliers module will calculate yearly data only.

#### **Screen Controls**

- Settings tab
  - Select Areas drop-down
  - Analyze All Areas check box
  - Three times the interquartile range or greater radio button
  - Two standard deviations from the differenced mean or greater radio button
  - Absolute magnitude difference of 1200 or greater radio button
  - Top 100 by absolute differenced from the differenced median radio button
- Time Series Plot tab
  - See the <u>Time Series Plot Tab</u> section
- Transformed Time Series Plot tab
  - See the <u>Transformed Time Series Plot Tab</u> section
- Seasonality Plot tab (Short Term only)
  - See the <u>Seasonality Plot Tab</u> section
- What's an outlier button
- Change Default Outlier Magnitude button
- Change Default Outlier Count button

#### • Find Outliers button

| ✓ Short Term Long Term                 | Occupational          | Report Manager Local Re               | eview Settings                | Exit         |
|--|-----------------------|---------------------------------------|-------------------------------|--------------|
|  | Outliers (ST)         |                                       |                               | <b>→</b> Ⅱ × |
| Short Term Analysis                    | a 🖉 🕄 📒               | +                                     |                               |              |
| Preview Employment                     | Settings Time Series  | Plot Transformed Time Series Plot     | Seasonality Plot              |              |
| Outliers                               | Select Areas: Freedon | ia ~                                  | Analyze All Areas             |              |
| Preview Variables<br>Dummy Variables   | Show Outliers         | erquartile range or greater.          | What's an outlier?            |              |
|  | _                     | tions from the differenced mean or g  | reater.                       |              |
|  | O Absolute magnitude  | e difference of 1200 or greater       | Change Default Outlier Ma     | gnitude      |
| lating J                               | O Top 100 by absolute | e difference from the differenced med | dian Change Default Outlier C | Count        |
| SUP<br>Short-farm Industry Projections | Find Outliers <<      | Click here to find industries with o  | utliers                       |              |

Figure 1: Outliers module

#### **Prepare Outlier Processing**

1. Select an area from the **Select Areas** drop-down menu, or check **Analyze All Areas** box.

2. Select a **Show Outliers** radio button.

To display the Outlier Detection Methodologies explanation, click the **What's an outlier** button.

Outliers to show include:

- Three times the interquartile range or greater.
  - This option calculates quartiles for the differenced series at the 25th, 50th, and 75th percentile. The difference between the 75th and 25th percentile is called the interquartile range. The system flags any industries with points on the differenced series that are more than three times the interquartile range, above the 75th percentile or below the 25th percentile.
- Two standard deviations from the differenced mean or greater.
  - This calculates the standard deviation from the mean of the differenced series, then flags any industries with points on the differenced series that are more than two standard deviations above or below the mean.

- Absolute magnitude difference of 1200 or greater.
  - This flags any industries with points on the differenced series that have an absolute value above a specific setting. The default magnitude to compare against is 1,200.

Click the **Change Default Outlier Magnitude** button to set a different absolute magnitude difference.

- Top 100 by absolute difference from the differenced mean.
  - This ranks all differenced points for all industries by the absolute value of their differences from the median of the differenced series, then flags any industries that have points in the top portion of the list. By default, the top 100 points measured by absolute difference are selected.

Click the **Change Default Outlier Count** button to set a different number of points to return.

3. Click the **Find Outliers** button. When the outlier calculations are complete, the view will be switched to the **Time Series Plot** tab to display the results.

|  | ries Plot Transfor   | rmed Time Series Plot Seasonality Plot                          |                             |
|--|--|---|-----------------------------|
| iers: All Areas -                            | Three times the inte   | rquarble range or greater                                       |                             |
| ct an industry to                            | analyze the outliers   | in the time series: 000000 - Total All Industries (Freedonia) 🎽 |                             |
| Nonth/Year                                   | Value ^  | Display: From JAN © 2000 © To SEP © 2017 © max                  |                             |
| Jan 2000                                     | 37,422   | 43000   |                             |
| Feb 2000                                     | 37,827   | 1.J.A.A.  |                             |
| Mar 2000                                     | 37,944   | n IMPMMA M  |                             |
| Apr 2000                                     | 39,347   |   |                             |
| May 2000                                     | 39,337   |   | 5                           |
| Jun 2000                                     | 39,242   | 30600   |                             |
| Jul 2000                                     | 39,151   |   | \M                          |
| Aug 2000                                     | 39,636   | 36400   | Inman                       |
| Sep 2000                                     | 38,961   |   | 1 2 2 2 1                   |
| Oct 2000                                     | 38,420   | 34200 OUTLIER   |                             |
| Nov 2000                                     | 39,623   |   |                             |
| Dec 2000                                     | 40,577   | 32000   |                             |
|  | 40,615   |   |                             |
| Jan 2001                                     | 41,660   | 1 1 1 1 1 1 1   | 1 1                         |
| Jan 2001<br>Feb 2001                         | 41,000   |   |                             |
| Feb 2001<br>Mar 2001                         | 41,525   |   |                             |
| Feb 2001                                     | and a second | Employment Outliers   | Ord Day                     |
| Feb 2001<br>Mar 2001<br>Apr 2001<br>May 2001 | 41,525<br>41,816<br>41,910   | Mean Best Fit Min/Max Trend                                     | Std. Dev.                   |
| Feb 2001<br>Mar 2001<br>Apr 2001             | 41,525<br>41,816   |   | Std. Dev.<br>Std Dev: 2,195 |

Figure 2: The Time Series Plot tab displays

Red dots indicate the calculated locations of outliers. If there are no outliers within the chosen criteria, the Time Series Plot tab will not display.

The **Transformed Time Series Plot** tab will also be unlocked after clicking the **Find Outliers** button:

#### **Related Content**

- <u>Time Series Plot Tab</u>
- Transformed Time Series Plot Tab
- <u>Seasonality Plot Tab</u> (Short Term only)

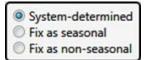
## **Time Series Plot Tab**

The Time Series Plot tab displays the outlier information you initially selected in the Outlier module. At the top of the screen, the area and type of outlier is displayed.

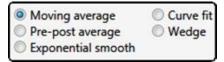
#### **Screen Controls**

•

- Select an industry drop-down menu
  - Display date spinner
    - o Max button
- Graph Enhancement Controls



- System-determined radio button
- Fix as seasonal radio button (selecting this option will unlock the Seasonality Plot tab)
- Fix as non-seasonal radio button



- Adjustment Options
  - Moving average radio button This option takes the average of the preceding three months (default) as the new value for an outlier point. It will display a green dot on the graph as the suggested value.
    - Select number of months (or years in Long Term) drop-down
  - **Pre-post average** radio button This option averages the values of the points immediately before and after the outlier points.
  - Exponential smooth radio button This option displays the <u>R-Squared</u> value of the smoothing equation, which can help determine the validity of the adjusted values.
  - Curve fit radio button This option displays the R-Squared value for use in fitting a first-degree linear equation to the time series or a seconddegree polynomial equation.
    - Select degree of equation drop-down
  - Wedge radio button This option requires two outlier points for calculation. The system draws a straight line between the point immediately before the first outlier and immediately after the last outlier. This causes the interpolation of the outlier points as well as the intermediate values.
    - Start point (anchor) date spinner
    - End point (value) date spinner

- Show Outlier/ Adjusted Values button
- **Outlier Adjustment Methodology** button opens a document which explains the moving average, pre-post average, exponential smooth, curve fit, and wedge methodologies/adjustments in more detail.
- **Save** button This button replaces the outlier values with new values, based on the methodology chosen.

#### Configure Outlier Data on the Time Series Plot Tab

1. Select an industry from the **Select an industry to analyze the outliers in the time series** drop-down menu.



2. Check one or more of the Graph Enhancement Controls, if desired.

Figure 1: Time Series Plot tab with the Trend Graph Enhancement Control

3. Set the time frame using the **Display date** spinner. Months and years are available in Short Term.

 Click the Max button to automatically set the longest time frame possible. It is also possible to <u>select chart dates with the mouse</u> to examine them in greater detail. 4. When choosing either the **Fix As Seasonal** or **Fix As Non-Seasonal** radio buttons, a dialog box will be displayed asking if the outlier points for this industry should be recalculated or not. Select the appropriate response.

5. Select an **Adjustment Option** radio button (if desired).

6. Click the **Show Outlier/Adjusted Values** button to view detailed information about the chosen industry. The outlier values will be opened in a new window:

|              | Date   | Original Value | Adjusted Value | % Diff | ^ |
|--------------|--------|----------------|----------------|--------|---|
| [199301] Jan | n 1993 | 38,536         | 39,471         | 2.43   |   |
| [199307] Ju  | l 1993 | 38,003         | 38,687         | 1.80   |   |
| [199504] Apr | n 1995 | 36,948         | 37,399         | 1.22   |   |
| [199601] Jan | n 1996 | 35,320         | 36,751         | 4.05   |   |
| [199604] Apr | n 1996 | 34,131         | 35,825         | 4.96   |   |
| [199610] Oct | t 1996 | 33,832         | 34,759         | 2.74   |   |
| [199710] Oct | t 1997 | 33,233         | 34,274         | 3.13   |   |
| [199801] Jan | n 1998 | 32,756         | 33,496         | 2.26   |   |

Figure 2: Outlier/Adjusted Values with Moving Average selected

7. Click the Save button.

Click the **Outlier Adjustment Methodology** button to view how the adjustments were calculated. The **Outlier Adjustment Methodologies** document will open in a new window.

#### Edit the Data Grid

The data grid displays the data series dates and Values in a column to the left of the graph. To edit the data grid:

- 1. Highlight the row you want to adjust.
- 2. Right click and select Add, Edit, or Delete to adjust the values in the graph.

#### **Related Content**

- Outliers
- <u>Transformed Time Series Plot Tab</u>
- <u>Seasonality Plot Tab</u> (Short Term only)

### **Transformed Time Series Plot Tab**

The **Transformed Time Series Plot** displays the outlier information you selected in the Outlier module. It graphs the differenced series and shows where differenced points lie outside the outlier definition. The Transformed Time Series Plot tab displays two red lines indicating the value based on the Show Outlier definition chosen on the Settings tab. Any points where two values rise well above or below the red line are marked as outlier points on the Time Series Plot tab.

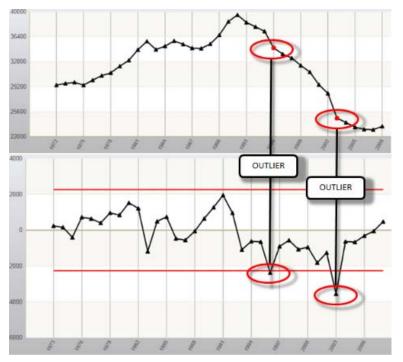


Figure 1: Time Series Plot (top) and Transformed Time Series Plot (bottom) outlier correlations

At the top of the page, the area and type of outlier is displayed. The date and Value display in the data grid on the left. The graph displays the industry data.

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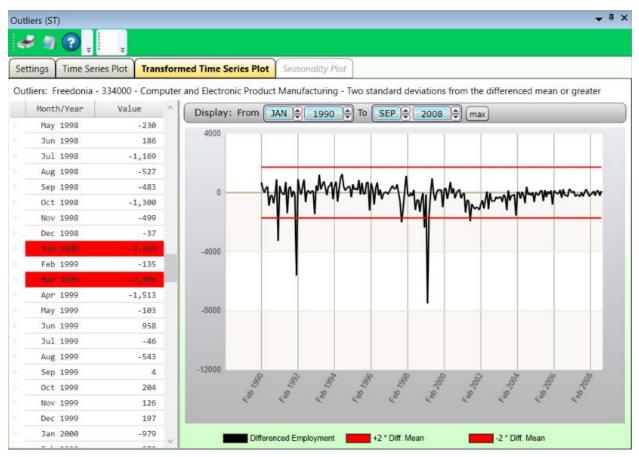


Figure 2: Transformed Time Series Plot tab

- 1. Set the time frame using the **Display** date spinners.
- Click the **max** button to automatically set the longest time frame possible.

To outliers are highlighted in red in the data grid on the left.

#### **Related Content**

- Outliers
- Time Series Plot Tab
- <u>Seasonality Plot Tab</u> (Short Term only)

## **Seasonality Plot Tab**

The **Seasonality Plot** is available only for series that are determined by the software to be seasonal, or where month-to-month employment shows a strong tendency to be affected by seasonal characteristic employment patterns. The Seasonality Plot tab groups all the monthly employment together for the selected industry. The first black line shows January's employment, the next line shows February's employment, and so forth. The red lines show the mean of the monthly employment. Seasonal industries are differenced from year-to-year instead of month-to-month, to remove the effects of the seasonal change. The graphed time series plot in the Seasonality Plot tab shows the obvious seasonal effects.



The Seasonality Plot Tab is not available in Long Term Projections.

Figure 1: Monthly data for Scenic and Sightseeing Transportation

Click the **What's This Graph** button to view a detailed explanation of how data is calculated and displayed on the Seasonality Plot. The **Seasonality Graph** document will open in a new window.

**Projections Suite** 

#### **Related Content**

- Outliers
- <u>Time Series Plot Tab</u>
  <u>Transformed Time Series Plot Tab</u>

### **Preview Variables**

The purpose of the **Preview Variables** module is to view, edit, and graph the national, state, and regional variable historical series data defined by and imported into the system. The variable time series displays in a grid of data and in graph form for the selected variable. Whenever a variable is changed on the screen, the system updates the data and accompanying graph.

#### **Screen Controls**

- Select a Monthly Variable Type drop-down menu
- Select a Monthly Variable drop-down menu
- Delete Data Series button
- Level radio button
- % Growth radio button
- Display date spinner
- Graph Enhancement Controls



Figure 1: Preview Variables module selection

#### **Preview Variables**

- 1. Select a Monthly Variable Type from the drop-down menu.
- 2. Select a Monthly Variable.

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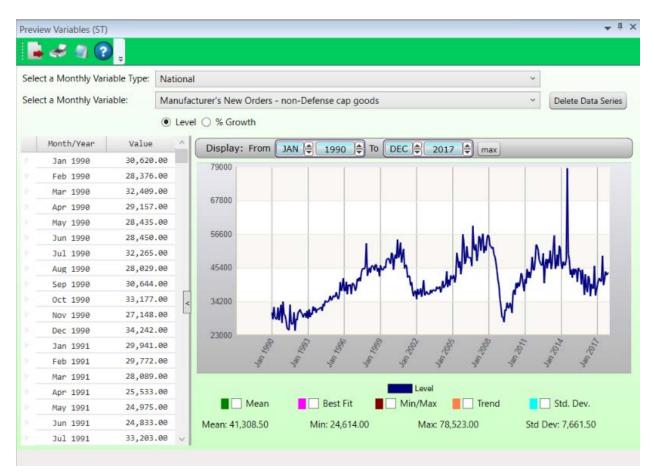


Figure 2: Preview Variables module

- 3. Click either the Level or % Growth radio button.
  - The Level radio button displays the actual employment data charted.
- The % **Growth** radio button displays the percent of change of the data charted. The growth calculation represents the compounded annual growth rate for the two-year projection period. A <u>Growth Rate document</u> is available on the Projections Central website under the Short Term Resources section.

4. Change the display months and years by <u>adjusting the Display date spinner</u>, or by <u>selecting a point on the graph</u>. The graph will be updated automatically as changes are entered using these controls. <u>Graph Enhancement Controls</u> can also be used to overlay statistical measures on the graph.

The **data grid** displays the date (**Month/Year**) and employment level (**Value**) for the selected area and industry historical series. When scrolling through the data grid, a date pop-up will appear (see Figure 2). As you move the scroll bar, the pop-up will display the month/year in chronological order. When the desired date

is located in the series, release the mouse button and the selected date will appear at the top of the grid.

|    | Year | / Qtr  | Value     | 2    | ^ |
|----|------|--------|-----------|------|---|
| F. | 1991 | 02     | 5.234     | 199  |   |
|    | 199: | Year / | Qtr: 1991 | Q3   |   |
|    | 1991 | Q4     | 5,204     | ,573 |   |
|    | 1992 | Q1     | 5,084     | ,673 |   |

Figure 3: Date pop-up

Alternatively, click on a value in the data grid and move up and down through the series with the keyboard arrow buttons.

#### Edit the Data Grid:

- 1. Highlight the row you want to adjust.
- 2. Right click and select Add, Edit, or Delete from the context menu.
- To **add new information**, select **Add**. A new record will appear at the top of the grid. Double-click in the blank **Month/Year** field and enter the date.

Tou can enter the date as Oct 2008, October 2008, or 10 2008. All of these examples will format to Oct 2008.

This is a method to add a single value. To enter several at once, use <u>Import</u> <u>Spreadsheet</u>.

- Press **Tab** to or double-click the **Value** field to enter a value. Press **Enter** to add the record and the value will be sorted into the proper order within the grid. **Right click** and select **Cancel Add** to delete the new row without adding it to the data series.
- To edit a value, **right click** it and select **Edit**. Type the new value and press **Enter** to save it.
- To delete an observation from the series, right click it and choose **Delete**. When prompted, click **Yes** to delete the record.

Multiple rows can be deleted simultaneously. For instructions on making multiple selections, click here.

#### **Additional Preview Variables Options**

Click the **Review Related Industries** button, to display a list of industries related to the selected industry in a new window.

Click the **Delete Data Series** button to remove variable data from the selected variable type.

#### Export/Print the Variable Information

- Click **Export** on the Active Screen Toolbar to create a spreadsheet with the variable data.
- Click **Print** to print the variable data.

#### **Related Content**

- Variable Directory
- <u>Review Variables</u>
- Export Variable Series

## **Dummy Variables**

Use the **Dummy Variables** module to create or modify dummy variables for use in the Leading Index and Project Single Region modules.

Dummy variables are used when there is a major discontinuity in a data series. Create dummy variables to represent key events at a point in time or to represent a series of data points for a specific period. For example, an analyst may want to contrast differences in the economy during a different tax season, during hurricane recovery efforts, or after a major business center was built in an MSA. Dummy variables are available for use by some models to affect the projected values for industries.

#### **Screen Controls**

- Select Variable drop-down
- Variable Type drop-down
- Add button
- **Delete** button
- Save button
- Cancel button
- From/To date spinner
  - Max button
- Wrap Mode check box
- Add Values button
- **ON** button
- **OFF** button
- All ON button
- All OFF button
- Remove Value button

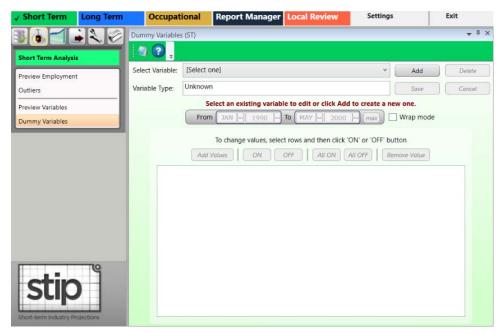


Figure 1: Dummy Variables module

#### Add a Dummy Variable

- 1. Click the **Add** button. The Add Variable dialog box will be displayed.
- 2. Type a Variable Name and select a Variable Type.

3. Click the **OK** button. The new variable will be added to the Dummy Variables screen:

| Dummy Variable   | s (ST)  |             |              | <b>→</b> # × |
|------------------|---|-------------|--------------|--------------|
| a 🕄 📮            |   |             |              |              |
| Select Variable: | Test  | * (         | Add          | Delete       |
| Variable Type:   | National  |             | Save         | Cancel       |
|                  | Editing new variable, click Cancel              | to reset.   |              |              |
|                  | From JAN 2 1990 To MAR 2017                     | max         | Wrap mod     | e            |
|                  | To change values, select rows and then click 'O | ON' or 'OFF | ' button     |              |
| (                | Add Values ON OFF All ON A                      |             | Remove Value |              |
|                  |   |             |              |              |
|                  |   |             |              |              |
|                  |   |             |              |              |
|                  |   |             |              |              |
|                  |   |             |              |              |
|                  |   |             |              |              |
|                  |   |             |              |              |
|                  |   |             |              |              |
|                  |   |             |              |              |
|                  |   |             |              |              |

Figure 2: Test variable added to Dummy Variables

- 4. Use the **From/To** spinners to select the **From** and **To** dates.
- Click the Max button to automatically set the longest time frame possible.

5. Click **Add Values**. Values from the selected months and years will populate in a list.

| Dummy Variable   | s (ST)   | <b>▼</b> 1         |
|------------------|--|--------------------|
| a 🕐 🔋            |  |                    |
| Select Variable: | Test   | × Add Delete       |
| /ariable Type:   | National   | Save Cancel        |
|                  | Editing new variable, click Cancel to  |                    |
|                  | To change values, select rows and then click 'Of<br>Add Values ON OFF All ON All | N' or 'OFF' button |
|                  | an 1990 0  |                    |
|                  | eb 1990 0  |                    |
|                  | lar 1990 0<br>pr 1990 0  |                    |
|                  | ay 1990 0  |                    |
|                  | un 1990 0  |                    |
|                  | lul 1990 1   |                    |
| A                | ug 1990 1  |                    |
|                  | ep 1990 1  |                    |
|                  | Oct 1990 1   |                    |
| N                | ov 1990 1  | 4                  |

Figure 3: Date values listed

6. To wrap the variables in the box, click **Wrap mode**.

| Select Variable: | Test       |                  |                     |                      | Add          | Delete |
|------------------|------------|------------------|---------------------|----------------------|--------------|--------|
| Variable Type:   | National   |                  |                     |                      | Save         | Cancel |
|                  |            | Editing          | new variable, cli   | ck Cancel to rese    | L.           |        |
|                  | From       | JAN 🖨 1990       | To MAR              | 2017 🕄 (ma           | Wrap mode    |        |
|                  |            |                  |                     |                      |              |        |
|                  |            | To change values | , select rows and t | hen click 'ON' or '( | OFF' button  |        |
|                  | Add        | Values ON        | OFF                 | AII OFF              | Remove Value |        |
| J                | an 1990 0  | Feb 1990 0       | Mar 1990 0          | Apr 1990 0           | May 1990 0   | ~      |
|                  | un 1990 0  | Jul 1990 1       | Aug 1990 1          | Sep 1990 1           | Oct 1990 1   |        |
| N                | ov 1990 1  | Dec 1990 1       | Jan 1991 0          | Feb 1991 0           | Mar 1991 0   |        |
| A                | pr 1991 0  | May 1991 0       | Jun 1991 0          | Jul 1991 0           | Aug 1991 0   |        |
| S                | ep 1991 0  | Oct 1991 0       | Nov 1991 0          | Dec 1991 0           | Jan 1992 0   |        |
| F                | eb 1992 0  | Mar 1992 0       | Apr 1992 0          | May 1992 0           | Jun 1992 0   |        |
|                  | Jul 1992 1 | Aug 1992 1       | Sep 1992 1          | Oct 1992 1           | Nov 1992 1   |        |
| D                | ec 1992 1  | Jan 1993 0       | Feb 1993 0          | Mar 1993 0           | Apr 1993 0   |        |
| M                | ay 1993 0  | Jun 1993 0       | Jul 1993 0          | Aug 1993 0           | Sep 1993 0   |        |
| C                | Oct 1993 0 | Nov 1993 0       | Dec 1993 0          | Jan 1994 0           | Feb 1994 0   |        |
|                  | lar 1994 0 | Apr 1994 0       | May 1994 0          | Jun 1994 0           | Jul 1994 0   |        |

Figure 4: Wrap mode

Dummy variables have two values, either a zero or a one. The default value is zero. A one corresponds to (or is used to "mark") some event or value that needs to be displayed for a specific month/year.

- Select the value and click **ON** to change the variable value to one.
- Select the value and click **OFF** to deselect the value.
- Click All ON to select all values.
- Click All OFF to deselect all values.
- Click **Remove Value** to remove a selected value from the list.

Multiple values can be selected at once. For assistance with selecting multiple variables at a time, click <u>here</u>.

7. Once all values you want included are modified, click **Save**. The variable will become available for selection and use in the <u>Leading Index</u> and <u>Project Single</u> <u>Region</u> modules.

#### Edit a Dummy Variable

- 1. Select a variable from the **Select Variable** drop-down menu.
- 2. Edit the values using the listed controls.

3. Click the **Save** button when the variable has been modified to your specification.

#### **Delete a Dummy Variable**

1. Select a variable from the **Select Variable** drop-down menu.

2. Click the **Delete** button. A **Delete Monthly Variable** dialog box will be displayed.

3. Click **Yes** to delete the variable. Click **No** to keep the variable.

# **Short Term Projections Menu Items**

## **Short Term Projections Introduction**

Use the **Short Term Projections** group menu items to analyze variables, project industry employment values, view and analyze projections, and roll up projections.



Figure 1: Short Term Projections group menu

The Short Term Projections group menu contains the following selections:

- Leading Index
- Project Single Region
  - o Results Graph Tab
  - o Statistical Details Tab
  - o Details Graph Tab
  - o User Defined Models Tab
- Project Multiple Regions
  - o Industry View Tab
  - o <u>Area View Tab</u>
- View Projections
- Rollup Projections

# **Leading Index**

The purpose of the **Leading Index** module is to choose and evaluate variables to be used to project industry employment. Selecting, processing, and saving of different variable/area combinations can enhance the accuracy of projections. Use variables to analyze state and sub-state areas as prime factors in explaining the economic activity in the projections process. Model types that use the leading index variables are OLS, VAR, and BVAR when the "Variables" option is selected in Project Single Region (see Figure 1).

| Models         |      |
|----------------|------|
| Trend          | .010 |
| Long Run Drift | ~    |
| OLS            | -    |
| Variables      | Y    |
| ARMA           |      |
| ARMA(0,2)      | ۷    |
| VAR            |      |
| Variables      | ~    |
| BVAR           | -    |
| Variables      | v    |

Figure 1: Variables selections in Project Single Region

A prerequisite to running the Leading Index module is that you must already have the total employment for the selected area imported for the Leading Index to process. The variables are evaluated with the total employment to see how well they compare.

## **Screen Controls**

- Select an Area drop-down menu
- Start/End date spinner
   O Max button
- Analyze button
- Save button
- Save button
- National tab
- State tab
- Regional tab
- Graph tab
- Select National Variables to Analyze list box

## **Projections Suite**

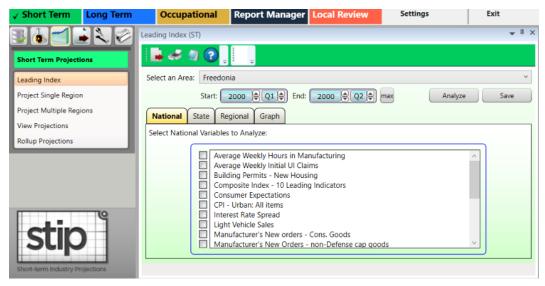


Figure 2: Leading Index module

#### Analyze Variables

1. Select an Area from the drop-down menu.

2. Select a time frame using the **Start/End date** spinners. Default date values as determined by variable data will be displayed.

- Click the Max button to automatically set the longest time frame possible.
- Data imported into the system are monthly data points, but are displayed as quarterly in this evaluation.

These controls set the time frame for evaluating how well the variables follow the total employment for the area. The analysis is broken up into the three types of variables: National, State, and Regional. Results display for each variable as well as how all variables did together.

3. Select the variables to be analyzed from each tab.

Variables from any combination of the National, State, or Regional tabs can be selected for the same analysis. No more than six variables can be selected on each tab.

4. Click the **Analyze** button. The Variable Name, and 2 Quarter and 4 Quarter Horizon lead times will display in a table at the bottom of the screen.

• The National variables display on the National tab, the State on the State tab, and Regional on the Regional tab.

• The **All Variables Combined** portion of the table includes National, State, and Regional variables, and displays on each tab.

Selected variables are analyzed to determine their effectiveness against the total employment for the area. There are two analytical lead times displayed for this screen, a two-quarter horizon and a four-quarter horizon. There are also two parameter values for each lead time frame: % Turns, and Historical Fit (see the bottom of Figure 3).

| ading Index (ST)   |                                 |           |         | т џ       |
|--|---------------------------------|-----------|---------|-----------|
| 🛓 🛹 🕼 😧 📜 📜  |                                 |           |         |           |
| elect an Area: Freedonia   |                                 |           |         |           |
| Start: 2000 Q1 DEnd:   | 2017 Q1 🖨                       | max       | Analyze | Save      |
| National State Regional Graph  |                                 |           |         |           |
| Select National Variables to Analyze:  |                                 |           |         |           |
| Average Weekly Initial UI Clain Building Permits - New Housir Composite Index - 10 Leading Consumer Expectations CPI - Urban: All items Interest Rate Spread Uight Vehicle Sales Manufacturer's New orders - 0 Manufacturer's New Orders - 1 | ng<br>Indicators<br>Cons. Goods | ls        |         |           |
|  | 2 Qtr                           | Horizon   | 4 Qtr H | lorizon   |
| Variable Name  | % Turns                         | Hist. Fit | % Turns | Hist. Fit |
| Building Permits - New Housing   | 1.0000                          | 0.0730    | 0.8000  | 0.0606    |
| CPI - Urban: All items   | 0.6000                          | 0.0047    | 1.0000  | 0.0163    |
| Light Vehicle Sales  | 0.4000                          | 0.0114    | 1.0000  | 0.0076    |

Figure 3: Data displayed in table

The **% Turns** parameter reveals the effectiveness of the index against the total area employment to determine what percent of the turns are captured. The goal is a value of 1.0000, or close to it. The <u>Historical Fit</u> parameter displays the <u>Adjusted R-Squared</u> statistic for each regression equation evaluated. This indicates the general explanatory power of the index relative to variation in the employment series.

When more variables are used, better results for the % Turns and Historical Fit are usually produced, but the results can be misleading. Increasing the number of variables is contrary to having the most efficient results. Capturing the turns and Historical Fit using fewer variables (3-5) has better predictive capabilities than using many (i.e., the maximum of 18) variables.

The selected Leading Index variables will serve as a default set of explanatory variables in the <u>OLS</u>, <u>VAR</u>, and <u>BVAR</u> projection models. The selection of variables may require various trial and error analyses to find a set that works for an area.

Each of the variable types (National, State, and Regional) are displayed and evaluated on their respective tabs. Each of the variable lead values are calculated individually, then as combined variables. Finally, all the variables are calculated together to show how effectively they do together. Each of the variable type tabs will display the combined variable values.

#### **Display the Leading Index Values in Graph Form**

- 1. Click the Graph tab.
- 2. Click the Level or Growth radio buttons to display graph details.
- The **Level** graph displays the <u>Actual values</u> as well as projected values for the 2 Lead and 4 Lead.
- The **Growth** graph has some additional information to help in the analysis. Whenever there are at least two consecutive quarterly growth increases followed by a consecutive growth decrease, the label **DT** displays to indicate a **downturn** in the economy. Conversely, whenever there are at least two consecutive quarterly growth decreases, followed by a consecutive quarterly increase, the label **UT** displays to indicate an **upturn** in the economy. Overall growth values for the actual 2 Lead and 4 Lead are displayed along the bottom of the graph.



Figure 4: Leading Index growth graphed data

## Save the Leading Index Variables

1. Once a set of variables has been selected, use any tab except for the Graph tab to click the **Save** button to use the leading index variables in the <u>Project Single</u> <u>Region</u> module (when the Variables option is selected for a model). A dialog box will be displayed.

2. Click **OK** to save the data.

## **Related Content**

• Project Single Region

# **Project Single Region**

Use the **Project Single Region** module to project industry employment for a selected area using various economic models.

This is the main module for calculating projections in the Short Term application. The expression short-term means projected values are calculated for a two-year time frame. To use this module, all employment data importing, review and analysis tasks, as well as any variable evaluation preparations and creation are required. Save the projected industry information to use in the Occupational Projections application or for other reporting purposes.

## **Screen Controls**

- Select an Area drop-down
- Select Industry drop-down
- Related Industries button
- Start Quarter spinner
- Models selection group
  - o <u>Trend</u> drop-down
  - o <u>OLS</u> drop-down
  - o ARMA drop-down
  - VAR drop-down
  - **BVAR** drop-down (if the User-defined module is visible, this will be a fill-in field)
- **Tournament** button
- Save Projections drop-down menu
- Save button
- View Errors/View Data toggle button
- Results tab
- Results Graph tab
- Statistical Details tab
- Details Graph tab
- User Defined Models tab
- Projections Process buttons
  - Step 1 button
  - o Step 2 button
  - Step 3 button

| ✓ Short Term             | Long Term  | Occupational                 | Report             | Manager                      | Local Review                     | Getting Sta    | arted            | Settings |     | Exit                        |
|--------------------------|------------|------------------------------|--------------------|------------------------------|----------------------------------|----------------|------------------|----------|-----|-----------------------------|
| 31.                      |            | Project Single Region (ST)   |                    |                              |                                  |                |                  |          | _   |                             |
| Short Term Project       |            | 📕 🛹 🖉 🕄                      | Saved <sub>₹</sub> |                              |                                  |                |                  |          |     |                             |
| Leading Index            |            | Select an Area:<br>Freedonia | v                  | Select Indust<br>(Saved) 000 | ry:<br>0000 - Total All Industri | es             |                  | ~        | No  | o Related Industries Assign |
| Project Single Regio     | n          | Start Quarter:               |                    |                              |                                  | From:          | To:              | _        |     |                             |
| Project Multiple Reg     | ions       | 2000 🗣 Q1 🖨                  |                    |                              | Projections Pe                   | eriod: 2015 Q2 | 2017 Q1          |          |     |                             |
| View Projections         |            | Models                       | Quarter            | Trend                        | OLS                              | ARMA           | VAR              | B        | VAR | Mix                         |
| Rollup Projections       |            | Trend                        |                    |                              |                                  |                |                  |          |     |                             |
|                          |            | Linear Trend Y               |                    |                              |                                  |                |                  |          |     |                             |
|                          |            | OLS                          |                    |                              |                                  | View E         | rrors            |          |     |                             |
|                          |            | Variables Y                  |                    |                              |                                  |                |                  |          |     |                             |
|                          |            | ARMA                         |                    |                              |                                  |                |                  |          |     |                             |
|                          |            | ARMA(1,0) ~                  |                    |                              |                                  |                |                  |          |     |                             |
|                          |            | VAR                          |                    |                              |                                  |                |                  |          |     |                             |
|                          |            | Variables ~                  |                    |                              |                                  |                |                  |          |     |                             |
|                          |            | BVAR                         |                    |                              |                                  |                |                  |          |     |                             |
|                          |            | Variables ~                  |                    |                              |                                  |                |                  |          |     |                             |
|                          |            |                              |                    |                              |                                  |                |                  |          |     |                             |
|                          |            | Tournament                   |                    |                              |                                  |                |                  |          |     |                             |
|                          |            | Save Projections             |                    |                              |                                  |                |                  |          |     |                             |
|                          | 9          | Mix v Save                   |                    |                              |                                  |                |                  |          |     |                             |
| - etile                  |            |                              | Results            | Results Graph                | h Statistical Details            | Details Graph  | User Defined Mod | els      |     |                             |
| <b>DU</b>                |            |                              | Projectio          | ns Process                   |                                  |                |                  |          |     |                             |
| Short-term Industry P    | rojections |                              | Step               | 1                            | Step 2 Step 3                    |                |                  |          |     |                             |
| and an in a start of the |            |                              |                    |                              |                                  |                |                  |          |     |                             |

Figure 1: Project Single Region module

## Set Up Project Single Region

- 1. Select and Area.
- 2. Select an industry from the **Select Industry** drop-down menu.
- Optionally, click the **Related Industries** button to view the industries that will be included, if the industry has related industries. If the industry does not have related industries, the button will be unavailable and read *No Related Industries Assigned*.

This option is for viewing only and not for setting the Related Industries. To set related industries, refer to the <u>Manage Related Industries</u> module.

3. Set the **Start Quarter** year and quarter using the date spinner. The Start Quarter date spinner is populated with the quarter date that corresponds to the beginning monthly value of the selected industry. Keep in mind (and this is an important distinction) that the imported industry employment data is for monthly observations but the output for projected values will be displayed by quarter.

The Projections Period label displays just below the Select Industry drop-down, and is based on the projection round that was defined and selected in the Manage

<u>Rounds</u> module. The Projections Period information changes when you move through Steps 1, 2, and 3 (follow the link for a detailed description of the steps).

The When this module is first opened, this label will be set to the Step 1 time frame, which is 24 months back from the round setting.

4. Select models from the **Models** selection group. The Models selection group contains five model types that are available for processing projections: Trend, OLS, ARMA, VAR, and BVAR. Each model type contains a number of models available for selection.

| Select an Area:  |        | Select Industry: |                        |         |         |    |         |                     |
|--|--------|------------------|------------------------|---------|---------|----|---------|---------------------|
| Freedonia  | ч.     | (Saved) 000000   | - Total All Industries |         |         | ~  | No Rela | ted Industries Assi |
| Start Quarter:   |        |                  |                        | From:   | To:     |    |         |                     |
| 2000 @ Q1 @  |        |                  | Projections Period:    | 2015 Q2 | 2017 Q1 |    |         |                     |
| Indels Contraction | uarter | Trend            | OLS                    | ARMA    | VAR     | BV | /AR     | Mix                 |
| Linear Trend Y   |        |                  |                        |         |         |    |         |                     |
| OLS  |        |                  |                        | View En | ors     |    |         |                     |
| Variables 🗸  |        |                  |                        | 2       |         |    |         |                     |
| ARMA   |        |                  |                        |         |         |    |         |                     |
| ARMA(1,0) ~  |        |                  |                        |         |         |    |         |                     |
| VAR  |        |                  |                        |         |         |    |         |                     |
| VAR  |        |                  |                        |         |         |    |         |                     |
|  |        |                  |                        |         |         |    |         |                     |
| Variables *  |        |                  |                        |         |         |    |         |                     |
| and the second se  |        |                  |                        |         |         |    |         |                     |
| Variables ~  |        |                  |                        |         |         |    |         |                     |
| Variables ~  |        |                  |                        |         |         |    |         |                     |
| Variables •<br>BVAR<br>Variables •<br>Tournament   |        |                  |                        |         |         |    |         |                     |
| Variables *<br>BVAR<br>Variables *   |        |                  |                        |         |         |    |         |                     |

Figure 2: Models selection group

## **Tournament Button**

The <u>Tournament</u> button is optional, available to process all four Trend models, all four OLS, VAR, and BVAR models, and all nine ARMA models. By clicking the Tournament button, the system will process all the models and select a winner from each model type. The winner for each type is the model with the lowest Mean Absolute Percent Error (<u>MAPE</u>). The Tournament button is available to help pare down the models, but is not required to run before continuing with the Projections Process steps. Click the **Tournament** button to use this automatic method to select models.

#### **Manually Customize Models**

Manually select options from the Trend, OLS, ARMA, VAR, and BVAR model drop-down menus. Model options use the information you set up previously in the Short Term Projections modules.

If you select User-defined from the OLS, VAR, or BVAR model drop-down, the User Defined Models tab will activate. See <u>User Defined Models</u> for more information.

If you select an industry with related industries and one of the related industries does not have monthly employment data, a Step Completion Issue dialog will be displayed and the projection will not run. To set related industries, refer to the <u>Manage Related Industries</u> module.

5. When the models have been selected, either with the Tournament button or manually, you are ready to proceed to through the Projections Process Step buttons.

#### **Projections Process Step Buttons**

1. Click **Step 1**. Step 1 selects data from the starting quarter to 24 months back from the ending date of the selected round. This gives an idea of how well the projections do against the actual employment for the 24-month period.

| elect an Area:                 |   |         | Select Industry:    |                       |             |                     |            |                  |
|--------------------------------|---|---------|---------------------|-----------------------|-------------|---------------------|------------|------------------|
| Freedonia                      |   | ~       | (Saved) 000000 - To | otal All Industries   |             | ~                   | No Related | d Industries Ass |
| tart Quarter:                  |   |         |                     |                       | From:       | To:                 |            |                  |
| 2000 😂 Q1                      | • |         |                     | Projections Period:   | 2015 Q2     | 2017 Q1             |            |                  |
| lodels                         |   | Quarter | Trend               | OLS                   | ARMA        | VAR                 | BVAR       | Mix              |
| Trend                          |   | 2015 Q2 | 36.502              | 35.086                | 35.877      | 35,361              | 35,485     | 35,69            |
| Random Walk                    | ~ | 2015 Q2 | 36,502              | 34,980                | 35,877      | 35,759              | 35,068     | 35,59            |
|                                | _ | 2015 Q3 | 36,502              | 34,960                | 35,803      | 35,759              | 35,723     | 35,96            |
| OLS                            |   | 2015 Q4 | 36,502              | 35,974                | 36.054      | 36,282              | 36.069     | 36,20            |
| Variables                      | ~ | 2016 Q1 | 36,502              | 34,814                | 35,667      | 35,545              | 35,324     | 35,63            |
| ARMA                           |   | 2016 Q2 | 36,502              | 34,711                | 35,105      | 35,936              | 34,899     | 35,54            |
| ARMA(1,1)                      | ~ | 2016 Q4 | 36,502              | 35,392                | 35,590      | 36,126              | 35,532     | 35,89            |
|                                |   | 2017 Q1 | 36,502              | 35,710                | 35,840      | 36,339              | 35,853     | 36,10            |
| VAR                            |   |         |                     |                       |             |                     |            |                  |
| Variables                      | ~ |         |                     |                       |             |                     |            |                  |
| BVAR                           |   | Growth  |                     | -0.7572               | -0.5767     | 0.1130              | -0.5587    | -0.214           |
|                                |   | MAPE    | 1.2854              | 2.1038                | 1.0888      | 0.8582              | 1.5408     | 0.785            |
| Variables                      | ~ | Weight  | 0.1952              | 0.1192                | 0.2304      | 0.2923              | 0.1628     | 1.000            |
| Tournament<br>Save Projections |   |         |                     | C                     | View Errors |                     |            |                  |
| Mix ~ Sa                       |   |         |                     |                       |             |                     |            |                  |
| In Sur                         |   | Results | Results Graph St    | atistical Details Det | ails Graph  | Iser Defined Models |            |                  |

Figure 3: Step 1 results on the Results tab

The calculated projected employment values display in a table on the **Results** tab. The **Mix** column displays values that are calculated using the weights of each of the other methods. Toggle the **View Errors/View Data** button to view the errors (percent difference between the projected and <u>actual values</u>) for each step.

The values produced during each step are for analysis. The step process allows you to view projections at different intervals to help determine the best final values. Various tabs with different data views are available (listed below).

2. Click the **Step 2** button. Step 2 selects data from the starting quarter to 12 months (4 quarters) back from the ending date of the selected round. This gives an idea of how well the projections do against the actual employment for the 12-month period. The calculated data displays in the **Results** tab. Clicking the **View Errors/View Data** toggle button will display errors for four quarters on Step 2.

3. Click the **Step 3** button. Step 3 selects data for the full period set by the round, and projects out 2 years (8 quarters) – the full projection period. At the conclusion of this step, you are able to save <u>Forecast Values</u> from your choice of models.

The calculated data displays in the **Results** tab. Clicking the **View Errors/View Data** toggle button in Step 3 will display no errors, because there are no actual values with which to compare the projected values.

After running **Step 3**, projected values are available to be saved as the final values.

#### **Save Calculated Data**

1. Select an option from the **Save Projections** drop-down menu. Save the projection values after choosing and processing them through all 3 steps, analyzing them and evaluating them for the projected models.

2. Click the **Save** button. The **Save** button is only available while in the **Results** tab. The default model is Mix, but it is valid to choose any of the other five models. Saving the values updates any previously saved values. After saving an Industry Projection, the saved quarterly values will be available in the <u>View</u> <u>Projections</u> module.

In addition, the saved status changes in the Active Module Toolbar and the industry title in the combo box will change to saved status as well. The saved information includes eight quarterly values for the selected area, industry, models

chosen, the model saved, and a date time stamp. Additionally, information is written to the Notebook when the final values are saved.

Tou must save a state projection for each industry prior to running sub-state projections using the <u>Project Multiple Regions</u> module.

## Results, Statistical, Details, and User Defined Models Tabs

Follow the links for explanations of the additional tabs:

- Results Graph tab
- <u>Statistical Details tab</u>
- Details Graph tab
- User Defined Models tab

# **Results Graph Tab**

The Results Graph tab is a visual display of the historical series and the eight quarterly projected values for each model type. Colored lines represent each of the projected model types.

## **Screen Controls**

- Display date spinner
- View Graph Data button

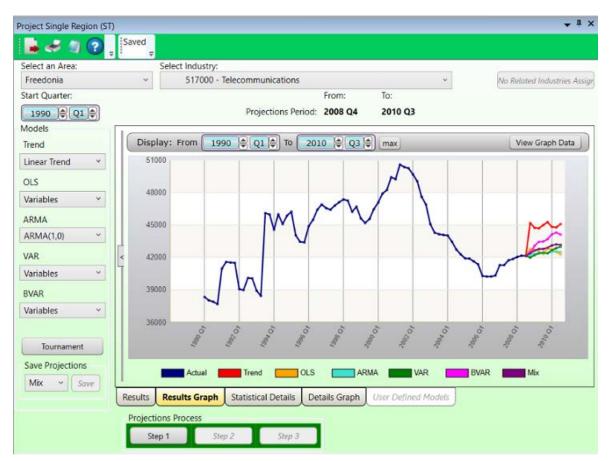


Figure 1: Results Graph tab showing the actual and projected data

<u>Manipulate the Display date spinners</u> to zoom in or out on the graph within a date range. You can also <u>select chart dates with the mouse</u> to look at the information more closely.

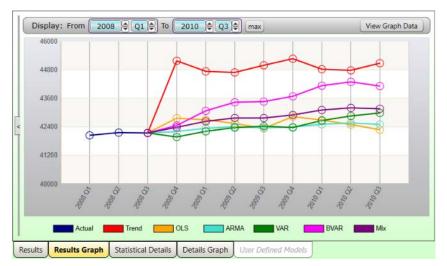


Figure 2: Results Graph tab projected values, zoomed in

Click the **View Graph Data** button to open the table of figures used to calculate the graph in a new (**View Results Data**) window. Projected values will be near the bottom of the table.

| Quarter | Actual | Trend | OLS   | ARMA  | VAR   | BVAR  | Mix  |
|---------|--------|-------|-------|-------|-------|-------|------|
| 2007 Q4 | 41846  | 0     | 0     | 0     | 0     | 0     |      |
| 2008 Q1 | 42044  | 0     | 0     | 0     | 0     | 0     |      |
| 2008 Q2 | 42160  | 0     | 0     | 0     | 0     | 0     |      |
| 2008 Q3 | 42144  | 0     | 0     | 0     | 0     | 0     |      |
| 2008 Q4 | 0      | 45176 | 42765 | 42205 | 41975 | 42457 | 4238 |
| 2009 Q1 | 0      | 44734 | 42697 | 42340 | 42213 | 43073 | 4263 |
| 2009 Q2 | 0      | 44686 | 42542 | 42409 | 42369 | 43434 | 4277 |
| 2009 Q3 | 0      | 44987 | 42334 | 42359 | 42430 | 43462 | 4277 |
| 2009 Q4 | 0      | 45265 | 42829 | 42393 | 42373 | 43685 | 4289 |
| 2010 Q1 | 0      | 44823 | 42687 | 42509 | 42666 | 44132 | 4310 |
| 2010 Q2 | 0      | 44775 | 42496 | 42564 | 42858 | 44291 | 4320 |
| 2010 Q3 | 0      | 45076 | 42279 | 42503 | 42985 | 44115 | 4316 |
|         |        |       |       |       |       |       |      |

Figure 3: View Results Data window, opened by clicking the View Graph Data button

Clicking on any of the Project Single Region controls (Models control group, Select an Area drop-down, etc.) will revert you back to the Results tab to conduct another analysis.

## **Related Content**

- Project Single Region
- Statistical Details tab
- Details Graph tab
- User Defined Models tab

## **Statistical Details Tab**

The **Statistical Details** tab displays statistical information about the projected values for the selected Projection Process step. Various statistics display to help determine the validity of the projections.

#### **Screen Controls**

- Model Details control group
  - Trend button
  - **OLS** button
    - Correction button
  - **ARMA** button
  - VAR button
    - Show FStats button
  - **BVAR** button

| Project Single Region (S1 | 7            |                 |                            |             |              |                 |               | <b>↓</b> □ >             |
|---------------------------|--------------|-----------------|----------------------------|-------------|--------------|-----------------|---------------|--------------------------|
|                           | Saved        |                 |                            |             |              |                 |               |                          |
| Select an Area:           | <b>₽</b> ! ₹ | Select Industry | y:                         |             |              |                 |               |                          |
| Freedonia                 | ~            | (Saved) 0000    | 000 - Total All Industries |             |              | ÷.              | No F          | Related Industries Assig |
| Start Quarter:            |              |                 |                            | From:       | To           |                 |               |                          |
| 1990 Q1 🖨                 |              |                 | Projections Perio          | d: 2008 Q   | 4 20         | 10 Q3           |               |                          |
| Models                    | Model D      | etails          | Values                     |             |              |                 |               |                          |
| Trend                     | Trend        |                 |                            | De          | tails for th | e Var model typ | 0             |                          |
| Linear Trend Y            | OLS          | Correctio       | on Sum of Squared          |             |              |                 | Box Q         |                          |
| OLS                       | ARMA         |                 | Juli of Squared            |             |              | 1               |               |                          |
| Variables Y               | VAR          | Show FSta       |                            | Squared     |              |                 | elyhood       |                          |
| ARMA                      | BVAR         |                 |                            |             |              |                 | rvations      |                          |
|                           | Diver        |                 | Durbir                     | Watson      |              | V               | /ariables     |                          |
| - country (1,0)           |              | Variab          | ole Name                   | Lags        | Beta         | T-Statistic     | T-Probability | StandardError            |
| VAR                       |              |                 |                            |             |              |                 |               |                          |
| Variables ~               |              |                 |                            |             |              |                 |               |                          |
| BVAR                      |              |                 |                            |             |              |                 |               |                          |
| Variables ~               |              |                 |                            |             |              |                 |               |                          |
|                           |              |                 |                            |             |              |                 |               |                          |
| Tournament                |              |                 |                            |             |              |                 |               |                          |
| Save Projections          |              |                 |                            |             |              |                 |               |                          |
|                           |              |                 |                            |             |              |                 |               |                          |
| Mix ~ Save                | Results      | Results Graph   | h Statistical Details      | Details Gra | nh Usar      | Defined Models  |               |                          |
|                           | $\square$    | ·               | Julistical Details         | Details Gra | on toser     | Genned Proteis  | 9             |                          |
|                           | Project      | tions Process   |                            |             |              |                 |               |                          |
|                           | St           | ep 1            | Step 2 Step 3              |             |              |                 |               |                          |

Figure 1: Statistical Details tab

#### **Display Data on the Statistical Details Tab**

1. Click the desired **Model Details** button from the control group. These statistics will help determine what model values are the best. The statistic's **Values** will

display where applicable, for the selected **Model Details**. If N/A displays, that statistic is not available for that model.

Values/Details table:

- Sum of Squared Residuals
- <u>R-Squared</u>
- Adjusted R-Squared
- Durbin-Watson
- Box Q
- Log Likelihood
- Observations
- Variables

Each model displays different statistics in the table for each variable name:

- The number of Lags
- Beta
- <u>T-Statistic</u>
- T-Probability
- Standard Error

| Project Single Region (ST) |                    |                        |                     |           |                  |               |            | <b>→</b> # ×                |
|----------------------------|--------------------|------------------------|---------------------|-----------|------------------|---------------|------------|-----------------------------|
| 📕 🛹 🖉 🖓 🚦                  | Saved <sub>=</sub> |                        |                     |           |                  |               |            |                             |
| Select an Area:            |                    | Select Industry:       |                     |           |                  |               | _          |                             |
| Freedonia                  | ~                  | (Saved) 000000 - T     | otal All Industries |           |                  | ~             | No         | o Related Industries Assign |
| Start Quarter:             |                    |                        |                     | From      | To:              |               |            |                             |
| 1990 Q1 🖨                  |                    |                        | Projections Perio   | d: 2008   | Q4 2010          | Q3            |            |                             |
| Models                     | Model D            | etails                 | Values              |           |                  |               |            |                             |
| Trend                      | Trend              |                        |                     | 0         | etails for the O | LS model typ  | е.         |                             |
| Linear Trend Y             | OLS                | Correction             | Sum of Squared F    | Residuals | 8,880,649,617    | 7.32          | Box Q      | N/A                         |
| OLS                        | ARMA               |                        | R-                  | Squared   | 0.8              | 944 Log Like  | lyhood     | N/A                         |
| Variables ~                | VAR                | Show FStats            | Adjusted R-         | Squared   | 0.8              | 920 Obser     | vations    | 225                         |
| ARMA                       | BVAR               |                        | Durbin              | -Watson   | 0.5              | 362 V         | ariables   | 6                           |
| ARMA(1,0) ~                |                    | Variable Nar           | ne                  | Lags      | Beta             | T-Statistic   | T-Probabil | ity StandardError           |
| VAR                        | Building           | Permits - New Housi    | ng                  | 0         | -103.5795        | -3.3773       | 0.00       | 30.6696                     |
| Variables ~                | Average            | Weekly Initial UI Clai | ms                  | 0         | -651.1665        | -4.0350       | 0.00       | 001 161.3803                |
| BVAR                       | Total No           | n-Farm Employment      |                     | 0         | 23.4622          | 24.5533       | 0.00       | 000 0.9556                  |
|                            | Light Ve           | hicle Sales            |                     | 0         | 36658.0221       | 5.0564        | 0.00       | 000 7249.8811               |
| Variables ~                | NAPM N             | lew Orders             |                     | 0         | -1684.9239       | -2.0377       | 0.04       | 428 826.8636                |
|                            | Constan            | t                      |                     | 0         | 2687388.4177     | 17.6605       | 0.00       | 000 152169.5611             |
| Tournament                 |                    |                        |                     |           |                  |               |            |                             |
| Save Projections           |                    |                        |                     |           |                  |               |            |                             |
|                            |                    |                        |                     |           |                  |               |            |                             |
| Mix ~ Save                 | Results            | Results Graph St       | atistical Details   | Details G | ranh User De     | fined Models  |            | ]                           |
|                            | Tresures           | Tresuits Graphi        |                     | Details G | tapit User De    | futeu rioueis |            |                             |
|                            | Project            | ions Process           |                     |           |                  |               |            |                             |
|                            | Ste                | ep 1 Step 2            | Step 3              |           |                  |               |            |                             |
|                            |                    |                        |                     |           |                  |               |            |                             |

Figure 2: OLS selected from the Model Details control group

The **Trend Model** displays 12 monthly variables, plus the constant. <u>OLS</u>, <u>VAR</u>, and <u>BVAR</u> models display the variables selected in the <u>Leading Index</u> module. VAR and BVAR repeat, depending on the number of lags used (the default is six).

Two models, OLS and VAR, have buttons associated with them.

The OLS **Correction** button is available when you finish **Step 3.** Click the OLS button on the Statistical Details tab, view the Details Graph tab for OLS, then return to the Statistical Details tab. This is required so you can review the predicted values on the Details Graph to see any correctable anomalies. Then use the OLS Correction button to correct and review the data series and projected values. A Correction Variable will be added on the Statistical Details tab. You can go back to the Details Graph to view the correction on the graph.

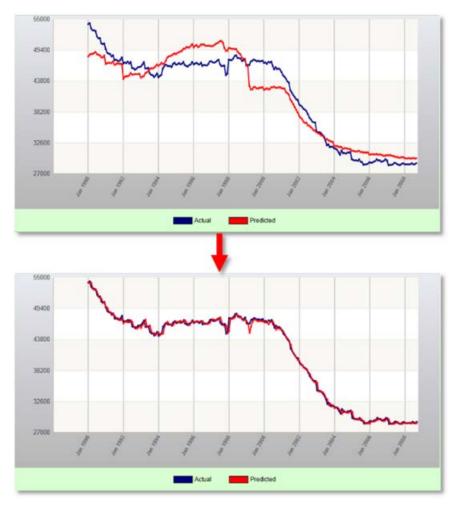


Figure 3: Before (top) and after (bottom) OLS Correction

The **Show FStats** button becomes available when you click the **VAR** button. The F-Statistics window (see Figure 4) displays variable names, <u>F-Statistics</u>, and F-Probabilities for the variables chosen in the Leading Index module.

| F-Statistics                     |             |               | x        |
|----------------------------------|-------------|---------------|----------|
| Variable Name                    | F Statistic | F Probability |          |
| Total All Industries             | 42.7214     | 0.0000        | ^        |
| Building Permits - New Housing   | 0.9105      | 0.4885        |          |
| Average Weekly Initial UI Claims | 1.1677      | 0.3253        |          |
| Total Non-Farm Employment        | 2.6322      | 0.0179        |          |
| Light Vehicle Sales              | 0.4977      | 0.8096        |          |
| NAPM New Orders                  | 3.9622      | 0.0009        |          |
|                                  | ок          |               | <b>~</b> |

Figure 4: F-Statistics

## **Related Content**

- Project Single Region
- Results Graph tab
- Details Graph tab
- User Defined Models tab

## **Details Graph Tab**

The **Details Graph tab** displays the actual series and the predicted values for the Projections Process step selected, when the **Predictions** radio button is selected. The Details Graph populates only after completing the details (on the Statistical Details tab) for a model; otherwise it will only display an empty series.

## **Screen Controls**

- Predictions radio button
- Residuals radio button
- **Display date** spinners
  - o Max button



Figure 1: Details Graph with Predictions displayed

Another view option is available by selecting the <u>Residuals</u> radio button. This displays the differences between the predictions and the <u>actual values</u> for the selected industry.

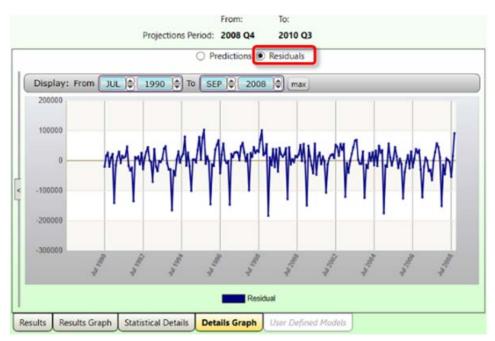


Figure 2: Details Graph displaying Residuals

<u>Manipulate the Display date spinners</u> to display information for a specific time period. Or, you can <u>select chart dates with the mouse</u> to display data from the selected time frame only.

## **Related Content**

- Project Single Region
- Results Graph tab
- Statistical Details tab
- User Defined Models tab

## **User Defined Models Tab**

The OLS, VAR, and BVAR models have an option to use variables defined by the user. Use this option to select the variables to use in the projection. After selecting the user-defined variables, proceed with the Projection Process steps. These variables can be from the last of national, state, or regional variables, and/or the list of industries with employment.

Selecting one of the User-defined models options from the drop-down menus in the Models control group will automatically display the User Defined Models tab, and display the variable options. These variables come from the list of imported variables or industries in the system. The User Defined Models tab displays four list boxes in a quadrant. Two are for variable and industry lists, and two are for selecting variables and industries.

Select one of three model types: OLS, VAR, or BVAR. The model type selected is the model used for those variables. The right side of the quadrant, either Variable or Industry, is the final list for each type.

## **Screen Controls**

- OLS radio button
- VAR radio button
- **BVAR** radio button
- Move Right and Left buttons
- Add... Index button add the selected leading index variables to the Selected Variables table.
- Leading Index Variables (pie chart) button view the list of selected leading index variables.
- Add... Related button add the list of related industries to the Selected Industries table.
- **Related Industries (building)** button view the list of industries related to the initially selected industry (if applicable).

| elect an Area:   |   | ct Industry:                              |                 |              |                     | 2                           |
|------------------|---|---|-----------------|--------------|---------------------|-----------------------------|
| Freedonia        | ~ (Sa   | ved) 000000 - Total All Inc               | lustries        |              | w                   | No Related Industries Assig |
| itart Quarter:   |   |   | From:           | To:          |                     |                             |
| 1990 🗢 Q1 🖨      |   | Projections                               | Period: 2006 Q4 | 2008         | B Q3                |                             |
| Adels            |   |   | 9.010           | 0.000        | 0 8008              |                             |
| Trend            |   |   | OLS             | O VAR        | 0.000               |                             |
| Smoothing Y      | Variable List   |   |                 |              | Selected Variables  |                             |
| OLS              |   | Hours in Manufacturing                    | ^               | >            |                     |                             |
| User-defined *   | Average Weekly  |   |                 | <            |                     |                             |
| ARMA             | Building Permits<br>Building Permits                  |   |                 | <<           |                     |                             |
| ARMA(0,2)        | Building Permits                                      | -   |                 |              |                     |                             |
| AIMIA(0,2/       | Building Permits                                      |   |                 | Add<br>Index |                     |                             |
| VAR 6            | Building Permits                                      | Total                                     |                 |              |                     |                             |
| User-defined ~   | Composite Inde  | - 10 Leading Indicators                   | -               |              |                     |                             |
| BVAR 6           | Industry List   |   |                 |              | Selected Industries |                             |
| User-defined ~   | 000000 - Total A                                      | II Industries                             | ^               | >            |                     |                             |
|                  | 211000 - Oil and                                      | Gas Extraction                            |                 |              |                     |                             |
| Tournament       | 221000 - Utilitie                                     |   |                 | <            |                     |                             |
| Save Projections |   | action of Buildings                       |                 | <<           |                     |                             |
| Mix ~ Save       | - Million 2012 10 10 10 10 10 10 10 10 10 10 10 10 10 | and Civil Engineering Cons                | struction       | Add          |                     |                             |
|                  |   | ty Trade Contractors                      |                 | Related      |                     |                             |
|                  | 311000 - Food M                                       | lanufacturing<br>ge and Tobacco Product N | anufacturing.   | 13           |                     |                             |
|                  | 312000 - Bevera                                       | ge and tobacco Product IV                 | anutacturing v  | Caller .     |                     |                             |
|                  | Results Results                                       | Graph Statistical Detail                  | s Details Graph | User De      | fined Models        |                             |
|                  | Projections Pro                                       | ess                                       |                 |              |                     |                             |

Figure 1: User Defined Models tab

#### **Define Variables**

- 1. Select one of the model type radio buttons to be used for the variables.
- OLS
- VAR
- BVAR
- 2. In the Variable or Industry List, select a variable or industry.

3. Populate the lists by clicking the right arrow to add the selected **Variable/Industry** to the **Selected Variables/Industries** table.

- To remove one **Variable/Industry** from the Selected list, select the Variable/Industry and click the left arrow.
- To remove all **Variables/Industries** from the Selected list, click the double left arrow.
- To view the variables that were selected in the <u>Leading Index</u> module, click the pie chart button.
- To add all leading index variables, click the **Add... Index** button.
- To view all related industries, click the building button.

#### **Projections Suite**

• To add all related industries (if applicable), click **Add... Related**. To create or remove related industries, reference the <u>Manage Related Industries</u> module.

| Select Industry:   |  |
|--|--|
|  |  |
|  |  |
| nelace industries  |  |
| From: To:  |  |
| Projections Period: 2006 Q4 2008 Q3  |  |
|  |  |
| OLS VAR 🖲 BVAR   |  |
| Variable List Selected Variables   |  |
| Average Weekly Hours in Manufacturing Average Weekly Hours in                              | Manufacturing                                |
| Average Weekly Initial UI Claims Building Permits - New H                                  |  |
|  |  |
| Building Permits - New Housing Money Supply (M2)   |  |
| Building Permits 1 unit 🛛 💜 NAPM New Orders  |  |
| Building Permits 5 units or more   |  |
| Building Permits Total   | dex variables to this list.                  |
| Composite Index - 10 Leading Indicators  |  |
| Consumer Expectations View a list of the leading in  | idex variables.                              |
| Continued Claims   |  |
| Industry List Selected Industries  |  |
| 000000 - Total All Industries A 323000 - Printing and Re                                   | lated Support Acti                           |
| 211000 - Oil and Gas Extraction III III IIII IIII IIIII IIIII IIIIIIII                     |  |
| 236000 - Construction of Buildings 453000 - Miscellaneous S                                | Store Retailers                              |
| 237000 - Heavy and Civil Engineering Construction 511100 - Newspaper, Per                  | riodical, Book, and                          |
| 238000 - Specialty Trade Contractors   |  |
| 311000 - Food Manufacturing  |  |
| 312000 - Beverage and Tobacco Product Manufacturing Related in Copy and the related in the | lustries for the currently selected industri |
| 313000 - Textile Mills   |  |
| 314000 - Textile Product Mills View a list of the related in                               | dustries for the currently selected indust   |
| 315000 - Apparel Manufacturing   |  |
|  |  |
| Results Results Graph Statistical Details Details Graph User Defined Models                |  |
| Periodications Persons   |  |
| Projections Process  |  |
| Step 1 Step 2 Step 3   |  |

Figure 2: User Defined Models tab

The selected variables and industries are automatically saved for the model type chosen (OLS, VAR, or BVAR).

4. Run the Projections Process steps.

5. View the projected data from the user-defined models by clicking the available tabs in the module.

#### **Related Content**

- Project Single Region
- Results Graph tab
- Statistical Details tab
- Details Graph tab

# **Project Multiple Regions**

Use the **Project Multiple Regions** module to streamline development of Short Term Industry Projections for multiple sub-state areas. This screen is a quick, alternative way to process sub-state area industry projections using specific models.

To use this module, the sub-state data series must be mutually exclusive and comprehensive. After statewide (aggregate area) projections are calculated, the sub-state areas plus the Balance of Area must sum to statewide totals. There can be no overlap on sub-state areas. Sub-state areas can be any area type, but in each projection process they *must be* mutually exclusive and comprehensive.

Area information should be setup and all employment data for all areas to be included should be imported, reviewed, and analyzed. If a balance of area needs to be created, that task should be complete. The Project Multiple Regions module helps identifying problems, but the initial data review should already be complete.

## **Screen Controls**

- Select an Area Group drop-down menu
- **Analyze** button Analyzes area, employment, and projections information to help in the project multiple regions module.
- **Calculate** button This button calculates any industries listed with a check on the initial processing tab.
- **Load** button After processing projections, this button will present all projections information from the previously calculated values.
- Load from summary button
- Initial Processing tab Displays information about areas and industries.
  - Select all button
  - **Deselect all** button
- **Industry View** tab Displays projections information after the calculations are complete.
  - o Industry selector
  - o Date spinners
- Area View tab Displays projections information after calculations have been done to be viewed by sectors within an area.

## **Projections Suite**

| / Short Term Long Term   | Occupational             | Report Manager          | Local Review          | Getting Started | Settings            | Exit                    |
|--------------------------|--------------------------|-------------------------|-----------------------|-----------------|---------------------|-------------------------|
|                          | Project Multiple Regions | (ST)                    |                       |                 |                     | <b>↓</b> <sup>↓</sup> > |
| Short Term Projections   | a 🌒 🕄 🚦                  | Ŧ                       |                       |                 |                     |                         |
| Leading Index            | Select an Area Group:    | Freedonia WIAs          |                       |                 |                     | ÷                       |
| Project Single Region    |                          |                         |                       |                 | Analyze Cal         | culate Load             |
| Project Multiple Regions | Initial Processing       | Industry View Area View | 7                     |                 |                     |                         |
| View Projections         | Area                     | Indu                    | stries With Employmen | t Industri      | es With Projections |                         |
| Rollup Projections       |                          |                         |                       |                 |                     |                         |
|                          |                          |                         |                       |                 |                     |                         |
|                          |                          |                         |                       |                 |                     |                         |
|                          |                          |                         |                       |                 |                     |                         |
|                          |                          |                         |                       |                 |                     |                         |
| ation "                  |                          |                         |                       |                 |                     |                         |

Figure 1: Project Multiple Regions module

Warning: All employment series must have clean data; no drastic increases/decreases (outliers, NAICS change issues, etc.). Make sure the series is correct before starting.

#### **Develop Projections for Multiple Sub-state Areas**

#### **Initial Processing Tab**

1. **Select an Area Group** from the drop-down menu. The listed areas are defined under the Data category, <u>Manage Areas</u> module. Once an Area Group is selected, the **Analyze** button will be enabled.

2. Click the **Analyze** button. The data processes and displays for the selected Area Group.

The upper portion of the module lists the areas included in the Area Group. Each area displays the number of industries with employment and projections, to help the analyst know totals for processing. Click the **Analyze** button as many times as needed. Ideally, the **Industries with Employment** count should be the same. **Industries with Projections** will update as they are completed in the <u>Project Single Region</u> module. The Industries with Projections column contains zeros for the sub-state areas until you complete industry projections.

The **Load** button will load any values that have previously been calculated in the Project Multiple Regions module and display them for analysis. Pressing the Load button will automatically open the **Industry View** tab.

Tou can close the Project Multiple Regions and the Projections Suite, then open the Projections Suite and the Project Multiple Regions module again, and click the **Load** button to reload the data and pick up where you left off.

| ect an Area   | Group: Freedonia W                                | /IAs   |   |   |  |                                      |    |
|---------------|---|--|---|---|--|--------------------------------------|----|
| nitial Proces | ssing Industry View                               | Area View  |   |   | Analyze                                | Calculate                            | ad |
| Area          | any musey view                                    | Industries With Employmen  | it Indu                                 | stries With Projections                 |  |                                      | _  |
| Freedon       | ia  |  | 114                                     |   | 4                                      |                                      |    |
| Freedon       | ia Balance of State Wi                            | A  | 114                                     |   | 0                                      |                                      |    |
| Freedon       | iia WIA 2   |  | 114                                     |   | 0                                      |                                      |    |
| Freedon       | nia WIA 3   |  | 116                                     |   | 0                                      |                                      |    |
| Freedon       | aia WIA 4   |  | 114                                     |   | 0                                      |                                      |    |
| Freedon       | nia WIA 5   |  | 114                                     |   | 0                                      |                                      |    |
| Freedon       | iia WIA 6   |  | 114                                     |   | 0                                      |                                      |    |
| Select a      | II Deselect all                                   | The list below contains industri<br>already exist will be analyzed.<br>industries. Click Analyze to re | Click Select All to pick al             |   |  |                                      |    |
| Calculate     | Industry  |  | Last value missing in one or more areas | Last value zero in one<br>or more areas | Model results<br>previously calculated | Final projection<br>previously saved |    |
| -             | 236000 - Construct                                | ion of Buildings   |   |   |  |                                      |    |
|               | 237000 - Heavy and Civil Engineering Construction |  |   |   |  |                                      |    |
| 4             |   |  |   |   |  |                                      |    |

Figure 2: Data for Freedonia WIAs Area Group

The lower portion of the module contains a list of industries projected in the parent industry. The industry is ready to be calculated if the check box next to the **Industry** title is checked. The checked industries are eligible to calculate for substate areas.

If the last value is missing in the historical series or the last value is zero in one or more areas, the check boxes under those columns are checked and the industry is unchecked to prevent processing. The errors should be resolved before continuing. If the industry was calculated previously, or saved, the preliminary projections check box or the final projection check box is checked to inform you in case you do not want to overwrite the projected values.

#### **Calculate for Sub-state Areas**

1. Click the **Select All** button to select all of the listed industries for projections processing.

2. Click the **Deselect All** button to deselect all of the listed industries for projections processing.

3. Click an empty selection check box next to an industry to select it for projections processing.

4. Click a checked selection box next to an industry to deselect it from projections processing.

5. Once you have made your selections, click the **Calculate** button. You will be prompted to confirm the calculations. Click **Yes** to continue, click **No** to cancel.

6. By selecting **Yes**, projections will be calculated. You will automatically be taken to the **Industry View** tab and the **Area View** tab will become available.

## **Related Content**

- Industry View tab
- <u>Area View tab</u>

## **Industry View Tab**

After calculating the industry information for the selected Area Group, the **Industry View** tab displays.

The calculation process in <u>Project Multiple Regions</u> projects the eight quarterly values for the two-year period for every area and industry and displays them on the list.

## **Screen Controls**

- Select an Industry drop-down menu
- Select a Quarter data spinner
- Select data type control group
  - o Level radio button
  - o Share radio button
  - o Growth radio button
- Select control group
  - Unforced radio button
  - Forced radio button
- Save Results control group
  - o Preliminary button
  - Final button

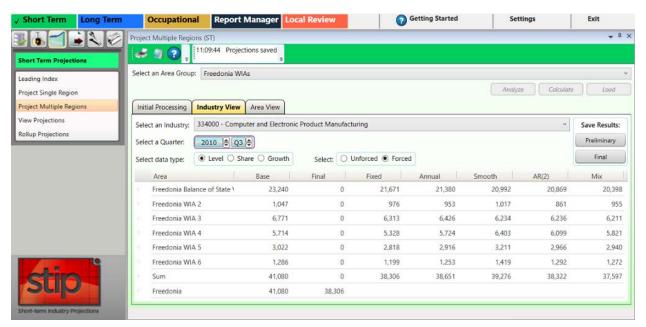


Figure 1: Industry View tab

## View Industry Information

1. Select an Industry from the drop-down menu.

2. **Select a Quarter** using the date spinner. The projection's final year and quarter are displayed by default.

- 3. Select the data type you want to view. The options are:
- Employment Level (Level is the only option available for moving and editing values).
- Percent **Share** for the area. Share converts each area's portion of the sum to a percentage. The shares for each area will sum to 100%.
- Compound **Growth** rate for the two-year period.
- 4. Select **Unforced** or **Forced**.
- **Unforced** is the default from original processing.
- Forced forces the Sum to equal the state or parent total in the Final column. Do not use the Forced option until the initial analysis by Level is complete.

Information for five models displays in the Industry View table.

- **Fixed** values represent the share of state employment found in the listed area. Fixed is based on the last actual employment value for the selected industry. This column compares <u>actual values</u> with projected shares of the other columns of data.
- **Annual** values represent projected shares of employment for the listed area based on the average share over the last 12 months of data.
- **Smoothing** values represent projected shares of employment for the listed area based on calculations using the smoothing trend model.
- **AR2** values represent projected shares of employment for the listed area based on shares calculated using the ARMA 2.0 model.
- **Mix** values represent the share of state employment for the listed area based on a performance weighted mix model of the three preceding models (annual, smoothing, and AR2).

## Enter and Save Final Values

The **Final** column contains values selected by moving the level from the other columns and will be the final saved values for the industry.

- 1. **Right click** in a model's column. A context menu will be displayed.
- 2. Select Move Cell or Move Column from the menu.
- Selecting Move Cell moves only that model's cell value to the Final column.
- Selecting Move Column moves all values in that model to the Final column.

3. To edit a value in the **Final** column, **double-click** the cell, edit the value, and press **Enter**.

4. In the **Save Results** control group, select a button to save results.

- Preliminary click to save the information for review.
- **Final** click to save the data after all analysis is complete. Selecting Final saves the projected values for the selected industry across all areas in the group.

The **Sum** and **State** or **Parent Area** (Freedonia, in Figure 1) rows help analyze how close the sum of all the sub-state areas compares to the statewide or parent area. Select the **Forced** view to force the final values to match the total of the parent area, based on their percentage share. When forced, the sum will match the total of the parent area, or very close (because of rounding).

#### **Related Content**

- Project Multiple Regions
- <u>Area View</u>

# Area View Tab

The **Area View** tab contains projected information for industries within a selected area and sector by quarter. You can view all sectors together by selecting **Total All Sectors**, or you can choose a particular sector which will list the individual industries for that sector.

This is useful to analyze data from an alternative view or for viewing Industries by area and sector. You can also view by **Level** or by **Growth** and change the active quarter. Saving of values in this screen is not possible; its only purpose is analysis.

#### **Screen Controls**

- Select an Area drop-down menu
- Select a Sector drop-down menu
- Select quarter date spinner
- Level radio button
- **Growth** radio button

| Sele | ct an Area Group: Freedonia WIAs   |  |                  |  |  |  |  |   |
|------|--|--|------------------|--|--|--|--|---|
|      |  |  |                  |  |  | Analyze  | Calculate                                      | Load  |
| Ini  | tial Processing Industry View Area View  |  |                  |  |  |  |  |   |
| Sel  | ect an Area: Freedonia Balance of State WIA  |  |                  |  |  |  |  | 0   |
| Sel  | ect a Sector: 000000 - Total All Sectors   |  |                  |  |  |  |  |   |
| Sel  | ect quarter: 2010 Q3 D Level O Growt   | h  |                  |  |  |  |  |   |
|      | Industry   | Base   | Final            | Fixed  | Annual   | Smooth   | AR(2)  | Mix   |
|      | Industry<br>210000 - Mining  | Base 9,196                                     | Final 0          | Fixed 8,768                                    | Annual<br>8,747                                | Smooth<br>9,460                                | AR(2)<br>8,541                                 |   |
|      |  |  |                  |  |  |  |  | 8,7   |
|      | 210000 - Mining  | 9,196  | 0                | 8,768  | 8,747  | 9,460  | 8,541  | 8,7<br>16,7   |
|      | 210000 - Mining<br>220000 - Utilities  | 9,196<br>17,262                                | 0                | 8,768<br>17,022                                | 8,747<br>16,886                                | 9,460<br>17,223                                | 8,541<br>16,349                                | 8,7<br>16,7<br>169,7  |
|      | 210000 - Mining<br>220000 - Utilities<br>230000 - Construction   | 9,196<br>17,262<br>175,546                     | 0<br>0<br>0      | 8,768<br>17,022<br>170,192                     | 8,747<br>16,886<br>169,379                     | 9,460<br>17,223<br>171,281                     | 8,541<br>16,349<br>172,207                     | 8,7<br>16,7<br>169,7<br>62,7                                      |
|      | 210000 - Mining<br>220000 - Utilities<br>230000 - Construction<br>310000 - Manufacturing                         | 9,196<br>17,262<br>175,546<br>64,638           | 0<br>0<br>0<br>0 | 8,768<br>17,022<br>170,192<br>63,719           | 8,747<br>16,886<br>169,379<br>63,555           | 9,460<br>17,223<br>171,281<br>61,648           | 8,541<br>16,349<br>172,207<br>62,732           | 8,7<br>16,7<br>169,7<br>62,7<br>29,8                              |
|      | 210000 - Mining<br>220000 - Utilities<br>230000 - Construction<br>310000 - Manufacturing<br>510000 - Information | 9,196<br>17,262<br>175,546<br>64,638<br>30,296 | 0<br>0<br>0<br>0 | 8,768<br>17,022<br>170,192<br>63,719<br>31,027 | 8,747<br>16,886<br>169,379<br>63,555<br>30,877 | 9,460<br>17,223<br>171,281<br>61,648<br>29,456 | 8,541<br>16,349<br>172,207<br>62,732<br>29,916 | Mix<br>8,73<br>16,73<br>62,73<br>62,73<br>29,84<br>42,44<br>52,75 |



#### **View Projected Information**

- 1. Select an Area from the drop-down menu.
- 2. Select a Sector from the drop-down menu. Select Total All Sectors to view all sectors together.

3. Select a time frame with the **Select quarter** date spinner.

4. Click the desired **Level** or **Growth** radio button. With each choice, the data updates to reflect the criteria.

- Employment Level
- Compound Growth rate for the two-year period

#### **Related Content**

- Project Multiple Regions
- Industry View

## **View Projections**

The **View Projections** module allows viewing of completed industry projections for the selected area and industry. The purpose of this module is to create a graphical representation of the historical industry series along with the final projected values (which are quarterly values). Once the projections are complete, this module helps you to analyze the projections and allows you to print reports for selected industries.

## **Screen Controls**

•

- Select Area drop-down menu
- Select Industry drop-down menu
- Level radio button
- % Growth radio button
  - Display date spinner
    - o Max button



Figure 1: View Projections module

## **View Projections**

- 1. Select an area from the drop-down menu.
- 2. Select an industry.

3. Click either the **Level** or the **% Growth** radio button. The Annual Average Projected Growth displays next to the radio buttons.

4. Select a time frame using the **Display date** spinners. Entering time values focuses the graph on the selected date range to evaluate the data points. An alternative way to zoom in on graph values is to <u>select chart dates with the mouse</u>.

• Click the **Max** button to view the maximum possible time frame.

The graph will display the historical series (represented by the blue line), as well as the projected values (represented by the red line). The data grid will display the quarterly values for both the historical and projected values. Only the last (latest) projected value is able to be edited. The value can only be edited while the **Level** radio button is selected.

Scrolling the grid activates a data popup. The popup (see Figure 2) will display a specific month and year. When the desired date displays, release the mouse button and the selected data will appear at the top of the grid. Alternatively, you can click on a value in the grid and move up and down with the keyboard's arrow keys.

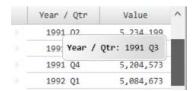


Figure 2: Date pop-up

If the historical series is not present, only the projected values will display.

#### **Export a Report**

After processing, you can use the **Export** icon on the Active Module Toolbar to export a report. A View Projections Export window will be displayed with the following options:

- Export Selected Industry
- Export Industries in Sector
- Export All Industries

Make your selection by clicking the associated radio button, then click **OK**. Select a location and name for the file, then click **Save**.

#### Print a Report

1. Click the **Print** icon to generate a report for the selected industry and open the Print Preview window:

## **Projections Suite**



Figure 3: Short-Term Projections Report by Level

2. Click the **Print** button in the Print Preview window to print the report.

# **Rollup Projections**

The **Rollup Projections** module enables consolidation of all children of the selected parent industry. This creates sector and total area projections based on detailed industry projections.

To rollup projections by sector, and therefore total, all detailed industries in each sector should be completed for the area. If they are not completed, sector projected values and total values may not sum to the values expected when viewing projections or reviewing final reports.

Use the Rollup Selected Sector option to consolidate the sectors selected to their parent industry. Use the Rollup Historical Series option to add historical data to a sector. Rolling up the historical series ensures that a sector which may not contain data will have the historical series data, in addition to the projected data. It is not required to add the historical series to the sectors. However, it does help when viewing projections for the sectors.

#### **Screen Controls**

- Select an Area drop-down menu
- Select a Sector drop-down menu
- Rollup All Sectors button
- Rollup Selected Sector button
- Rollup Historical Series check box

| Short Term Long Term   | Occupati           | onal Report Manager           | Local Review | etting Started | Settings                 | Exit |
|------------------------|--------------------|-------------------------------|--------------|----------------|--------------------------|------|
|                        | Rollup Projections | (ST)                          |              |                |                          | ¥ [  |
| hort Term Projections  |                    |                               |              |                |                          |      |
| eading Index           | Select an Area:    | Freedonia                     |              | ÷ [            | Rollup All Sectors       |      |
| oject Single Region    | Select a Sector:   | 000000 - Total All Industries |              | ٠ [            | Rollup Selected Sector   |      |
| oject Multiple Regions |                    |                               |              |                | Rollup Historical Series |      |
| ew Projections         | 210000 - M         | ining                         |              |                |                          |      |
| Ilup Projections       |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
|                        |                    |                               |              |                |                          |      |
| stin                   |                    |                               |              |                |                          |      |
| stip                   |                    |                               |              |                |                          |      |

Figure 1: Rollup Projections module

#### **Rollup an Industry**

- 1. Select an Area from the drop-down menu.
- 2. Select a Sector. The industries to be included in the rollup are displayed.

The Rollup Selected Sector button will be unavailable if projections are not complete for the more detailed industries under it.

| elect an Area:  | Freedonia                          | Rollup All Sectors       |  |
|-----------------|------------------------------------|--------------------------|--|
| elect a Sector: | 230000 - Construction              | Rollup Selected Sector   |  |
|                 |                                    | Rollup Historical Series |  |
| ✓ 236000 - Co   | onstruction of Buildings           |                          |  |
| ✓ 237000 - He   | eavy and Civil Engineering Constru | iction                   |  |
| 🖌 238000 - Sp   | pecialty Trade Contractors         |                          |  |

Figure 2: Industries 236000, 237000, and 238000 will be rolled-up to the parent sector, 230000

- 3. Click the **Rollup Selected Sector** button. A dialog box will be displayed.
- 4. Click **Yes** to overwrite, click **No** to cancel the rollup.

#### **Rollup All Sectors**

The **Rollup All Sectors** button allows the consolidating of all sectors for the selected area into their parent industry.

1. Click the **Rollup All Sectors** button. A dialog box will be displayed.

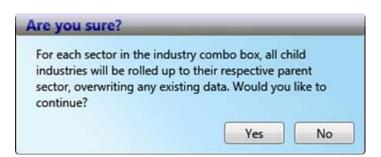


Figure 3: Confirmation dialog box

2. Click the **Yes** button. After completing the rollup, the **Rollup Projections** module will be displayed again.

#### **Rollup Historical Series Check Box**

The **Rollup Historical Series** check box performs an aggregation (that overwrites any existing historical series). Rolling up the historical series ensures a sector, which may not contain that data will have that data in addition to the projected data. Otherwise, the sector may contain only projected data. To **Rollup Historical Series** for a **Sector**:

1. Click the Rollup Historical Series check box.

2. Click either the **Rollup All Sectors** button or the **Rollup Selected Sector** button, depending on the data being rolled up. Clicking the **Rollup All Sectors** button displays a confirmation dialog box.

3. Click **Yes** to continue the rollup. Click **No** to stop the rollup. After selecting **Yes** to **Rollup All Sectors**, or after clicking the **Rollup Selected Sector** button, the **Rollup complete** dialog box will be displayed.

4. Click OK.

# **Short Term Output Menu Items**

### **Short Term Output Introduction**

The menu items in the **Short Term Output** group menu allow creation of reports or exporting of data from the Short Term Projections application.



Figure 1: Short Term Output group menu

The Short Term Output group menu contains the following selections:

- <u>Confidentiality</u>
- ICT Export
- Export Historical Series
- Export Variable Series
- <u>Reports</u>
- Validate Data
- Export Industry Projections

# Confidentiality

Use the **Confidentiality** module to flag industries as confidential. This helps prevent releasing industry data to the public where data could potentially identify employers or their information.

The Confidentiality module is available in Short Term and Long Term Projections. Occupational Projections also has a <u>Confidentiality</u> module, but uses different settings.

#### **Screen Controls**

- Select an Area drop-down menu
- Confidential check boxes

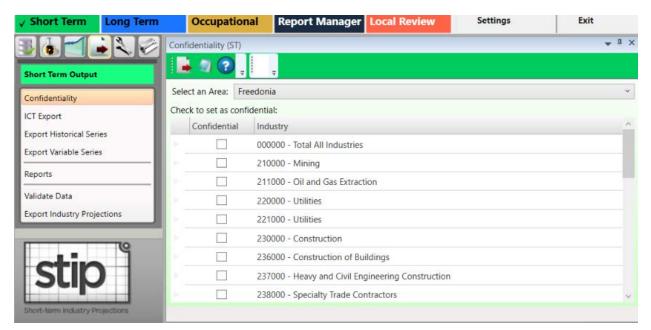


Figure 1: Confidentiality module

#### Mark an Industry as Confidential

1. **Select an Area** from the drop-down menu. The industries with completed projections within the selected area will display.

2. Check the confidentiality box next to each industry you want to identify as confidential. Or, right click the check box or the industry and select the **Toggle Confidentiality** button. Clicking the Toggle Confidentiality button will change the current setting to the opposite setting.

The Industries with selected check boxes are treated as confidential. The Industry Projections software does not directly deal with confidentiality, but the checked industry flags carry forward into the ICT records in the Occupational Projections and Report Manager applications.

#### **Create a Report of Confidential Industries**

1. Click the **Export** button from the Active Module Toolbar. A **Save As** dialog box will be displayed.

- 2. Select a save location and type a name for the report.
- 3. Click Save.

The data exports into an Excel spreadsheet. The spreadsheet will contain the list of industries and display whether or not they're confidential.

|   | 1 | A               | В   |
|---|---|-----------------|---|
|   | 1 | confidentiality | industry  |
|   | 2 | FALSE           | 000000 - Total All Industries                     |
|   | 3 | FALSE           | 210000 - Mining                                   |
|   | 4 | FALSE           | 230000 - Construction                             |
| - | 5 | TRUE            | 236000 - Construction of Buildings                |
|   | 6 | FALSE           | 237000 - Heavy and Civil Engineering Construction |
| - | 7 | TRUE            | 238000 - Specialty Trade Contractors              |

Figure 2: Exported confidentiality report

Alternatively, click the **Print** button in the Active Module Toolbar to print a report of industries and their confidentiality.

# **ICT Export**

Use the **Industry Control Total (ICT) Export** module to export projected industries to the internal ICT table for use in the Occupational Projections application or to a file for use in other applications or reports.

The values exported to the spreadsheet and to the ICT file are the last actual quarterly employment value and the last quarterly projected value for each industry.

A Base Year is determined from the year of the last quarter, and the Projected Year is determined from the year of the last projected quarter. In Short Term Industry Projections, the <u>Short Term Round</u> setting determines these quarters. The same base year, or the same projected year value, is the value for all date quarters during the year. The only industries exported to the ICT table or to the spreadsheet file are the industries on the list. If the Selected Industries list needs modification, modify the list and export the industries again. Previously saved ICT projections for the area change to the new listed industries.

#### **Screen Controls**

- Select an Area drop-down menu
- Transfer ICT data to Occupational Projections check box
- Available Industries table
- Selected Industries table
- Move buttons

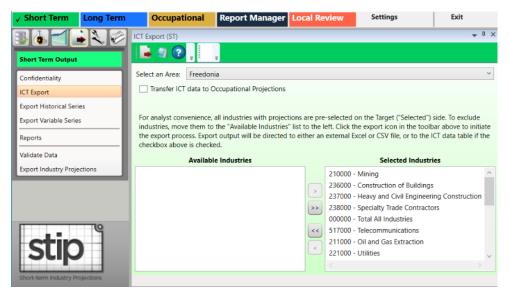


Figure 1: ICT Export module

#### **Utilize ICT Export**

1. **Select an Area** and a list of industries with projections will be displayed in the **Selected Industries** table. Industries that *should not* be exported should be moved to the **Available Industries** table. However, exporting all of the industries is usually typical.

2. To move industries into the **Available Industries** table (and exclude them from

exportation), select an industry and click the **Move left** sutton.

- Manipulate the additional **move** and **move all** buttons to move industries from the Selected Industries table to the Available Industries table, and vice versa.
- **Right-clicking** any industry opens a context menu which allows you to **Remove** or **Add Selected** (depending on which table you've right-clicked into), **Select All**, or **Unselect All** industries.

Multiple industries can be moved at a time. For help with selecting multiple industries, click <u>here</u>.

#### **Export Data to Occupational Projections**

1. To transfer ICT data to the Occupational Projections application, check the **Transfer ICT data to Occupational Projections** box prior to exporting the data.

2. When the list of selected industries is ready, click the **Export** button on the Active Module Toolbar.

3. A **Finished** message will display, letting you know the ICT data from the Selected Industry table was exported to the ICT table in Occupational Projections. Click **OK**.

#### **Export Data to a Spreadsheet**

- 1. Ensure the Transfer ICT data to Occupational Projection box is unchecked.
- 2. Click the **Export** button. A **Save As** window will display.
- 2. Select a location and type the name of the file to be exported.
- 3. Click Save.

#### **Related Content**

- Edit ICT
- Manage Rounds

# **Export Historical Series**

Use the **Export Historical Series** module to export industry historical data to a spreadsheet file.

#### **Screen Controls**

- Select an Area drop-down menu
- Select a date range spinners
  - o Max button
- Move buttons
- Available Industries table
- Selected Industries table

| ✓ Short Term           | Long Term | Occupational                                   | Report Manager                | Local Review | Settings       | Exit                    |
|------------------------|-----------|--|-------------------------------|--------------|----------------|-------------------------|
| 361                    |           | Export Historical Series                       | (ST)                          |              |                | <b>↓</b> <sup>1</sup> × |
| Short Term Output      |           | 📕 🦪 🕐 🚦  | <b>a</b>                      |              |                |                         |
| Confidentiality        |           | Select an area:                                | Freedonia                     |              |                | ~                       |
| ICT Export             |           | Select a date range:                           | From JAN 🖨 1990               | TO SEP       | 2008 🖨 max     |                         |
| Export Historical Seri | ies       | Avai   | able Industries               |              | Selected Indus | stries                  |
| Export Variable Serie  | s         | 000000 - Total All Inde                        | ustries                       | ^            |                |                         |
| Reports                |           | 210000 - Mining                                |                               |              |                |                         |
| Validate Data          |           | 211000 - Oil and Gas<br>220000 - Utilities     | Extraction                    |              |                |                         |
| Export Industry Proje  | ections   | 221000 - Utilities                             |                               | >>           |                |                         |
|                        | 9         | 230000 - Construction<br>236000 - Construction |                               | <<           |                |                         |
| stic                   |           |  | ivil Engineering Construction |              |                |                         |
| SUP                    |           | 238000 - Specialty Tra                         |                               |              |                |                         |
| Short-term Industry Pr | ojections | 310000 - Manufacturi                           | ng                            | ×            |                |                         |

Figure 1: The Export Historical Series module

#### **Export Historical Data**

- 1. Select an Area from the drop-down menu.
- 2. Select a date range using the spinners.

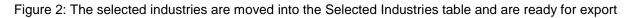
3. Select industries from the Available Industries table to export their historical time series data. Multiple industries can be moved at a time. For help with selecting multiple items, click <u>here</u>.

4. Click the **Add** button. The selected industries will be moved into the **Selected Industries** table.

#### **Projections Suite**

- Use the additional move and move all buttons to move industries from the Available Industries table to the Selected Industries table, and vice versa.
- Right-clicking any industry opens a context menu which allows you to **Remove** or **Add Selected** (depending on which table you've right-clicked into), **Select All**, or **Unselect All** industries.

| Export Historical Series (ST)                       |     |     | <b>→</b> ‡ ×  |
|---|-----|-----|---|
|   |     |     |   |
| Select an area: Freedonia                           |     |     | ۷   |
| Select a date range: From JAN + 1990 To             | SEP | P 🖨 | 2008 (max)  |
| Available Industries                                |     |     | Selected Industries                                       |
| 000000 - Total All Industries                       | ^   |     | 230000 - Construction                                     |
| 210000 - Mining                                     |     |     | 236000 - Construction of Buildings                        |
| 211000 - Oil and Gas Extraction                     | :   | >   | 237000 - Heavy and Civil Engineering Construction         |
| 220000 - Utilities                                  | 6   | >>  | 444000 - Building Material and Garden Equipment and Supp  |
| 221000 - Utilities                                  | 6   |     | 484000 - Truck Transportation                             |
| 238000 - Specialty Trade Contractors                | G   | <<  | 531000 - Real Estate                                      |
| 310000 - Manufacturing                              |     |     | 541300 - Architectural, Engineering, and Related Services |
| 311000 - Food Manufacturing                         |     | <   | 561700 - Services to Buildings and Dwellings              |
| 312000 - Beverage and Tobacco Product Manufacturing |     |     |   |
| 313000 - Textile Mills                              | ~   |     | < >>  |
|   |     |     |   |



5. When the list of selected industries is ready, click the **Export** button on the Active Module Toolbar. A **Save As** window will be displayed.

- 6. Select a location and type the name of the file to be exported.
- 7. Click the **Save** button.

### **Export Variable Series**

Use the **Export Variable Series** module to export historical variable data. This module creates importable spreadsheets containing variable time series data. Variable data from only one variable type (National, State, or Regional) can be exported at a time in the Short Term application.

#### **Screen Controls**

- Select a Variable Type drop-down menu
- Select a date range spinner
   Max button
- Available Variables table
- Selected Variables table
- Move buttons

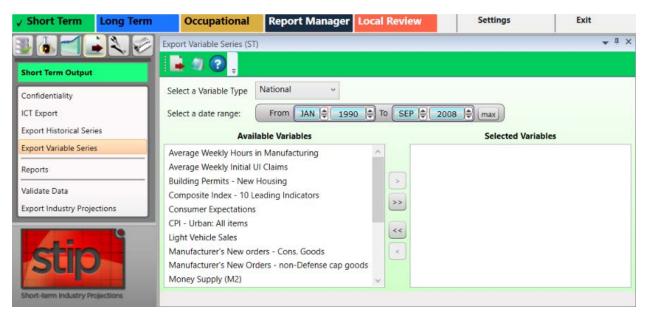


Figure 1: Export Variable Series module

#### **Export Variable Data**

- 1. Select a Variable Type from the drop-down menu.
- 2. Select a date range using the spinner controls.

Select variables from the Available Variables table and click the Move button. The variable will be moved to the Selected Variables table.

- Use the additional move and move all buttons to move variables from the Available Variables table to the Selected Variables table, and vice versa.
- Right-clicking any variable opens a context menu which allows you to **Remove** or **Add Selected** (depending on which table you've right-clicked into), **Select All**, or **Unselect All** variables.

4. Click the **Export** button on the Active Module Toolbar. A **Save As** dialog box will be displayed.

- 5. Enter a file name and select the destination to save the file.
- 6. Click Save.

#### **Related Content**

- Variable Directory
- Review Variables

### Reports

Use the **Reports** module to export projected industry employment data to a spreadsheet, preview projections in a report format, or print the report.

#### **Screen Controls**

- Select an Area drop-down menu
- Select a report drop-down menu
- View by Date check box/spinner

| ✓ Short Term Lor               | ng Term Occupat                     | onal      | Report Manager           | Local Review | Settings | Exit         |
|--------------------------------|-------------------------------------|-----------|--------------------------|--------------|----------|--------------|
|                                | Reports (ST)                        |           |                          |              |          | <u>≁</u> # × |
| Short Term Output              |                                     | 3         | Ŧ                        |              |          |              |
| Confidentiality                | Select an area:                     | Freed     | donia                    |              |          | Ŷ            |
| ICT Export                     | Select a report:                    | Proje     | ectionByIndustryReport   |              |          | ×            |
| Export Historical Series       | View by Dat                         | 200       | 08 - Q4 -                |              |          |              |
| Export Variable Series         | Select one or mo                    | re indust | tries:                   |              |          |              |
| Reports                        | 000000 - Total A                    | I Industr | ies                      |              |          | ^            |
| Validate Data                  | 210000 - Mining<br>211000 - Oil and | Gas Extr  | raction                  |              |          |              |
| Export Industry Projections    | s 220000 - Utilitie                 |           |                          |              |          |              |
|                                | 221000 - Utilitie                   |           |                          |              |          |              |
|                                | 230000 - Constr                     | iction    |                          |              |          |              |
|                                | 236000 - Constr                     | iction of | Buildings                |              |          |              |
|                                | 237000 - Heavy                      | and Civil | Engineering Construction |              |          |              |
| JUN                            | 238000 - Specia                     | ty Trade  | Contractors              |              |          |              |
|                                | 310000 - Manuf                      | cturing   |                          |              |          | ~            |
| Short-term Industry Projection | ins                                 |           |                          |              |          |              |

Figure 1: Reports module

#### **Create and Export a Report**

1. **Select an area** from the drop-down menu. The drop-down is populated with areas that contain projections.

2. **Select a report** from the drop-down menu. Reports contain eight quarters of projected data for each selected industry. Choices are:

- Projection By Industry
- Projection By Industry With Growth
- Quarterly Historical and Projections By Industry
- Quarterly Projected and Non Projected Industries

3. Click the **View by date** check box and manipulate the date spinner to select a specific quarter for the report.

4. **Select one or more industries** from the table. For assistance with selecting multiple industries, click <u>here</u>.

5. Click the **Export** button on the Active Module Toolbar. A **Save As** window will display.

- 6. Create a name and select a location for the file to be exported.
- 7. Click Save.

#### **Print a Report**

1. Select one or more industries to include in the report.

2. Click the **Print** icon on the Active Module Toolbar. The Print Preview window will display the generated report:

|        |                        | Area: Freedonia |         |                            |  |
|--------|------------------------|-----------------|---------|----------------------------|--|
|        | Industry               | Year /          | Quarter | Projected Employment Level |  |
| 210000 | Mining                 |                 | 2008 Q4 | 9,900                      |  |
|        |                        |                 | 2009 Q1 | 9,288                      |  |
|        |                        |                 | 2009 Q2 | 9,922                      |  |
|        |                        |                 | 2009 Q3 | 9,901                      |  |
|        |                        |                 | 2009 Q4 | 9,674                      |  |
|        |                        |                 | 2010 Q1 | 9,042                      |  |
|        |                        |                 | 2010 Q2 | 9,660                      |  |
|        |                        |                 | 2010 Q3 | 9,626                      |  |
| 211000 | Oil and Gas Extraction |                 | 2008 Q4 | 9,900                      |  |
|        |                        |                 | 2009 Q1 | 9,288                      |  |
|        |                        |                 | 2009 Q2 | 9,922                      |  |
|        |                        |                 | 2009 Q3 | 9,901                      |  |
|        |                        |                 | 2009 Q4 | 9,674                      |  |
|        |                        |                 | 2010 Q1 | 9,042                      |  |
|        |                        |                 | 2010 Q2 | 9,660                      |  |
|        |                        |                 | 2010 Q3 | 9,626                      |  |

#### Projection By Industry Report

Figure 2: Projection by Industry Report

3. Click the **Print** button in the Print Preview window to send the report to the printer.

# Validate Data

Use the **Validate Data** module to validate and extract reports on the disposition of your data.

The Validate Data module is available in both Short Term and Long Term applications. The Short Term application validates monthly data. The Long Term Validate Data module allows you to validate annual data, and data for the entire United States.

#### **Screen Controls**

- Select an Area drop-down menu
- Filter drop-down menu
- Validate button

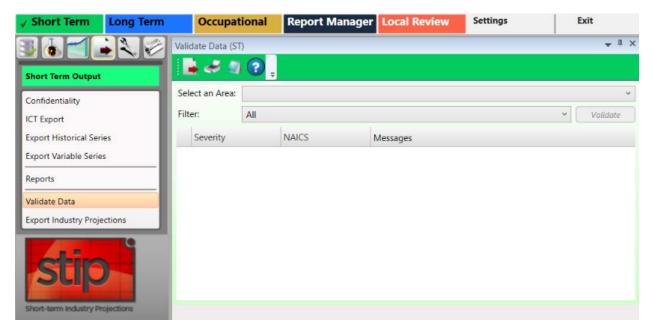


Figure 1: Validate Data module

#### Validate the Data

#### 1. Select an Area.

2. Click the **Validate** button. The validation data errors will be displayed for All filters.

#### **Projections Suite**

| Sele  | ect an Area | a: Freedonia                  |  |
|-------|-------------|-------------------------------|--|
| Filte | er:         | All                           | ~ Validate   |
|       | Severity    | NAICS                         | Messages   |
|       | Error       | 000000 - Total All Industries | Parent and child employment data do not equal for year 1990<br>and month 1. Parent monthly employment level: 5134461.<br>Child monthly employment level: 5438287 |
|       | Error       | 000000 - Total All Industries | Parent and child employment data do not equal for year 1990<br>and month 2. Parent monthly employment level: 5151574.<br>Child monthly employment level: 5456351 |
|       | Error       | 000000 - Total All Industries | Parent and child employment data do not equal for year 1990<br>and month 3. Parent monthly employment level: 5201193.<br>Child monthly employment level: 5512193 |

Figure 2: Non-valid data for Freedonia

- 3. Select a Filter from the drop-down menu. Filter options are:
  - All
  - Industry has Monthly Employment Data
  - Sum of Child Monthly Employment Equals Parent
  - Industry projection Equals Child Projections
  - Check for Missing Employment Data

After processing, you can the **Export** or **Print** options on the Active Module Toolbar to export or print the report. Use the **Notebook** to add any needed information.

# **Export Industry Projections**

The **Export Industry Projections** module allows the exporting of a specific area's industry projections to a spreadsheet file or directly into Report Manager.

The Export Industry Projections module is available in the Short Term and Long Term Projections applications.

#### **Screen Controls**

- Export Data to File Local Review Format radio button
- Export Data to File Projections Review radio button
- Transfer Data to Report Manager radio button
   Source Timeframe drop-down menu
- Source Area(s) drop-down menu

| ✓ Short Term                   | Long Term | Occupational              | Report Manager  | Local Review | Settings | Exit                    |
|--------------------------------|-----------|---------------------------|---|--------------|----------|-------------------------|
|                                | i 🔪 🧭 🔤   | oort Industry Projection  | s (ST)  |              |          | <b>▼</b> <sup>‡</sup> × |
| Short Term Output              |           | 🛓 🗐 🕐 📮                   | Ŧ   |              |          |                         |
| Confidentiality                |           |                           | export industry projection<br>r them directly to Report 1 |              |          |                         |
| ICT Export                     |           | ou would like to export   |   |              |          | a arange arange         |
| Export Historical Seri         | es C      | Export Data to File - I   | Local Review Format                                       |              |          |                         |
| Export Variable Serie          | s C       | ) Export Data to File - I | Projections Review  |              |          |                         |
| Reports                        |           | ) Transfer Data to Repo   | -   |              |          |                         |
| Validate Data                  |           |                           |   |              |          |                         |
| Export Industry Proje          | ctions    | Source Area(s):           |   |              | v        |                         |
| stip<br>short-term Industry Pr | ojections |                           |   |              |          |                         |

Figure 1: Export Industry Projections module

#### **Export Industry Projections**

- 1. Select a **Source Area(s)** from the drop-down menu.
- 2. Select one of the three radio buttons, depending on the type of export required.

### 1. Select the **Export Data to File - Local Review Format** or **Export Data to File - Projections Review** radio button.

2. Click the **Export** button on the Active Module Toolbar. A **Save As** dialog box will be displayed.

- 3. Enter a file name and select a location to save the file to.
- 4. Click Save.

Or

1. Select the Transfer Data to Report Manager radio button.

2. Select the **Source Area(s)** and **Source Timeframe** from the drop-down menus.

- 3. Click the **Export** button on the Active Module Toolbar.
- 4. Use the <u>Browse Data</u> menu selection in Report Manager to view the data.

# Short Term Compare Menu Items

### **Short Term Compare Introduction**

Use the **Short Term Compare** group menu to configure an Upload Area account, upload data, and create a geographical comparison.



Figure 1: Short Term Compare group menu

The Short Term Compare group menu contains the following selections:

- Upload Area Connection
- <u>Upload</u>
- Short Term Geographic Comparison

### **Upload Area Connection**

Use the **Upload Area Connection** module to configure an Upload Area account. Contact the Utah Projections Help Desk for help with setting up an Upload Area account. There should be only one registered analyst per state.

This module is available in the Short Term, Long Term, and Occupational Projections applications.

#### **Screen Controls**

- Service URL field
- Email field
- Password field
- Connect button

| ✓ Short Term                 | Long Term       | Occupationa                                | l Report Manager   | Local Review           | Settings  | Exit   |
|------------------------------|-----------------|--|--|------------------------|---|--|
| Short Term Compa             |                 | Staging Area Connect                       | tion   |                        |   | <b>↓</b> ↓ ×   |
| Upload Area Connec<br>Upload | ction           | This screen allows yo                      | Comparison Up<br>ou to configure the required s<br>oport Site email and password | ettings for connecting | and the second se | and the second s |
| Short Term Geograp           | vhic Comparison | Service URL: https:<br>Email:<br>Password: | //matrixservices.projectionsco   | entral.com/            |   |  |
|                              | rojections      |  | l  | Connect                |   |  |

Figure 1: Upload Area Connection module

#### Login to Geographic Comparison Upload Area Account

- 1. Enter your **Projections Support Site email address** in the **Email** field.
- 2. Enter your **Projections Support Site password** in the **Password** field.

3. Click **Connect**. A Finished dialog box will be displayed if the connection is successful.

4. Click **OK** to return to the **Upload Area Connection** module.

*r* If the connection is unsuccessful, the following message will be displayed:

Email / Password combination failed. It's possible your account has not yet been approved. Please check to make sure you entered eveything correctly. If you have any questions, you can contact Brett Judd at bdjudd@utah.gov

Figure 2: Connection failure dialog

5. Check your email address and password combination and try again. If multiple failures occur, contact the Utah Projections Help Desk for assistance.

#### **Related Content**

- Validation
- State Self Publish

# Upload

Use the **Upload** module to select the source for your industry comparison. This module is available in the Short Term and Long Term applications.

#### **Screen Controls**

- Projection Suite Data radio button
  - State drop-down menu
  - o Export To Upload Area radio button
  - Export To File radio button
  - o File field
  - o ... button
- Import File radio button
  - Select file to import field
  - o Browse button
  - o Detected File Type field
  - o Import button

| ✓ Short Term Long Term                  | Occupational            | Report Manager           | Local Review      | Exit                    |
|---|-------------------------|--------------------------|-------------------|-------------------------|
|   | Geograpic Comparison U  | pload                    |                   | <b>▼</b> <sup>I</sup> × |
| Short Term Compare                      | 📕 🚓 🖉 🕄 .               |                          |                   |                         |
| Upload Area Connection                  | Select the source of yo | our Industry Compare dat | a for validation. |                         |
| Upload                                  | Projection Suite D      | ata 🔿 Import File        |                   |                         |
| Short Term Geographic Comparison        | State:                  |                          |                   | ¥                       |
|   |                         |                          |                   |                         |
| Stop<br>Short-term Industry Projections |                         |                          |                   |                         |

Figure 1: Upload module

#### **Upload Industry Compare Data for Validation**

- 1. Select the source.
  - 1. Select Projection Suite Data.
  - 2. Select a **State**. The data process and a validation dialog displays.
  - 3. Select **Export To Upload Area** or **Export To File**. Export To Upload Area is not available if the validation fails.

4. If you selected **Export To Upload Area**, click **Send Compare Data**. A **Successfully Submitted all Projections** message displays.

5. Click **OK**.

Or

1. If you selected **Export To File**, select a **File** by clicking the ... button. A Save As dialog will be displayed.

- 2. Select a name and location for the file, then click **Save**.
- 3. Then, on the Active Module Toolbar, click **Export**.
- 4. Click Save.

Or

- 1. Select Import File.
- 2. Click **Browse** and select a file to import.
- 3. Click **Import**.

4. Select **Export To Upload Area** or **Export To File**. Export To Upload Area is not available if the validation fails.

5. If you selected **Export To Upload Area**, click **Send Compare Data**. A **Successfully Submitted all Projections** message displays.

6. Click **OK**.

# Short Term Geographic Comparison

Use the **Short Term Geographic Comparison** module to create comparisons. You can create comparisons for:

- Compare to States
- Region Compare
- Workforce Compare
- Services Compare
- Goods Compare

Data is stored in the Upload Area for all states which have submitted data. Short Term Geographic Comparison requires data from at least three states.

The Short Term Geographic Comparison module is available in the Short Term and Occupational Projections applications. It is important to make the distinction: the Short Term Geographic Comparison module compares *industry* data; the Short Term Geographic Comparison module in the Occupational Compare group menu utilizes *occupational* data.

If you do not have an Upload Area account, an error message displays. You are unable to make comparisons until you have the account set up. Reference the <u>Upload Area Connection</u> module for information on creating an account.

#### **Screen Controls**

- Select the base state drop-down menu
- Geographic Comparison button
- Compare to States radio button
  - Available States table
  - Selected States table
- Region Compare radio button
- Workforce Compare radio button
- Services Compare radio button
- Goods Compare radio button
- Available States screen
- Selected States screen
- Move buttons

| ✓ Short Term Long Term           | Occupational                                     | Report Manager   | Local Review                          | 🕜 Gettir              | ng Started         | Settings                   | Exit                       |
|----------------------------------|--|------------------|---------------------------------------|-----------------------|--------------------|----------------------------|----------------------------|
| 36420                            | Short Term Geographic C                          | omparison        |                                       |                       |                    |                            | <u>≁</u> ± ×               |
| Short Term Compare               | <b>       </b>                                   | ÷                |                                       |                       |                    |                            |                            |
| Upload Area Connection           |  |                  | t at least 3 states as the comp       | arison group and clic | k Geographic Compa | rison. States are listed v | vith the last upload date. |
| Short Term Geographic Comparison | Illinois - 2/28/2018                             | 9:33:50 AM       | ~                                     |                       |                    | Geo                        | graphic Comparison         |
|                                  | Ompare to States                                 | Region Compare   | <ul> <li>Workforce Compare</li> </ul> | O Services Com        | pare O Goods       | Compare                    |                            |
|                                  |  | Available States |                                       |                       | s                  | elected States             |                            |
|                                  | Arkansas - 3/7/2018 2:<br>Iowa - 2/19/2018 1:45: |                  | ^                                     |                       |                    |                            |                            |
|                                  | Maryland - 3/1/2018 1                            | 2:04:05 PM       |                                       | >>                    |                    |                            |                            |
|                                  | Missouri - 2/9/2018 10<br>Puerto Rico - 2/23/201 |                  |                                       | <<                    |                    |                            |                            |
| stip                             | South Dakota - 2/20/2<br>Texas - 3/5/2018 9:28:4 | 018 1:51:55 PM   |                                       | <                     |                    |                            |                            |
| Short-term Industry Projections  |  |                  |                                       |                       |                    |                            |                            |

Figure 1: Short Term Geographic Comparison module

To generate comparisons from the Short Term Geographic Comparison module, select the type of comparison using the radio buttons. Submitted data includes the state name and submittal date and time. The date and time is used to ensure the compared data is the latest, most updated data.

#### **Compare to States**

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.

2. Select the states from the **Available States** box and move them to the **Selected States** box. Click the state, then click the arrow button. Or, click the double arrow button to move all **Available States** to the **Selected States** box.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### **Region Compare**

1. Select the base State. The base state defaults to your state. You can select any state from the list as the base state for the comparison.

2. Select the Region for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### Workforce Compare

- 1. Select the base State.
- 2. Select the Workforce Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### Service Compare

- 1. Select the base State.
- 2. Select the Services Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### **Goods Compare**

- 1. Select the base State.
- 2. Select the Goods Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click **OK**.
- 5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### **Related Content**

Geographic Comparison File Format

# **Short Term Utilities Menu Items**

### **Short Term Utilities Introduction**

The menu items for **Short Term Utilities** group menu allow a variety of maintenance and administrative functions within Short Term Projections.

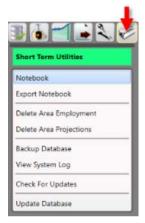


Figure 1: Short Term Utilities group menu

The Short Term Utilities group menu contains the following selections:

- <u>Notebook</u>
- Export Notebook
- Delete Area Employment
- Delete Area Projections
- Backup Database
- <u>View System Log</u>
- Check for Updates
- Update Database

### Notebook

Use the **Notebook** module to record user and statistical notes and attach them to areas and industries. The Notebook can be helpful during the analysis and projections process. It can also be used to keep historical records for industries, which can be helpful when state analysts leave and new analysts begin using the application. You can access the Notebook in all but a few Short Term Industry and Occupational Projections modules.

#### **Screen Controls**

- Area drop-down menu
- Industry drop-down menu
- Save button
- Reload button
- Delete All Notes button

#### **Record or Modify Notes**

1. Click the **Notebook** module from the group menu. The **Notebook screen** will be displayed in its own undocked window:

| Notebook            | x  |   |
|---------------------|--|---|
| i 📘 🍣               |  |   |
| Area                | Freedonia (000080) ~   |   |
| Industry            | 000000 - Total All Industries   Save Reload Delete All Notes | J |
| User Notes          |  |   |
|                     |  |   |
| Statistical No      | otes   |   |
| 7/17/2018 1         | 1:50 AM 000000 - Total All Industries                        |   |
| Round: Defa         | ult round Sep 2008   |   |
| Selected Mo<br>Tree | dels:<br>nd: Smoothing ~                                     |   |

Figure 1: Notebook module

2. Select an area to record/modify notes about, with the Area drop-down menu.

3. Select an industry to record/modify notes for, by clicking the **Industry** dropdown menu.

- 4. Type the notes for the selected area and time frame.
- 5. Click the Save button.

#### **Export Notes**

1. Click the **Export** button in the Active Module Toolbar. A **Save As** dialog box will be displayed.

- 2. Select a name and location for the notebook file to be exported to.
- 3. Click the **Save** button.

#### **Printing the Notes**

1. Click the **Print** button in the Active Module Toolbar. The **Print Preview dialog box** will be displayed. The **Print Preview dialog box** contains seven icons to assist with the printing/confirmation process. From left to right, they are the:

- **Print** <u>icon</u> used to send the notebook to the printer.
- Zoom In and Zoom Out cons are used to make the text larger and smaller.
- View at 100% [III] icon used to view the Notebook at 100% of its size.
- View at Page Width icon used to view the notebook so it fills the width of the page.
- View Whole Page icon used to view the entire Notebook page.
- View Two Pages icon used to view two pages of the Notebook at the same time.

2. Click the **Print** let icon after making all of the needed entries and adjustments. The Notebook data will print.

### **Export Notebook**

The **Export Notebook** module enables exportation of notebook data to a text file for a selected area/industry or all areas and industries.

#### **Screen Controls**

- All Notes for an Area check box
- Area drop-down menu
- All Notes for an Industry check box
- Industry drop-down menu
- All check box

| ✓ Short Term                                | Long Term  | Occupational            | Report Manager                                      | Local Review | Exit         |
|---|------------|-------------------------|---|--------------|--------------|
| Short Term Utilities                        |            | xport Notebook (ST)     | ÷   |              | <b>*</b> # × |
| Notebook<br>Export Notebook                 |            |                         | e export notebook inform<br>the Export button above |              | r making a   |
| Delete Area Employi<br>Delete Area Projecti |            | Area: Freedonia         | stry  | ~            |              |
| Backup Database<br>View System Log          |            | Industry: 000000 - Tota |   | v            |              |
| Check For Updates<br>Update Database        |            |                         |   |              |              |
| Short-term industry P                       | rejections |                         |   |              |              |

Figure 1: Export Notebook module

#### **Export Notebook Data**

- 1. Select one of the following:
- All Notes for an Area check box, then select the Area from the drop-down menu.
- All Notes for an Industry check box, then select the Industry from the dropdown menu.
- All check box.

2. Click the **Export** button on the Active Module Toolbar. The Notebook data for the area or industry will be exported.

### **Delete Area Employment**

The **Delete Area Employment** module enables deletion of all employment records for a selected area.

The Delete Area Employment module is available in the Short and Long Term Projections applications. The Short Term Delete Area Employment module deletes monthly data; the Long Term module deletes annual data.

#### **Screen Controls**

- Select an Area drop-down menu
- Delete all employment for area button

| ✓ Short Term                                | Long Term  | Occupational           | Report Manager Local Review    | Exit                    |
|---|------------|------------------------|--------------------------------|-------------------------|
| Short Term Utilities                        |            | elete Area Employment  | (TZ)                           | <b>+</b> <sup>‡</sup> × |
| Notebook<br>Export Notebook                 |            | elect an Area: Freedor |                                | ~                       |
| Delete Area Employ<br>Delete Area Projectio |            |                        | Delete all employment for area |                         |
| Backup Database<br>View System Log          |            |                        |                                |                         |
| Check For Updates<br>Update Database        |            |                        |                                |                         |
| Stort-term Industry P                       | rojections |                        |                                |                         |

Figure 1: Delete Area Employment module

#### **Delete Employment Records for a Specific Area**

#### 1. Select an Area.

2. Click the **Delete all employment for area** button. A **Delete area employment** dialog box will be displayed:

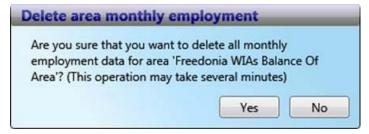


Figure 2: Verification of deletion of employment records

3. Click **Yes** to delete the records. Click **No** to keep the records.

# **Delete Area Projections**

Compiled projections for a selected area can be deleted in the **Delete Area Projections** module.

#### **Screen Controls**

- Select Area drop-down menu
- Delete projections for the selected area button

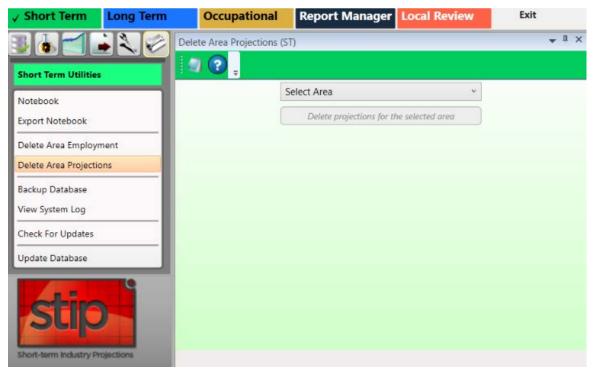


Figure 1: Delete Area Projections module

#### **Delete Area Projections**

1. Select an area from the **Select Area** drop-down menu.

2. Click the **Delete projections for the selected area** button. A dialog box will be displayed.

3. Click **Yes** to confirm the deletion of projections from the selected area. Click **No** to keep the projections for the selected area.

### **Backup Database**

Use the **Backup Database** module to create a copy or archive the existing data in the database so the information can be restored if needed.

#### **Backup Changes in the Database**

1. Click the **Backup Database** menu choice from the **Occupational Utilities** group menu. The backup process will begin immediately. When the backup is complete, the following screen will be displayed:

| Backup Database (OP) | 3 |
|----------------------|---|
| Backup complete      |   |
|                      |   |

Figure 1: Backup Database dialog box

2. Click OK.

If there is an issue with the backup process, a Backup error dialog displays. Read the error information and click OK to close the window. Correct any errors and select the Backup Database module to try again.

#### Set a Backup Location

If there is no backup directory selected in the <u>DB Setup Tool</u>, an error will be displayed. To select a backup folder:

1. Double-click the Projections Suite Database Tool icon on your desktop, or navigate to it through the Start menu.

#### **Projections Suite**

| Database Setup   | Diagnostics                          |  |                           |  |                                  |  |
|--|--------------------------------------|--|---------------------------|--|----------------------------------|--|
| Credentials<br>Server Inform                                     | ation                                |  |                           | Tasks<br>Required Steps:   | Optional Steps:                  |  |
| Server Name: SEDTS-L1LF-4GNH\SQLEXPRESS Y Port: 1433             |                                      |  | Connect                   | 😼 1. Create Database   | 🐺 Add Demo Data                  |  |
| Server Administrator<br>Username:<br>Password:                   |                                      | PS Application User Username: Password: VUse Windows Login | Cancer                    | <ul> <li>2. Create User</li> <li>3. Add Required Data</li> </ul> | Restore Database Delete Database |  |
| Database Nan<br>ProjectionsSi<br>Database Back<br>Location: C:\U | ne<br>uite<br>kup Folder             | 9  |                           |  | Vininstall FoxPro driver         |  |
|  | Please click Help                    | or read the Setup manual for instructions on               | configuring these options | 5.   |                                  |  |
| Progress Informa<br>Overall Progress<br>File Progress            |                                      |  |                           |  |                                  |  |
| Ready  | eady Time Process Status Description |  | Info                      |  |                                  |  |

Figure 2: Projections Suite Database Tool, browse and select a database backup location highlighted

- 2. Click the **backup folder icon** in the DB Setup Tool.
- 3. Select a location for your database backup folder.
- 4. Click OK.
- 5. Click the (Step 4) Save Configuration button.
- 6. Exit the database tool.

#### **Related Content**

Projections Suite Database Setup Tool

# **View System Log**

The **View System Log** module is used in the event Projections Suite is not functioning properly. A copy of the System Log may be required to troubleshoot your Projections Suite environment. This module is available in Short Term, Long Term, and Occupational Projections.

### View the System Log

- 1. Click the View System Log menu choice. Two dialog boxes will be displayed:
  - View System Log instructions dialog box, containing this message:

### System log viewer

If you have been asked to provide your log to Projections Suite support personnel, please save the log displayed in Notepad to your desktop and then attach it to an email addressed to your support contact. You can then close this window.

Figure 1: Instructions for sending the System Log to a support contact

• Notepad log file containing the log information:

| ProjectionSuite - Notepad   | _       |       | × |
|---|---------|-------|---|
| <u>F</u> ile <u>E</u> dit F <u>o</u> rmat <u>V</u> iew <u>H</u> elp |         |       |   |
| HEADER  |         |       | ~ |
| Timestamp: 4/24/2018 12:28:55 PM                                    |         |       |   |
| Message: Starting Projection Suite                                  |         |       |   |
| Category: Information   |         |       |   |
| Priority: 1   |         |       |   |
| EventId: 101  |         |       |   |
| Severity: Start   |         |       |   |
| Title:Application Startup   |         |       |   |
| Machine:  |         |       |   |
| App Domain: ProjectionSuiteShell.exe<br>ProcessId: 5080             |         |       |   |
| Process Name: C:\Users\ \AppData\Lo                                 | co1\/r  | nc    |   |
| \2.0\TLPLYV57.V1C\Q31C31QD.YTD                                      | сат (мр | εų    |   |
| \projtion 5da064408a334933 0005.0003 f2666                          | 299236  | c963h |   |
| \ProjectionSuiteShell.exe   | 277250  |       |   |
| Thread Name:  |         |       |   |
| Win32 ThreadId:11632  |         |       |   |
| Extended Properties:  |         |       |   |
|   |         |       |   |
| FOOTER  |         |       |   |
| HEADER  |         |       |   |
| Timestamp: 4/24/2018 12:28:55 PM                                    |         |       | ÷ |
|   |         |       |   |

Figure 2: Projections Suite Log

# **Check for Updates**

The **Check for Updates** module is available in Short Term, Long Term, and Occupational Projections. To check for updates to the Projections Suite application:

1. Select the **Check For Updates** option from the **Utilities** group menu.

2. Select the **Click here to check for updates** button. If the application is up to date, the following message will be displayed:

| rojections Suite I   | Message                  | _  |
|----------------------|--------------------------|----|
| No update available. | Proceed with projecting! |    |
|                      |                          | OK |

Figure 1: Projections Suite Message dialog box

# **Update Database**

Use the **Update Database** module to update the Industry Directory with industries that are not in your directory. The Update Database module is the same in the Short Term and Long Term Projections applications.

### **Screen Controls**

- Update Industry Directory button
- Update Titles check box

1. Select the **Update Database** module from the Long Term Utilities group menu. The Update Database module will be displayed.

| ✓ Short Term          | Long Term   | Occupational             | Report Manager Local Review | Settings | Exit  |
|-----------------------|-------------|--------------------------|-----------------------------|----------|-------|
|                       | -20         | Update Database (ST)     |                             |          | + ª × |
| Short Term Utilitie   |             | 📕 🛹 🗐 🕐 ,                |                             |          |       |
| Notebook              |             | Update Industry Director | y                           |          |       |
| Export Notebook       |             | Update Titles            |                             |          |       |
| Delete Area Employ    | ment        | Update Information:      |                             |          |       |
| Delete Area Project   | tions       | Action                   | Message                     |          |       |
| Backup Database       |             |                          |                             |          |       |
| View System Log       |             |                          |                             |          |       |
| Check For Updates     |             |                          |                             |          |       |
| Update Database       |             |                          |                             |          |       |
|                       |             |                          |                             |          |       |
|                       |             |                          |                             |          |       |
|                       | C C         |                          |                             |          |       |
| SU                    |             |                          |                             |          |       |
|                       |             |                          |                             |          |       |
| Short-term industry F | Projections |                          |                             |          |       |

Figure 1: The Long Term Update Database module

2. To update the titles of industries in your directory, click the **Update Titles** check box. **If you use your own titles, do not select Update Titles**.

3. Click on the **Update Industry Directory** button. The Update Information table will display any system messages, or the following dialog box will be displayed:

| The Industry D | inertenuura NOT  | undated .  | no shanana |
|----------------|------------------|------------|------------|
|                | irectory was NOT | updated, I | no changes |
| were found.    |                  |            |            |

Figure 2: Update Industry Directory dialog

# **Long Term Industry Projections**

### Long Term Industry Projections Introduction

**Long Term Industry Projections** (LTIP) examines the methods and models involved in forecasting 10-year industry employment projections for a state or sub-state area. The LTIP application helps state analysts develop industry employment projections for input into reports and into the Occupational Projections application. Projections show trends for industries and occupations, and provide information helpful to users in making education, job training, and career decisions.

Information about Long Term Industry Projections is available on the Projections Central Support site, under <u>LTIP Resources</u>. The LTIP Resources contains useful checklists, national employment time series data, national variables time series data, and preliminary instructions for loading this data. Use these resources to get started with Long Term Industry Projections.

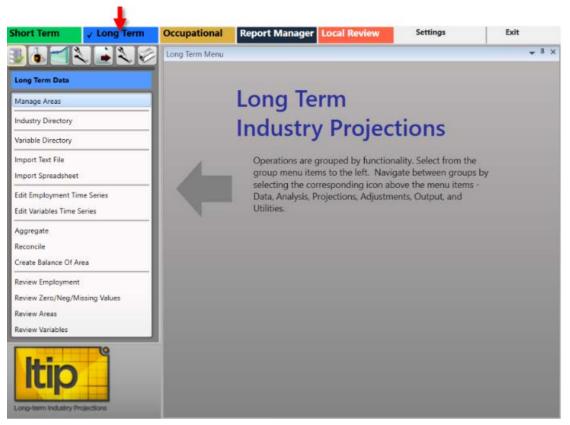


Figure 1: The Long Term Industry Projections application

The Long Term Industry Projections application contains 49 modules under the following group menu selections:

- Long Term Data (F5)
- Long Term Analysis (F6)
- Long Term Projections (F7)
- Long Term Adjustments (F8)
- Long Term Output (F9)
- Long Term Compare (F12)
- Long Term Utilities (F11)

# **Create a Long Term Industry Projection**

This section is meant to be an end-to-end guide for creating a Long Term Projection. Visit the <u>LTIP Resources</u> page on the <u>Projections Central Support</u> website for additional, helpful information when producing Long Term Projections.

### **Produce Long Term Industry Projections**

### 1. Pre-Projection Decisions and Adjustments

These decisions and adjustments should be made before starting to produce industry employment projections or forecasts.

Use Manage Areas to set the Geographic Coverage:

- Area Set Up predefined areas
  - o States
  - o Counties
  - Metropolitan Statistical Areas
  - o Micropolitan Statistical Areas
- Area Set Up user defined areas
- Area Groups user defined grouping of existing areas

#### Directories

Industry Directory

Matrix Industry Codes cross-walked from <u>NAICS</u> codes. Use to review or adjust industries.

Variable Directory

Use to review or adjust variables for use in the Projections process.

### 2. Import Data

- Use the <u>Import Spreadsheet</u> module to import annual employment data series and variable data. <u>National Data Instructions</u> is a help guide from <u>Projections</u> <u>Central Support</u> to get you started.
- You must have the state annual industry employment series. If you have monthly data, <u>Aggregate</u> by time to create an annual series. You will need annual employment data for each industry you plan to project.
- Import the National Annual Employment Series. This data is available under <u>LTIP Resources</u> on the <u>Projections Central Support</u> website.
- Import the National Economic Variable Spreadsheet. This data is available under <u>LTIP Resources</u> on the <u>Projections Central Support</u> website.

### 3. Review and Edit Data

- If you do not have state total all industries, you will need to create it. Use <u>Aggregate</u> and select **By Industry**, the **Area(s)**, the **Industry Levels** option, and **Roll up to Total**.
- Use Employment Series Analysis to add, edit, or delete data.
- The <u>Data</u> category > Review modules, as well as the <u>Reconcile</u> module are optional.
- The <u>Analysis</u> category modules are also optional. They give you more information about your industries.

### 4. Develop Long Term Industry Projections

There are three main projection models on the Projections category. You can use any or all of them, run multiple models on an industry, and save them.

Batch Processing runs all industries.

To create sub-state projections, use <u>Project Multiple Regions</u>. This process works like batch processing but for sub-state areas. If you are projecting sub-state, you must <u>Create Employment from Projections</u> in the Output category first.

The final step is the <u>Summary</u> module. You must select the **Model** you want to use for each industry. The Model select is the projection sent to the Occupational Projections in the ICT Export.

### 5. ICT Export

• Use ICT Export to transfer ICT data to Occupational Projections

# Long Term Data Menu Items

## Long Term Data Introduction

Use the **Long Term Data** group menu to manage areas, industries, and variables. Data importing, manipulation of data, and review tools are also available.

| long Term I                  | Data          |        |  |
|------------------------------|---------------|--------|--|
| Manage Are                   | 15            |        |  |
| industry Dire                | ctory         |        |  |
| Variable Dire                | ctory         |        |  |
| mport Text I                 | ile           |        |  |
| mport Sprea                  | dsheet        |        |  |
| Edit Employ                  | nent Time Se  | ries   |  |
| E <mark>dit V</mark> ariable | s Time Series |        |  |
| Aggregate                    |               |        |  |
| Reconcile                    |               |        |  |
| Create Balan                 | ce Of Area    |        |  |
| Review Empl                  | oyment        |        |  |
| Review Zero,                 | Neg/Missing   | Values |  |
| Review Area                  |               |        |  |
| Review Varia                 | bles          |        |  |

Figure 1: Long Term Data group menu

The Long Term Data group menu contains the following selections:

- Manage Areas
- Industry Directory
- Variable Directory
- Import Text File
- Import Spreadsheet
- Edit Employment Time Series
- Edit Variables Time Series
- <u>Aggregate</u>
- <u>Reconcile</u>
- <u>Create Balance of Area</u>
- <u>Review Employment</u>
- <u>Review Zero/Neg/Missing Values</u>
- Review Areas
- <u>Review Variables</u>

# **Manage Areas**

Use the **Manage Areas** module to select and customize areas for Industry and Occupational Projections. Manage Areas organizes the basic geographical areas your projections will be calculated from. You can select your state, add or change area types, add sub-state areas, and create Area Groups. Area Groups are used in sub-state projections and the Project Multiple Regions (<u>ST</u> and <u>LT</u>) modules.

The Manage Areas module is available in the Short Term, Long Term, and Occupational Projections applications. The changes you make in any of these modules populates throughout the applications. The Notebook is not available in the Long Term Projections Manage Areas module.

### **Screen Controls**

Area Setup section

- Right Click Context Menu (United States)
  - o Show All States
  - Hide Unchecked States
- Right Click Context Menu (state)
  - Show All Area Types
  - Show Area Types with Areas
  - Add Area Type
  - o Create Area Group
  - Print Area Types
  - Print Areas
  - Print Area Groups
- Right Click Context Menu (Substate)
  - o Add Area
  - Edit Area Type
  - Print Area Types
  - o Delete Area

#### Area Groups section

- Right Click Context Menu (Highest Level)
  - Delete Area Group
  - Print Area Groups
- Right Click Context Menu (Substate)
  - Delete Area Group Member

### **Projections Suite**

| Short Term             | ✓ Long Term   | Occupational             | Report Manager Loo  | al Review |                    | Settings                                  | Exit               |              |
|------------------------|---------------|--------------------------|---|-----------|--------------------|---|--------------------|--------------|
| 3644                   |               | Manage Areas (LT)        |   |           |                    |   |                    | <b>-</b> ↓ × |
| Long Term Data         |               | <b>?</b> ,               |   |           |                    |   |                    |              |
| Manage Areas           |               |                          | Area Setup  |           |                    | Area Grou                                 | ips                |              |
| Industry Directory     |               |                          | rea(s) for which you would like<br>click for context menu options | . i       | h the Area Setu    | reated using the r<br>p window. Select    | a State or Substat | e area.      |
| Variable Directory     |               |                          |   | a         | dd other areas     | select menu item '(<br>to the group using | g the 'Add Area to |              |
| Import Text File       |               |                          |   | E         | xisting Group      | context menu item                         | 1.                 |              |
| Import Spreadsheet     |               | ✓ United States ✓ Freedo | nia [FIPS=80, AreaCode=0000                                       | 80]       |                    | donia WIAs (Par                           |                    |              |
| Edit Employment Tim    | ne Series     |                          | Balance of State [code=30]<br>Workforce Development Area [        | code_171  | Freedon            | ia Balance of State                       | WIA                |              |
| Edit Variables Time S  | eries         |                          | workforce bevelopment Area (                                      | code=17j  | Freedon            | ia WIA 3                                  |                    |              |
| Aggregate              |               |                          |   |           | Freedon<br>Freedon |   |                    |              |
| Reconcile              |               |                          |   |           | Freedon            | ia WIA 6                                  |                    |              |
| Create Balance Of Ar   | ea            |                          |   |           |                    |   |                    |              |
| Review Employment      |               |                          |   |           |                    |   |                    |              |
| Review Zero/Neg/Mi     | issing Values |                          |   |           |                    |   |                    |              |
| Review Areas           |               |                          |   |           |                    |   |                    |              |
| Review Variables       |               |                          |   |           |                    |   |                    |              |
| Long-term Industry Pro | ojections     |                          |   |           |                    |   |                    |              |

Figure 1: Manage Areas module

### Area Setup Section of the Screen

1. Right click the State Area you want to work with to open its context menu.

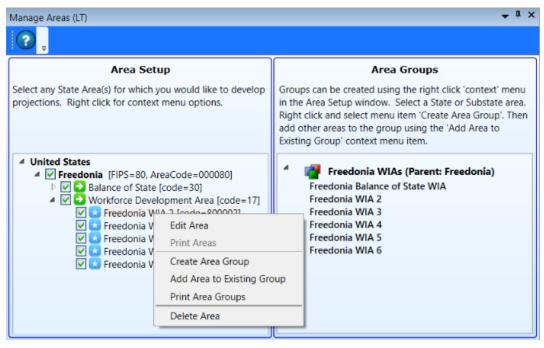


Figure 2: Context menu for working with State Areas

Depending on the changes needed to this area, click the appropriate option from the following:

- Edit Area
- Print Area
- Create Area Group
- Add Area to Existing Group
- Print Area Groups
- Delete Area

### Edit an Area

1. Click Edit Area. The Edit Area dialog box will display:

| Area Name: | Freedonia WIA 2       |  |
|------------|-----------------------|--|
| Area Code: | 800002                |  |
| Enter cod  | e of exactly 6 digits |  |

Figure 3: Edit Area dialog box

- 2. Change the Area Name and/or Area Code.
- 3. Click OK.

#### **Print Areas**

1. Select **Print Area Groups** from the context menu. This menu choice is accessed by right-clicking the second highest level (Freedonia, in this example) in the **Area Setup** section. The **Print Preview** screen will be displayed.

2. Click the **Print** icon to print the area's data.

#### **Create an Area Group**

1. Right click on the 2nd level in the Area Setup screen section.

### **Projections Suite**

| Manage Areas (LT)   | <b>→</b> # :  |
|---|---|
| Area Setup  | Area Groups   |
| Select any State Area(s) for which you would like to develop<br>projections. Right click for context menu options.  | Groups can be created using the right click 'context' menu<br>in the Area Setup window. Select a State or Substate area.<br>Right click and select menu item 'Create Area Group'. Then<br>add other areas to the group using the 'Add Area to<br>Existing Group' context menu item. |
| <ul> <li>✓ United States</li> <li>✓ Freedonia [FIPS=80, AreaCode=000080]</li> <li>▷ ✓ ➡ Balance of State [code=30]</li> <li>✓ ➡ Workforce Development Area [code=17]</li> <li>✓ ➡ Freedonia WIA 2 [code = 200002]</li> <li>✓ ➡ Freedonia WIA 3 [code</li> <li>✓ ➡ Freedonia WIA 4 [code</li> <li>✓ ➡ Freedonia WIA 5 [code</li> <li>✓ ➡ Freedonia WIA 6 [code</li> <li>✓ ➡ Freedonia WIA 6 [code</li> </ul> | Existing Group  |

Figure 4: Create Area Group, to add to the Area Groups screen section

2. Click **Create Area Group**. The **Create Area Group** dialog box will be displayed:

| Create Area Group  |
|--|
| This action creates a new Area Group that is composed of a 'parent'<br>area and can have other areas called 'children'. Children should be<br>areas contained within the parent area, and may be added at any<br>time. |
| In addition, a 'balance of state' area can be created if the parent area is not in any of the children.  |
| To create the group, enter the group name below and click OK   |
| Parent Area  |
| Area: Freedonia WIA 2<br>FIPS: 80<br>Type: Workforce Development Area<br>Code: 17 - Workforce Development Area   |
| New Group Name: Test Group   |
| OK Cancel  |

Figure 5: Create Area Group dialog box

3. Name the new Area Group.

4. Click **OK**. This will add the new Area Group (named Test Group, in this example) to the **Area Groups** section of the screen.

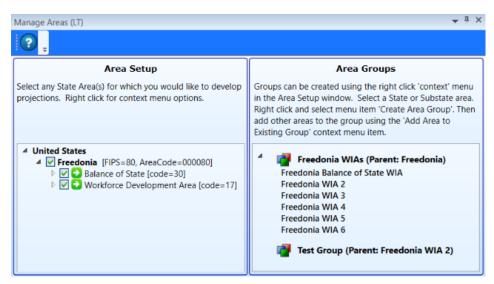


Figure 6: The new Area Group (Test Group) is added

5. Continue adding areas to the Area Group by **right-clicking** and selecting **Add Area to Existing Group** from the context menu. Select a group from the dropdown menu to add the area to the Area Group, then click **OK**.

#### **Delete Area**

- 1. Right click on the area to select it.
- 2. Select Delete Area. The following dialog box will be displayed:

| # Records | Database Record Type   |
|-----------|------------------------|
| 1         | Area                   |
| 2242      | AnnualEmployment       |
| 71        | LTIndustryProjection   |
| 26550     | MonthlyEmployment      |
| 1         | Notebook               |
| 24        | STMultipleRegionPrelim |

Figure 7: Delete Area dialog box

**Projections Suite** 

3. To delete the area, click **OK**. Click **Cancel** to keep the area.

### **Delete an Area Group**

1. Right click the Area Group to select it for deletion.

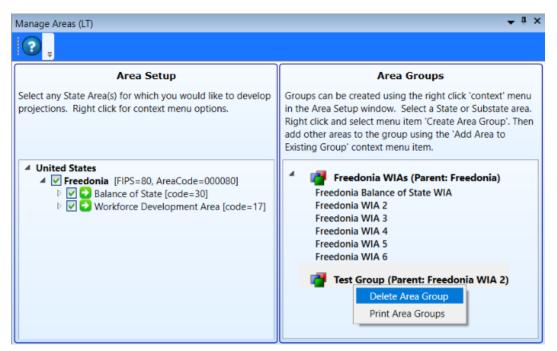


Figure 8: Delete the Area Group, Test Group

2. Select **Delete Area Group** from the context menu. You will be prompted to confirm the deletion.

3. Click **OK** to confirm. Click **Cancel** to keep the Area Group.

### View Area Types

It may be helpful to view the various area types when initially setting up your Projections software, to determine the best way to classify your areas. To view all area types:

1. **Right click** your state and select **Show All Area Types**. This will list all of the area types and their associated codes in the Area Setup section.

| ✓ United States                            |
|--|
| Freedonia [FIPS=80, AreaCode=000080]       |
| Balance of State [code=30]                 |
| 🖻 🔽 🔁 Workforce Development Area [code=17] |
| BLS Region [code=06]                       |
| Broad Geographic Area (BGA) [code=07]      |
| Census Places [code=20]                    |
| City [code=11]                             |
| Combined Statistical Area [code=24]        |
| Congressional District [code=19]           |
| County [code=04]                           |
| Economic Development Region [code=08]      |
| Iob Center Area [code=18]                  |
| 🖻 🍛 Labor Market Area [code=10]            |
| Metropolitan Division [code=23]            |
| Metropolitan Statistical Area [code=21]    |
| Micropolitan Statistical Area [code=22]    |
| Minor Civil Division [code=05]             |
| MSA [code=02]                              |
| Municipality/Suburb [code=14]              |
| One Stop Area [code=16]                    |
| Planning Region [code=09]                  |
| SDA [code=03]                              |
| State-defined Area 1 [code=50]             |
| State-defined Area 2 [code=70]             |
| Town [code=12]                             |
| Township [code=13]                         |
| Workforce Investment Region [code=15]      |

Figure 9: All area types

2. When you are finished, close the list by **right-clicking** your state and selecting **Hide Area Types With No Areas** from the context menu.

#### **Related Content**

- Create Balance of Area
- Review Areas
- Project Multiple Regions (<u>ST</u> and <u>LT</u>)
- Area Format

# **Industry Directory**

Use the **Industry Directory** as a resource for information about specific industries, listed by <u>NAICS</u>. The Industry Directory lists all valid industry codes and titles in a tree view. All Projections Suite applications use it for defining industries. A default Industry Directory is installed with the Projections Suite.

Analysts can modify the directory as needed for your state. However, the position of industries in the industry tree is critical. When adding or moving industries, ensure you place them correctly within the parent industry. Industry placement will affect aggregation of employment data in later projections steps.

The Industry Directory module is available in the Short Term, Long Term, and Occupational Projections applications. The same screen displays in each application. The Notebook is not available in the Long Term Industry Directory.

### **Screen Controls**

- Print all industries check box
- Search for field
- Find button
- Expand/Collapse arrows

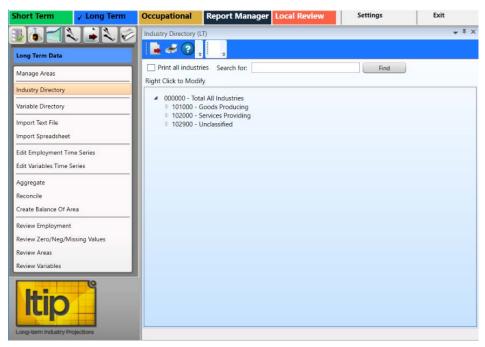


Figure 1: Industry Directory module

The **Total All Industries** code is displayed at the top of the tree. Beneath **Total All Industries** are the NAICS codes for Super-Sectors (2-digit), sectors (3-digit), and detailed industries (4 - 6 digit).

### Manually Expand/Collapse the Industry Hierarchy

1. Click the **Expand** icon next to the general category of the industry. The category will expand one level.

2. Continue clicking the expand icons in that category until the desired industry level is displayed.

3. Click the **Collapse** icon on the category header to collapse to that level.

### Use the Search Tool

- 1. Click into the Search for field.
- 2. Type an industry description or industry code.

3. Click the **Find** button or press **Enter**. The designated industry will be displayed if it is listed in the industry hierarchy.

| Industry Directory (LT)   | <b>→</b> ‡ × |
|---|--------------|
|   |              |
| Print all industries Search for: 541100 Find  |              |
| Right Click to Modify   |              |
| <ul> <li>000000 - Total All Industries</li> <li>101000 - Goods Producing</li> <li>102000 - Services Providing</li> <li>102100 - Trade, Transportation, and Utilities</li> <li>102200 - Information</li> </ul> | Î            |
| D 102300 - Financial Activities   |              |
| <ul> <li>102400 - Professional and Business Services</li> <li>540000 - Professional, Scientific, and Technical Services</li> </ul>  |              |
| <ul> <li>4 541000 - Professional, Scientific, and Technical Services</li> <li>4 541000 - Professional, Scientific, and Technical Services</li> </ul>  |              |
| 541100 - Legal Services   |              |
|   | ~            |

Figure 2: Using the Search for field

| Search for: | Legal Services | Find |
|-------------|----------------|------|

Figure 3: Use a description to find an industry

### Additional Options in the Industry Directory

There are various options in the Industry Directory to help customize industries. To customize the Industry Directory:

1. **Right click** on an entry in the Industry Directory. Depending on which industry level you've selected, one of two context menus will be displayed.

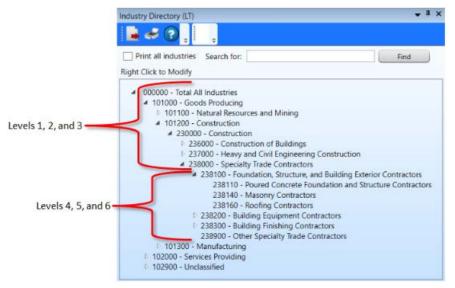


Figure 4: Industry Directory breakdown

The context menus contain the following items:

- Expand all children will expand the selected entry to the sixth level.
- Collapse all children will collapse all entries within the selected entry.
- Add enables the addition of new industries to the selected entry. Ensure their placement is correct to avoid future aggregation issues.
- **Cut** will remove the selected entry and copy it to the clipboard for pasting into another area.
- Delete will delete the selected entry.
- Edit enables editing of a selected entry.
- Move allows the selected entry to be moved to another location in the directory.
- **Paste** will paste a previously cut industry into another area in the hierarchy.

# **Variable Directory**

The **Variable Directory** contains various area-specific variables used in Long Term Projections. The Variable Directory displays all variables by area that were defined and are available for use. These variables can be edited, deleted, and new variables may be added, allowing customization to local needs.

Variable data can be <u>imported</u> as a spreadsheet. Match variable names on spreadsheets exactly; misspellings will cause a new variable to be created in the directory. View the variable file format example by clicking <u>here</u>.

National variables are available on the Projections Central Support web site under <u>LTIP</u> <u>Resources</u>, Supplemental Files (Long-Term National Variables Time Series NatVars2026.zip).

### **Screen Controls**

- Select an Area drop-down menu
- Delete all variables in area button
- Delete projected values for area button

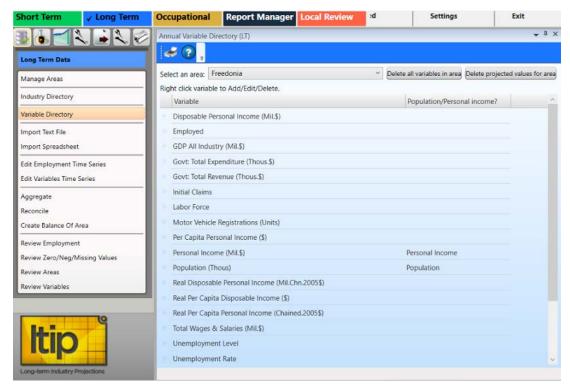


Figure 1: Variable Directory module

### Add a Variable

1. **Select an area** from the drop-down menu. The variables for the selected area will be displayed.

2. **Right click** anywhere in the variable table to add a new variable.

| ۽ 😮 👟             |                    |                   |             |               |                  |                  |                 |
|-------------------|--------------------|-------------------|-------------|---------------|------------------|------------------|-----------------|
| Select an area:   | United States      |                   | Ý           | Delete all va | ariables in area | Delete projected | values for area |
| Right click varia | ble to Add/Edit/   | Delete.           |             |               |                  |                  |                 |
| Variable          |                    |                   |             | Pop           | ulation/Persor   | nal income?      | -               |
| All Employe       | ees: Construction  | (NSA, Thous)      |             |               |                  |                  |                 |
| All Employe       | ees: Construction  | (SA Thous)        |             |               |                  |                  |                 |
| All Employe       | ees: Durable (     | Add               |             |               |                  |                  |                 |
| All Employe       | ees: Education     | Edit<br>Delete    | , Thous)    |               |                  |                  |                 |
| All Employe       | ees: Education &   | health services   | (SA, Thous) |               |                  |                  |                 |
| All Employe       | ees: Financial Act | ivities (NSA, Tho | us)         |               |                  |                  |                 |
| All Employe       | ees: Financial Act | ivities (SA Thou  | ()          |               |                  |                  |                 |

Figure 2: Annual Variable Directory context menu

- 3. Click the Add option. The Add/Edit Variable dialog box will be displayed.
- 4. Type the name of the new variable into the Name field.

| Add/Edit | t Variable                    | - |  |
|----------|-------------------------------|---|--|
| Name     | Test                          |   |  |
| Area     | Freedonia (000080)            | ~ |  |
| Pop/Pl?  |                               | ~ |  |
|          | Population<br>Personal Income |   |  |

Figure 3: Add/Edit Variable dialog box

5. Select an area from the Area drop-down menu.

6. If the new variable is a population or personal income variable to be used in an OLS model, click the Pop/PI drop-down menu and select the Pop/PI status. You can also select neither.

7. Click **Save**. The variable will populate in the variable table.

### Edit a Variable

- 1. Right click a variable to edit it. Select Edit from context menu.
- 2. Make any required changes.
- 3. Click Save.

### **Delete a Variable**

1. **Right click** the variable to be deleted. Select **Delete** from the context menu. A confirmation dialog box will be displayed.

2. Click **Yes** to delete. Click **No** to keep the variable.

Teleting a variable will cause any data associated with it to be lost.

Click the **Delete all variables in area** button to delete the variables in the selected area. Click the **Delete projected values for area** button to delete the projected values for the selected area.

### **Related Content**

- Import Spreadsheet
- Edit Variables Time Series
- Ratio Variables
- <u>Standard Transformations</u>

# **Import Text File**

The **Import Text File** module is only used to import Quarterly Census of Employment and Wages (QCEW) program data.

The file is created specifically for this import by running QCEW job ES2J247D (also known as job 247D). Request the file from your QCEW analysts by providing the parameters for the specific data you need. To save time, it is very important to extract data from the QCEW job output specific to the industry employment and area data required. The text file may have the needed data, but it may require importing into a spreadsheet file first to manipulate or clean up the data before importing it. If this is the case, use the <u>import spreadsheet</u> module to add the data to the database. Reference the <u>QCEW Data Extract</u> topic for additional information.

The Import Text File module is available in the Short Term and Long Term Projections applications. The same screen displays in each application. The Notebook is not available in the Long Term Import Text File module.

### **Screen Controls**

- Select File to Import field
- Browse button
- Import button
- Change Font Size slider

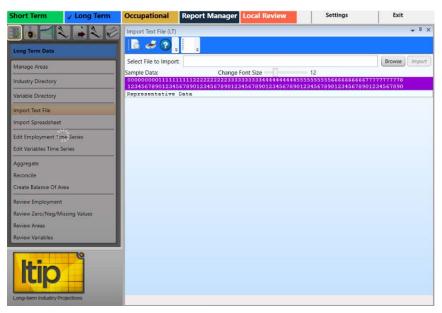


Figure 1: Import Text File module

The format of the text file to be imported must have the data elements of the table into which it is imported. The valid table formats are below. Click the appropriate link to see details:

#### **QCEW Text Format**

The QCEW text file format consists of a fixed set of 42 or 43 required columns, depending on the QCEW type (Expo202 or Win202, respectively). If the text file has fewer or greater number of columns, the application will display errors. For additional information about this format, click <u>here</u>.

#### Win202/MSA Text Format

The Win202/MSA format is similar to the standard QCEW format, except the area code has one additional column. The import software expects this format to have 43 columns. If the text file has fewer or greater number of columns, the application will display errors. For details about this format, click <u>here</u>.

#### **Import Text File**

1. Click the **Browse** button.

2. Select the text file and click **Open**. The first row of data will appear below the purple bar.

| Import Text File (LT)  |   | <b>→</b> ╄ × |
|--|---|--------------|
| 🖹 🗳 🖓 📕  | Ready to Import text file.                          |              |
| Select File to Import:   | C:\Projections Suite\Data Files\ALMIS.long.good.txt | Browse       |
| Sample Data:   | Change Font Size 12                                 |              |
| the first of the low of the Cardin Cardin Street and an Article Street and | 1112222222223333333334444444445555555555            |              |
| A COLUMN TWO IS NOT THE OWNER WAS ADDRESSED.                               | 0020090101000000100101000                           |              |
|  |   |              |
|  |   |              |
|  |   |              |
|  |   |              |
|  |   |              |
|  |   |              |
|  |   |              |
|  |   |              |
|  |   |              |
|  |   |              |

Figure 2: First row of data in file

Numbers in the purple bar are read ton to bottom to indicate the column position they represent. For example, 0 and 1 is the first column position. 1 and 0 is the tenth column position. 2 and 5 is the twenty-fifth column position, and so on. These column positions help in explaining the data elements of the text file.

Click the **Preview** button on the Active Module Toolbar to preview the data in the text file.

3. If you are satisfied with the file layout, click **Import**. There are two places import information displays (see Figure 3):

- The Active Module Toolbar.
- A detailed data validation message/confirmation will be displayed in the message grid. These messages will provide information to determine the cause of import errors.

| Impo         | rt Text File | e (ST)  |               |               |   |  | <b>↓</b> ₽ >                                       |
|--------------|--------------|---|---------------|---------------|---|--|--|
| d            | 3            | J 🕜 🚺 File ca   | an not be imp | ported.       | -   |  |  |
| Selec        | t File to Ir | mport: C:\Projecti  | ons Suite\Da  | ta Files\ALMI | S.short.good.   | bxt E  | Browse   |
| Sampl        | e Data:      |   | Change Fo     | ont Size —    |   | 12   |  |
| 1234<br>49 0 | 5678901      | 11111111222222<br>23456789012345<br>491100,200910<br>atus:  | 5678901234    | 5678901234    | and the second se | the second s | the second states and second states are set of the |
| [            | Row #        | Message   | State FIPS    | Area Code     | Area Type   | Industry   | Occupation   |
|              | 1            | Ownership<br>attribute was<br>assigned on row<br>(Column 39). We<br>cannot import<br>data with specific<br>ownership -<br>import aborted. |               |               |   |  |  |
|              |              |   |               |               |   |  |  |

Figure 3: Data validation messages

4. If you are not satisfied with the file layout, click **Cancel**. The import will stop.

The order of the data is imported, you can view it in the <u>Review Employment</u> module to verify the information is correct or resolve any problems if it is not.

5. Click the **X** in the top right corner to close the Import Text File module to enable the other group menu selections.

#### **Related Content**

- File Formats Introduction
- QCEW Output Text Format
- Win202/MSA Text Format
- <u>QCEW Data Extraction Instructions</u>

# **Import Spreadsheet**

Use **Import Spreadsheet** to import various spreadsheet formats. This is the most common method for importing data. Spreadsheet file formats must be exact. For additional information and examples of file formats, reference the <u>File Formats</u> <u>Introduction</u> topic.

The Import Spreadsheet module is available in the Short Term and Long Term applications. The same general screen displays in each application, however, if you attempt to import data meant for use in the Long Term application while using the Short Term Import Spreadsheet module (and vice versa), you will be prompted to use the correct module for importation. The Notebook is not available in the Long Term Import Spreadsheet module.

#### **Screen Controls**

- Select File to Import field
- Browse button
- **Import** button
- Detected file type field

| Short Term                       | ✓ Long Term  | Occupational          | Report Manager         | Local Review     | Settings | Exit   |                         |
|----------------------------------|--------------|-----------------------|------------------------|------------------|----------|--------|-------------------------|
|                                  |              | Import Spreadsheet    | (LT)                   |                  |          |        | <b>▼</b> <sup>1</sup> × |
| Long Term Data                   |              | . 3 🍝 📕               | Click Browse button to | select file<br>Ŧ |          |        |                         |
| Manage Areas                     |              | Select file to import | :                      |                  |          | Browse | Import                  |
| Industry Directory               |              | Detected file type    | :                      |                  |          |        |                         |
| Variable Directory               |              |                       |                        |                  |          |        |                         |
| Import Text File                 |              |                       |                        |                  |          |        |                         |
| Import Spreadsheet               |              |                       |                        |                  |          |        |                         |
| Edit Employment Tin              | ne Series    |                       |                        |                  |          |        |                         |
| Edit Variables Time S            | eries        |                       |                        |                  |          |        |                         |
| Aggregate                        |              |                       |                        |                  |          |        |                         |
| Reconcile                        |              |                       |                        |                  |          |        |                         |
| Create Balance Of Ar             | ea 👘 👘       |                       |                        |                  |          |        |                         |
| Review Employment                |              |                       |                        |                  |          |        |                         |
| Review Zero/Neg/Mi               | ssing Values |                       |                        |                  |          |        |                         |
| Review Areas<br>Review Variables |              |                       |                        |                  |          |        |                         |
| Review variables                 |              |                       |                        |                  |          |        |                         |
| Long-term inclustry Pro          |              |                       |                        |                  |          |        |                         |

Figure 1: Import Spreadsheet module

#### Import a Spreadsheet

1. Click the **Browse** button.

2. Select the spreadsheet file and click **Open**. The system will validate the data and display the file type in the **Detected file type** field. Depending on the type of import, you will be prompted to classify variables and validation messages (if any) will display.

3. Click the **Import** button. An Import Spreadsheet dialog box will be displayed, indicating if the import was successful and how many usable rows will be imported.

4. Click **Yes** to import the valid records. Click **No** to stop importing the records. Clicking **Yes** will display the Import Spreadsheet dialog box:

| Import Spreadsheet                       | _  |
|--|----|
| Import: Successfully imported 48/48 rows |    |
|  | ОК |

Figure 2: Successfully imported records

5. Click **OK**. Import Status messages will display in the message grid.

| Impo | rt Spreads    | heet (LT)  |            |               |               |          | 🔺 İ 🗄      |
|------|---------------|--|------------|---------------|---------------|----------|------------|
|      | e 🗸 (         | Import: completed 48   | rows<br>₹  |               |               |          |            |
| Sele | ct file to ir | nport: C:\Users\rbradford\D  | ownloads\N | atVars2026\Na | atVars2026.xl | Б        | rowse      |
| De   | tected file   | type: Variables  |            |               |               |          |            |
|      | Selected      | area: United States  |            |               |               |          |            |
|      | Import Sta    | itus:  |            |               |               |          |            |
|      | Row #         | Message  | State FIPS | Area Code     | Area Type     | Industry | Occupation |
|      | 1             | Import Validation: # Rows<br>that are ready to import: 48                    |            |               |               |          |            |
|      | 1             | Validation: Spreadsheet<br>contains a total of 48 rows<br>(excluding header) |            |               |               |          |            |
|      | 1             | Import: Successfully<br>imported 48/48 rows                                  |            |               |               |          |            |

Figure 3: Import Status messages

6. Click the **X** in the top right corner to close the Import Spreadsheet module and enable the other group menu items.

### **Projections Suite**

### **Related Content**

- File Formats Introduction
  Variable Directory

# **Edit Employment Time Series**

Use the **Edit Employment Time Series** module to view and edit the historical pattern of an industry, for a specific time period.

Annual Employment data is imported into the Projections Suite database from an external file. Typically, changes are made prior to importing. However, there may be times when you need to make edits.

### **Screen Controls**

- Area drop-down menu
- Industry drop-down menu
- Delete Data Series button
- Display date spinners
  - o Max button



Figure 1: Edit Employment Time Series module

### **Edit the Employment Time Series**

- 1. Select an area from the Area drop-down menu.
- 2. Select an industry from the **Industry** drop-down menu.

3. Select a time frame by <u>manipulating the Display date spinner</u>. The actual employment for the selected area, industry, and time frame will be displayed.

4. **Right click** the data table on the left. A contextual menu will be displayed.

- Add will allow you to add new values to the data series.
- Edit enables the editing of current values.
- **Delete** will delete data points from the series. Delete multiple rows by <u>selecting multiple items</u>.

The cautious when deleting data points. Missing data points cause major problems because time-series and OLS models cannot project an employment series with data points missing.

### **Delete the Displayed Data Series**

1. Select the area, industry, and date to navigate to the data series you want to delete.

2. Click the **Delete Data Series** button. A confirmation dialog box will be displayed.

3. Click **Yes** to delete the data series. Click **No** to keep the data series.

The data series can be retrieved by reloading the database.

# **Edit Variables Time Series**

Use the **Edit Variables Time Series** module to view and edit the annual pattern of the selected variable.

Variable data is imported into the Projections Suite database from an external file with the <u>Import Spreadsheet</u> module. Typically, any changes are usually made prior to importing. However, there may be times you need to make edits.

### **Screen Controls**

- Select an Area drop-down menu
- Select an Annual Variable drop-down menu
- Delete Data Series button



Figure 1: Edit Variables Time Series module

### **Edit the Variables Time Series**

1. Select an Area from the drop-down menu.

2. **Select an Annual Variable**. The variable time series for the selected area and annual variable will be displayed.

- 3. **Right click** the data table on the left to open a context menu.
- Add will allow you to add new values to the data series.

This is a method to add a single value. If you have many to enter, you can use the <u>Import Spreadsheet</u> module.

- Edit enables the editing of current values.
- **Delete** will delete data points from the series. Delete multiple rows by selecting multiple items.

The careful when deleting data points. Variables with missing data points cannot be used as inputs into OLS regression models.

### **Delete the Displayed Data Series**

1. Select the area and variable to navigate to the variable series you want to delete.

2. Click the **Delete Data Series** button. A confirmation dialog box will be displayed.

3. Click **Yes** to delete the data series. Click **No** to keep the data series.

### **Related Content**

Variable Directory

# Aggregate

The **Aggregate** module is a tool for creating industry employment series within the system, rather than importing data from external sources. With the aggregation tools, you can create total industry series from more detailed industries and ensure that state total records are the sum of sub-state records. The Aggregate module allows the user to rollup data across selected areas, industries, and time. For example, if employment information is imported for 3-digit industries, you can aggregate employment from the detailed 3-digit industries to sector (2-digit) industries. Also, aggregation by time can create an annual employment series from monthly employment series. You have the option of creating new records or supplementing already existing data.

The Aggregate module is available in the Short and Long Term applications. The same screen displays in each application. The Notebook is not available in the Long Term Aggregate module.

### **Screen Controls**

- Select aggregation type down-down menu
- Industry radio button
- Industry Levels radio button
- Select an Industry drop-down menu
- Select an industry Level drop-down menu
- Roll up to drop-down menu
- **Overwrite** radio button
- Add radio button
- Aggregate Data button
- View Results Data/Graph button

### **Projections Suite**

| Short Term                                | ✓ Long Term   | Occupational       | Report Manager Local Review | Getting Started | Settings | Exit         |
|---|---|--------------------|-----------------------------|-----------------|----------|--------------|
|   |   | Aggregation (LT)   |                             |                 |          | <b>→</b> ‡ × |
| Long Term Data                            |   | 2                  |                             |                 |          |              |
| Manage Areas                              |   | 1 Select aggre     | gation type:                |                 |          |              |
| Industry Directory                        |   |                    |                             |                 |          |              |
| Variable Directory                        |   |                    |                             |                 |          |              |
| Import Text File<br>Import Spreadsheet    | 0   |                    |                             |                 |          |              |
| Edit Employment Ti<br>Edit Variables Time |   |                    |                             |                 |          |              |
| Aggregate                                 |   |                    |                             |                 |          |              |
| Reconcile<br>Create Balance Of A          | rea   |                    |                             |                 |          |              |
| Review Employmen                          | ti internet | Current aggregatio | on parameters               |                 |          |              |
| Review Zero/Neg/N                         | fissing Values  | No parameters sel  | 1.5117.00                   |                 |          |              |
| Review Areas                              |   |                    |                             |                 |          |              |
| Review Variables                          |   |                    |                             |                 |          |              |
| ltip                                      | e   |                    |                             |                 |          |              |

Figure 1: Aggregate module

The Aggregate module uses numeric step indicators to guide the process. After Step 1 (select aggregation type), the other steps will be enabled.

### Aggregate by Industry

Aggregating by Industry adds employment across various industry levels or groups of industries for a particular area or group of areas.

1. Select **Aggregate by Industry** from the **Select aggregation type** drop-down menu. The step guide buttons will be unlocked.

| Aggregation (LT)                                   |                      | ▲ ij ×                       |
|--|----------------------|------------------------------|
|  |                      |                              |
| 1 Select aggregation type: Aggregate by Industry ~ |                      |                              |
| 2 Select areas:                                    | 3 Select industries: | O Industry O Industry Levels |
| United States                                      |                      |                              |
| Freedonia  |                      |                              |
| Freedonia Balance of State WIA                     |                      |                              |
| Freedonia WIA 2                                    |                      |                              |
| Freedonia WIA 3                                    |                      |                              |
| Freedonia WIA 4                                    |                      |                              |
| Freedonia WIA 5                                    |                      |                              |
| Goverwrite OAdd                                    |                      |                              |
| Current aggregation parameters                     |                      |                              |
| Aggregating by industry                            |                      |                              |
| New records will be created.                       |                      |                              |
|  |                      |                              |
| 5 Aggregate Data View Results Data/Graph           |                      |                              |

Figure 2: Aggregate by Industry selected

2. **Select areas** to aggregate from the area list box. The list shows all areas with monthly employment in the database. For assistance with selecting multiple items, click <u>here</u>.

3. Select the Industry or Industry Levels radio button.

- When the Industry radio button is selected, the Select an industry dropdown menu becomes available. Selecting an industry will populate the Select industries to sum window. Select the industries to include in the aggregation from the Select industries to sum window and continue to the next step.
- Selecting the **Industry Levels** radio button enables you to **Select an industry Level** from the drop-down menu and select a level to **Roll up to** from the drop-down menu. Option combinations are available to aggregate data at various industry levels. The chosen industry level will select the next highest level to **Roll up to** automatically, but higher roll-up levels can be selected as well.

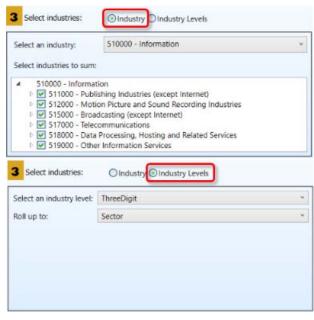


Figure 3: Select industries option groups

Each time selections are made, the Current aggregation parameters window will change to reflect the modifications.

- 4. Select an **Overwrite** or **Add** radio button option.
- **Overwrite** will replace an existing data point with newly summed data. It will only do this on a year-by-year basis. Years not part of the rollup process will be left unaffected.

- Add will add the new value to existing data, if that data is present. This is a way to supplement the aggregation process.
- 5. Click the **Aggregate Data** button to perform the rollup.

6. Click the **View Results Data/Graph** button. The **Aggregation Results** screen will activate to show the results of the aggregation. If other areas or industries were chosen in Step 2, they will be available from the drop-down boxes.

| Freedonia |         |     |                   | ~          | 230000 - 0 | onstruction |       |            |              |
|-----------|---------|-----|-------------------|------------|------------|-------------|-------|------------|--------------|
| Year      | Value   | -10 | Display: From 197 | 72 🖨 To    | 2018       | max         |       |            |              |
| 1972      | 78,102  |     |                   |            |            |             |       |            |              |
| 1973      | 82,260  |     | 190000            | 1          |            |             |       | N          |              |
| 1974      | 80,754  |     |                   |            |            |             |       |            |              |
| 1975      | 70,968  |     |                   |            |            |             | par - |            | •            |
| 1976      | 72,012  |     | 164000            | 2 2 2      |            |             | 1     |            |              |
| 1977      | 77,542  |     |                   |            |            |             | /     |            |              |
| 1978      | 85,136  |     |                   |            |            | 1           | S     |            |              |
| 1979      | 89,892  |     | 138000            |            | *          | 1           |       | -          | _            |
| 1980      | 87,664  |     |                   |            |            | 1           |       |            |              |
| 1981      | 84,632  |     |                   |            |            | 4           |       |            |              |
| 1982      | 78,996  |     | 112000            |            |            |             |       |            |              |
| 1983      | 79,756  |     | 112000            |            |            |             |       |            |              |
| 1984      | 88,420  | <   |                   |            | 1          |             |       |            |              |
| 1985      | 94,172  |     |                   | . /        |            |             |       |            |              |
| 1986      | 96,986  |     | 86000             | NI         |            | -           | -     |            |              |
| 1987      | 99,862  |     |                   | 1 2        |            |             |       |            |              |
| 1988      | 103,162 |     |                   |            |            |             |       |            |              |
| 1989      | 104,650 |     | 60000             |            |            |             |       | -          |              |
| 1990      | 139,529 |     | Cel .             | 100 Lan    | 1800       | 1987        | 2007  | San an     | 2013<br>2013 |
| 1991      | 128,443 |     |                   |            |            |             |       |            |              |
| 1992      | 122,973 |     |                   |            |            |             |       |            |              |
| 1993      | 125,037 |     |                   |            |            |             |       |            | 0            |
| 1994      | 133,816 |     | Mean              | Best Fi    | t 📕 🗌 N    | /in/Max     | Trend | Std.       | Dev.         |
| 1995      | 138,388 |     | Mean: 123,235     | Min: 70,96 | 8          | Max: 186,   | 542   | Std Dev: 3 | 9,076        |
| 1996      | 143.197 | ~   |                   |            |            |             |       |            |              |

Figure 4: Aggregation Results

To view statistical values overlaid on the data, select the <u>Graph Enhancement</u> <u>Controls</u> at the bottom of the graph. <u>Use the Display date spinner</u> or <u>select chart</u> <u>dates with the mouse</u> to examine the data.

### Aggregate by Area

Aggregate by Area sums the employment for each child member of an Area Group and creates a new employment series for the parent area, for a particular industry or group of industries.

1. Click the **Select aggregation type** drop-down menu and select **Aggregate by Area**.

2. Select a group from the **Select area groups** list. More than one Area Group can be selected.

3. Select either the **Industry** or **Industry Levels** radio button option. Select specific industries from the industry list, or select an industry level.

4. Click the **Aggregate Data** button.

### Aggregate by Time

Aggregation by Time will average monthly employment for a year to create annual employment for that year, for specific areas and industries.

1. Click **Aggregate by Time** from the **Select Aggregation Type** drop-down menu.

2. Select the areas to include in the aggregation.

3. Select the **Industry** or **Industry Levels** radio button. Select the industries to include.

4. Click the **Aggregate Data** button.

### **Related Content**

- Industry Mix (LT)
- Create a Long Term Industry Projection

# Reconcile

Use the **Reconcile** module to compare Summed Employment and Actual Employment for industries, areas, or times. Reconcile is a tool that helps you determine the consistency of industry employment in the database. It's important, for example, that employment in sub-state areas adds to employment at the state level for each industry, and that employment adds consistently across industry levels. It's also important that annual data be reflective of monthly data for the same industry and area. The Reconcile module provides diagnostic information for all of these scenarios.

The Reconcile module is available in the Short Term and Long Term applications. The same screen displays in each application. The Notebook is not available in the Long Term Reconcile module.

### **Screen Controls**

- Select reconciliation type drop-down box
- Select areas list box
- Select industries option group
  - o Industry radio button
  - o Industry Levels radio button
- Select an industry drop-down box
- Select industries to sum check boxes
- Select an industry level drop-down box
- Roll up to drop-down box
- Reconcile Data button
- Off radio button
- Absolute difference greater than radio button/spinner
- Percent difference great than radio button/spinner
- Date Range spinner
- View Results Data/Graph button

#### Reconcile

| Short Term 🗸 Long Term                                    | Occupational         | Report Manager  | Local Review | Getting Started | Settings | Exit         |
|---|----------------------|-----------------|--------------|-----------------|----------|--------------|
|   | New Reconciliation   | (ST)            |              |                 |          | <b>→</b> 1 × |
| Long Term Data  |                      |                 |              |                 |          |              |
| Manage Areas  | 1 Select recond      | ciliation type: | Ŷ            |                 |          |              |
| Industry Directory  |                      |                 |              |                 |          |              |
| Variable Directory  |                      |                 |              |                 |          |              |
| Import Text File<br>Import Spreadsheet                    |                      |                 |              |                 |          |              |
| Edit Employment Time Series<br>Edit Variables Time Series |                      |                 |              |                 |          |              |
| Aggregate   |                      |                 |              |                 |          |              |
| Reconcile   |                      |                 |              |                 |          |              |
| Create Balance Of Area                                    |                      |                 |              |                 |          |              |
| Review Employment   | Current reconciliati | ion parameter   |              |                 |          |              |
| Review Zero/Neg/Missing Values                            | No parameters sele   | ected yet!      |              |                 |          |              |
| Review Areas  |                      |                 |              |                 |          |              |
| Review Variables  |                      |                 |              |                 |          |              |
| Long-term industry Projections                            |                      |                 |              |                 |          |              |

Figure 1: Reconcile module

The Reconcile module uses numeric step indicators to guide the process. After Step 1 (select reconciliation type), the other steps will be enabled.

### **Reconcile by Industry**

Reconcile by Industry compares employment between various industry levels or groups of industries, for a particular area or group of areas.

- 1. Select **Reconcile by Industry** from the **Select reconciliation type** drop-down.
- 2. Select area(s) to be included in the reconciliation.

| Select areas:     Select industries: OIndustry Condustry Levels  Freedonia |
|--|
| 2 Select areas:     3 Select industries:     O Industry O Industry Levels  |
|  |
| Freedonia  |
|  |
| WIA 10   |
| WIA 11   |
| WIA 13   |
| WIA 14   |
| WIA 15   |
|  |
| Current reconciliation parameter   |
|  |
| Reconciling by industry  |
| Areas: Freedonia   |
|  |
|  |
| 4 Reconcile Data View Results Data/Graph                                   |

Figure 2: Select the area(s)

- 3. Select the **Industry** or **Industry Levels** radio button.
- If the **Industry** radio button is selected, the **Select an industry** drop-down menu becomes available. After selecting an industry, the **Select industries to sum** window will populate. Select the industries to include in the reconciliation from the **Select industries to sum** window and continue to the next step.
- Selecting the **Industry Levels** radio button will allow you to **Select an industry level** and **Roll up to** level from two drop-down menus. The selected Industry Level will choose the next highest level to **Roll up to** automatically, but higher roll-up levels can be selected from the menu.

| Select an industry:   | 334000 - Computer and Electronic Produ   | uct Manufacturing v                                  |
|---|--|--|
| Select industries to sum  | c  |  |
| <ul> <li>✓ 334100 - Corr</li> <li>✓ 334200 - Corr</li> <li>✓ 334300 - Aud</li> <li>✓ 334400 - Serr</li> <li>✓ 334500 - Nav</li> </ul> | ter and Electronic Product Manufacturing<br>nputer and Peripheral Equipment Manufactur<br>munications Equipment Manufacturing<br>lio and Video Equipment Manufacturing<br>inconductor and Other Electronic Componen<br>igational, Measuring, Electromedical, and Co-<br>nufacturing and Reproducing Magnetic and<br>Olndustry Olndustry Levels | nt Manufacturing<br>Introl Instruments Manufacturing |
| Select an industry level:   | ThreeDigit   | •<br>•   |
| Roll up to:   | Sector   | ÷  |
|   |  |  |

Figure 3: Select an Industry or Industry Levels

Each time selections are made, the Current reconciliation parameter window will change to reflect the modifications.

### 4. Click the Reconcile Data button.

5. Click the **View Results Data/Graph** button. The **Review reconciliation results** screen will open in a new window to show the results of the reconciliation. If other areas or industries were chosen, they will be available from the drop-down boxes.

### Reconcile

| filtering  |                                   |                      | Select an area:                         |                               |                        |                        |  |  |  |
|--|-----------------------------------|----------------------|---|-------------------------------|------------------------|------------------------|--|--|--|
| Off  |                                   |                      | Freedonia                               | Freedonia                     |                        |                        |  |  |  |
| Absolute difference g                              | Absolute difference greater than: |                      |   | Select a parent industry:     |                        |                        |  |  |  |
| Percent difference gre                             | ater than: 5                      | 3                    | 000000 - Total /                        | 000000 - Total All Industries |                        |                        |  |  |  |
| -  |                                   |                      |   |                               |                        |                        |  |  |  |
| Range: From 1972                                   |                                   | Date                 | x Summed Employment                     | Actual Employment             | Difference             | % Difference           |  |  |  |
| Range: From 1972                                   | To 20                             |                      |   | Actual Employment<br>1536000  | Difference<br>-1542059 | % Difference<br>-50.10 |  |  |  |
| Range: From 1972                                   | To 20                             | Date                 | Summed Employment                       |                               |                        |                        |  |  |  |
| Range: From 1972<br>Area<br>Freedonia              | To 20 Industry 000000             | Date 1972            | Summed Employment<br>3078059            | 1536000                       | -1542059               | -50.10                 |  |  |  |
| Range: From 1972<br>Area<br>Freedonia<br>Freedonia | To 20 Industry 000000 000000      | Date<br>1972<br>1973 | Summed Employment<br>3078059<br>3227097 | 1536000<br>1538240            | -1542059<br>-1688857   | -50.10                 |  |  |  |

Figure 4: Review reconciliation results

Construction of the second sec

### **Reconcile by Area**

Reconcile by Area compares employment in the members of an Area Group to the employment in the parent area for a particular industry or industries.

- 1. Select Reconcile by Area from the Select reconciliation type drop-down.
- 2. Select area groups to be included in the reconciliation.
- 3. Click a **Select Industries** radio button.
- 4. Click the **Reconcile Data** button.
- 5. Click the **View Results Data/Graph** button. The **Review reconciliation results** screen will display the results of the reconciliation.

### **Reconcile by Time**

Reconcile by Time compares the average monthly employment for a year to the annual employment for that year, for specific areas and industries.

1. Select Reconcile by Time from the Select reconciliation type drop-down.

- 2. Select area(s) to be included in the reconciliation.
- 3. Click a **Select industries** radio button and make your selections.

4. Click the **Reconcile Data** Button. The **Review reconciliation results** screen will activate to show the results of the reconciliation.

### **Related Content**

• Industry Mix (LT)

### **Create Balance of Area**

**Create Balance of Area** creates a new area consisting of all employment in a parent area that does not belong to the child members of the area group. For example, if a state is projecting employment in metropolitan statistical areas (MSAs), a state's balance of area would contain the remainder of the employment in the state that lies outside the MSAs. A Balance of Area is also known as a Balance of State (BOS).

The Create Balance of Area module is available in the Short Term and Long Term applications. The same screen displays in each application. The Notebook is not available in the Long Term Create Balance of Area module.

### **Screen Controls**

- Select an Area Group down-down menu
- Provide a Name input field
- Area Code input field
- Process button

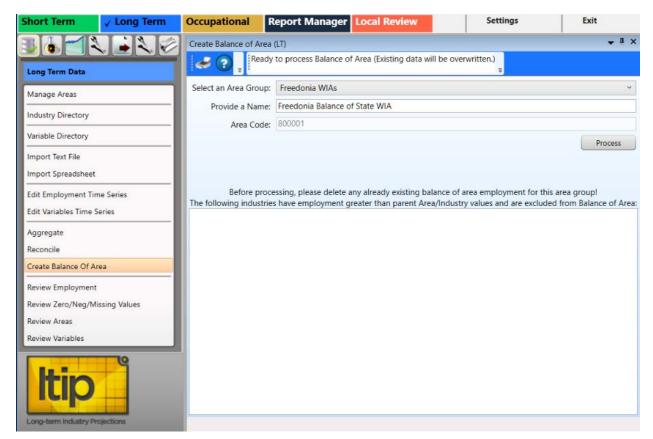


Figure 1: Create Balance of Area module, docked

### Create a Balance of Area

1. Click the **Create Balance of Area** menu option. The **Create Balance of Area** screen will open in an undocked window.

- 2. Select an Area Group from the drop-down menu.
- 3. Type a name for the new area in the **Provide a Name** input field.

4. Type a valid **Area Code** into the input field. The area code must be 6 digits in length. The **Process** button will be enabled.

| Create Balance of Area | (LT) 🗸 में 🗙   |
|------------------------|--|
| Ready                  | to process Balance of Area (Existing data will be overwritten.)<br>=   |
| Select an Area Group:  | Freedonia WIAs ~   |
| Provide a Name:        | Freedonia Balance of State WIA   |
| Area Code:             | 800001   |
|                        | Process  |
|                        | ssing, please delete any already existing balance of area employment for this area group!<br>have employment greater than parent Area/Industry values and are excluded from Balance of Area: |
|                        |  |

Figure 2: Preliminary information entered, Process button unlocked

5. Click the **Process** button. For each industry at the parent area level (for example, the state level), the software sums all of the employment in the industry in each of the sub-state areas that already exist in the group. It then subtracts that sum from the state employment and creates a new industry record. The record is the difference between the state employment and the sum of the non-balance of area sub-state employment. This new employment value is assigned to the Balance of Area. The system will do this for each year when accessed through Long Term Industry Projections and for each month when accessed through Short Term Industry Projections.

When processing is finished, the BOS Processed dialog box will be displayed.



Figure 3: Number of records processed

6. Click **Yes** to save the Balance of Area records to the database. Click **No** to cancel the save.

After the values have been saved, any industries with sums greater that the group total (which have been excluded from the saved values) are noted in the bottom section of the **Create Balance of Area** screen.

| Select an Area Group: | Freedonia WIAs  |               |
|-----------------------|---|---------------|
| i ons sa una Mu       | Freedonia Balance of State WIA  |               |
|                       |   |               |
| Area Code:            | 800001  |               |
|                       |   | Process       |
|                       |   |               |
| Before proc           | essing, please delete any already existing balance of area employment for thi | s area group! |

Figure 4: All records saved; highlighted industries were not

You can view the new industry employment data in the Long Term <u>Edit</u> <u>Employment Time Series</u> module.

### **Related Content**

Manage Areas

# **Review Employment**

Use the **Review Employment** module to perform a quality check on the historical data series for industries in a specified area. With the quality check, you are able to identify potential problems in the data series.

Prerequisites that must be completed prior to using this module are:

- Run the area set up using the Manage Areas module.
- Import Monthly Employment Data using the <u>Import Text File</u> or <u>Import</u> <u>Spreadsheet</u> modules.

### Screen Controls

- Select an Area drop-down menu
- Show / print flagged records only check box
- Process Button
- Employment Table tab
- Time Series Endpoints tab
- Missing Industries tab
- Missing Industries (Substate) tab

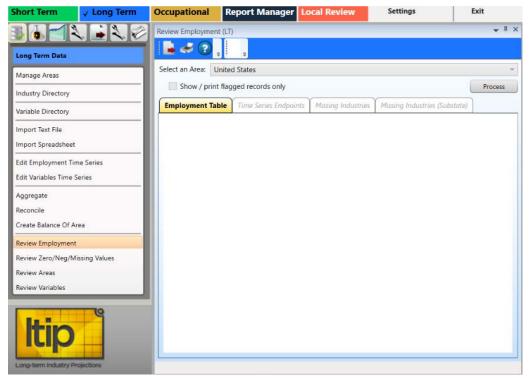


Figure 1: Review Employment module

### **Review Historical Data**

1. Select an Area from the drop-down menu.

2. Click the **Process** button. You only need to click **Process** once for each selected area; information on all tabs processes simultaneously. When processing is complete, industry information displays in the Employment Table, Time Series Endpoints, Missing Industries, and Missing Industries (Substate) tabs. Select the tabs to review the information.

| Review | Employm   | ent (LT)  |                            |                   |            |                |              | <b>, ,</b> ; |
|--------|-----------|-----------|----------------------------|-------------------|------------|----------------|--------------|--------------|
|        | # 🤉       |           | Ŧ                          |                   |            |                |              |              |
| Select | an Area:  | Freedo    | onia                       |                   |            |                |              | ~            |
|        | Show / pr | rint flag | ged records only           |                   |            |                | Proce        | 255          |
| Emp    | loyment   | Table     | Time Series Endpoints      | Missing Industrie | s Missing  | Industries (Su | ibstate)     |              |
|        | Code      | Tit       | le                         |                   | Start Date | End Date       | Observations | ^            |
|        | 333000    | Ma        | achinery Manufacturing     |                   | 1972       | 2008           | 37           |              |
|        | 334000    | Co        | mputer and Electronic Pr   | oduct Manufacturi | 1972       | 2008           | 37           |              |
|        | 335000    | Ele       | ectrical Equipment, Applia | nce, and Compone  | 1972       | 2008           | 37           |              |
|        | 336000    | Tra       | ansportation Equipment N   | Manufacturing     | 1972       | 2008           | 37           |              |
| - 0    | 337000    | Fu        | rniture and Related Produ  | uct Manufacturing | 1990       | 2008           | 19           |              |
|        | 339000    | Mi        | scellaneous Manufacturir   | ng                | 1972       | 2008           | 37           | 4            |

Figure 2: Displaying data and flagged records

Flagged records • contain data inconsistencies. To view only the flagged records, click the **Show / print flagged records only** check box. These records can be corrected using the Edit Employment Time Series module. Return to the **Review Employment** module and click **Process** to reprocess the data, or import any missing data and reprocess. Flags are used as a warning to identify potential problems, but do not necessarily need to be removed to continue.

To sort the fields, click the field heading. For example, to sort by Title, click the Title heading.

### View the Time Series Endpoints

1. Click the Time Series Endpoints tab.

### **Projections Suite**

| elec | t an Area: | Freed    | donia                        |               |                 |                    |               |               |    |
|------|------------|----------|------------------------------|---------------|-----------------|--------------------|---------------|---------------|----|
|      | ] Show / p | rint fla | gged records only            |               |                 |                    |               | Proce         | SS |
| Em   | ployment 1 | Table    | Time Series Endpoints        | Missing Indu  | stries Missing  | Industries (Substa | nte)          |               |    |
|      | Code       | Title    |                              |               | Area Start Date | U.S. Start Date    | Area End Date | U.S. End Date | 1  |
|      | 445000     | Food     | and Beverage Stores          |               | 1972            | 1972               | 2008          | 2024          |    |
|      | 311000     | Food     | Manufacturing                |               | 1972            | 1972               | 2008          | 2024          | -  |
|      | 722000     | Food     | Services and Drinking Place  | ces           | 1972            | 1972               | 2008          | 2024          |    |
|      | 525000     | Fund     | s, Trusts, and Other Financi | ial Vehicles  | 1972            | 1972               | 2008          | 2024          |    |
|      | 442000     | Furni    | ture and Home Furnishings    | s Stores      | 1972            | 1972               | 2008          | 2024          |    |
|      | 337000     | Furni    | ture and Related Product N   | Manufacturing | 1990            | 1972               | 2008          | 2024          |    |
|      | 447000     | Gaso     | line Stations                |               | 1972            | 1972               | 2008          | 2024          |    |

Figure 3: Time Series Endpoints tab

### **View Missing State Industries**

1. Click the **Missing Industries** tab. The Missing Industries tab will display a list of industries that are found in the U.S. but not in the selected area. This will help to identify potential problems.

|      | 2              | lagged records only                    | Missing Industria    | Missing           | Industrian /Fr | (heterta)    | Process |
|------|----------------|--|----------------------|-------------------|----------------|--------------|---------|
|      | loyment Table  |  | Missing Industries   |                   | Industries (Su | ibstate)     |         |
| he f | Code           | stries were found in the U.S.<br>Title | , but not in Freedon | ia.<br>Start Date | End Date       | Observations |         |
| _    | 000671         | Total Self Employed and Ur             | npaid Family Worke   | 2003              | 2022           | 13           |         |
|      | 006010         | Self Employed Workers, All             | Jobs                 | 2003              | 2024           | 14           |         |
|      | 007010         | Unpaid Family Workers, All             | Jobs                 | 2003              | 2022           | 13           |         |
|      | 101000         | Goods Producing                        |                      | 1972              | 2024           | 45           |         |
| here | e were no Free | donia missing from the U.S.            |                      |                   |                |              |         |
|      | Code           | Title                                  |                      | Start Date        | End Date       | Observations |         |

Figure 4: Missing Industries within the selected area

### **Display Missing Industries in a Sub-state Area**

1. **Select an Area** from the drop-down menu. The selected area must be a substate area or the Missing Industries (Substate) tab will not be available.

- 2. Click the **Process** button.
- 3. Click the Missing Industries (Substate) tab.

|       |               | edonia Balance of State Wl                  | A                     |              |              |              | Descent |
|-------|---------------|---|-----------------------|--------------|--------------|--------------|---------|
|       | oyment Table  | agged records only<br>Time Series Endpoints | Missing Industries    | Missing I    | ndustries (S | ubstate)     | Process |
| ne fo | llowing indus | tries were found in Freedo                  | nia, but not in Freed | onia Balance | of State WIA |              |         |
|       | Code          | Title                                       |                       | Start Date   | End Date     | Observations |         |
|       |               |   |                       |              |              |              |         |
|       | 236000        | Construction of Buildings                   |                       | 1972         | 2008         | 37           |         |

Figure 5: Missing Industries (Substate) tab

The Missing Industries (Substate) tab will display a list of industries found in the state, but not found in the selected sub-state area.

### **Related Content**

Edit Employment Time Series

# **Review Zero/Neg/Missing Values**

The **Review Zero/Negative/Missing Values** module allows the viewing of industries, in the selected area, which have employment levels that are zero, negative, or are missing values. This identifies errors in an employment data series.

Prerequisites that must be completed prior to using this module are:

- Run the area set up using the Manage Areas module.
- Import the Monthly Employment Data using the <u>Import Text File</u> or <u>Import</u> <u>Spreadsheet</u> modules.

### Screen Controls

- Select an area drop-down menu
- Beginning Date spinner
- Base Year field
- Show only exceptions from base period check box
- Process button

| Short Term 🗸 Long   | Term Occupational | Report Manager Local Review | Getting Started | Settings | Exit         |
|---|-------------------|-----------------------------|-----------------|----------|--------------|
|   | Review Zero/Neg/  | Missing Values (LT)         |                 |          | <b>→</b> # × |
| Long Term Data  |                   | -                           |                 |          |              |
| Manage Areas  | Select an area:   | Freedonia                   |                 |          | ÷            |
| Industry Directory  | Beginning Date:   | 1970 🖨 Base Year: 2018      |                 |          | Process      |
| Variable Directory  |                   | exceptions from base period |                 |          |              |
| Import Text File<br>Import Spreadsheet                    |                   |                             |                 |          |              |
| Edit Employment Time Series<br>Edit Variables Time Series |                   |                             |                 |          |              |
| Aggregate<br>Reconcile<br>Create Balance Of Area          |                   |                             |                 |          |              |
| Review Employment   |                   |                             |                 |          |              |
| Review Zero/Neg/Missing Value                             | rs                |                             |                 |          |              |
| Review Areas  |                   |                             |                 |          |              |
| Review Variables  |                   |                             |                 |          |              |
| Itip States   |                   |                             |                 |          |              |

Figure 1: Review Zero/Negative/Missing Values module

### **Review Zero/Negative/Missing Values**

1. Select an Area from the drop-down menu.

2. Click the **Beginning Month/Year** spinner to set the **Beginning Month and Year**.

In Long Term Projections, a Base Year field is available. The Base Year should be the projected year, minus 10 years. To change this setting, click Settings and go to the Long Term section. Change the Base Year and click Save Changes. Alternatively, double-click in the field and enter a new value.

3. Click the **Show only exceptions from base period** check box to filter results from the base period only.

4. Click the **Process** button. Industries with zero, negative, or missing values for the selected area and date are displayed.

|     | 🛓 🥪 (      | Neg/Missing Values (LT)            |            |   |    |
|-----|------------|------------------------------------|------------|---|----|
| Sel | ect an are | a: Freedonia                       |            |   | 3  |
| Beg | ginning D  |                                    |            | Proces  | is |
|     | Year       | Industry                           | Emp. Level | Exception Condition                             |    |
|     | 1973       | 541100 - Legal Services            | -24,004    | Employment Level is less than or equal to zero. |    |
|     | 1976       | 561400 - Business Support Services | -10,118    | Employment Level is less than or equal to zero. |    |
|     | 1993       | 491100 - Postal Service            | -42,761    | Employment Level is less than or equal to zero. |    |
|     | 2009       | 000000 - Total All Industries      |            | Observation not included in series.             |    |
|     | 2010       | 000000 - Total All Industries      |            | Observation not included in series.             |    |

Figure 2: Zero/Negative/Missing Values displayed

To edit employment data, use the <u>Edit Employment Time Series</u> module. Then come back to the **Review Zero/Neg/Missing Values** screen and click **Process** to reprocess the data. You can also import any missing data and reprocess.

# **Review Areas**

The **Review Areas** module compares Area Group information to identify potential problems found in the employment data series.

Prerequisites that must be completed prior to using this module are:

- Run the area setup and set up an Area Group using the <u>Manage Areas</u> module. Creating Area Groups allows for the comparison of information between a parent and child areas. This will help to determine if there are data problems.
- Import the Monthly Employment Data using the Import Text File or Import Spreadsheet screens.

The Review Areas module is available in the Short Term and Long Term applications. The same screen displays in each application. The Notebook is not available in the Long Term Review Areas module.

### **Screen Controls**

- Select an Area Group drop-down menu
- **Process** button
- Show / print flagged records only check box

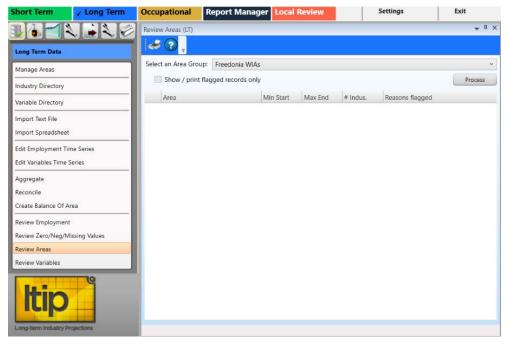


Figure 1: Review Areas module

### **Review Areas**

- 1. Select an Area Group.
- 2. Click the **Process** button. When processing is complete, the results display.

| Selec | t an Area Group: Freedonia WIAs   |           |         |          |   |
|-------|-----------------------------------|-----------|---------|----------|---|
|       | Show / print flagged records only |           |         |          | Process   |
|       | Area                              | Min Start | Max End | # Indus. | Reasons flagged                                     |
|       | Freedonia                         | 1972      | 2008    | 116      |   |
| 0     | Freedonia Balance of State WIA    | 1990      | 2008    | 115      | Child start year not equal to parent start year.    |
|       | Freedonia WIA 2                   | 1972      | 2008    | 116      |   |
| 0     | Freedonia WIA 3                   | 1990      | 2008    | 116      | Child start year not equal to parent start year.    |
| 0     | Freedonia WIA 4                   | 1990      | 2008    | 116      | Child start year not equal to parent<br>start year. |
| 0     | Freedonia WIA 5                   | 1990      | 2008    | 116      | Child start year not equal to parent start year.    |

Figure 2: Discrepancies are listed in the Reasons Flagged column

Review starting dates, ending dates, and number of observations to make certain they are what is expected. A flag **0** indicates there are issues with the record. In Figure 2, Freedonia WIA 3 contains more observations than the other areas. This information can help identify possible discrepancies.

Modify data as needed either using the <u>Preview Employment</u> module or by reimporting a corrected spreadsheet. When the number of industries is different in child areas than the parent area, the Review Employment (<u>ST</u> and <u>LT</u>) module can then be used to determine specifics of the discrepancies. Industries can be identified that are found in the parent area but not in a child area, and vice versa.

Once you have corrected any issues, return to this module and click **Process** to reprocess the data and verify there are no exceptions or that there is no concern for the exception.

## **Review Variables**

Use the **Review Variables** module to review area-specific variables for any inconsistencies in the data series.

Prerequisites that must be completed prior to using this module are:

- Run the area setup using the Manage Areas module.
- Import the Monthly Variable data using the <u>Import Spreadsheet</u> module.

### **Screen Controls**

- Select Area drop-down menu
- Show / print flagged records only check box
- Process button

| Short Term           | ✓ Long Term    | Occupational          | Report Manager Local Review                       | Getting Starte | d    | Settir | gs                  | Exit                  |
|----------------------|----------------|-----------------------|---|----------------|------|--------|---------------------|-----------------------|
|                      |                | Review Variables (LT) |   |                |      |        |                     | <b>•</b> <sup>1</sup> |
| Long Term Data       |                | et ? .                |   |                |      |        |                     |                       |
| Manage Areas         |                | Select Area: Unite    | d States  |                |      |        |                     |                       |
| Industry Directory   |                | Show / print          | lagged records only                               |                |      |        |                     | Process               |
| Variable Directory   |                | Variable              |   | Begins         | Ends | # Obs. | Reasons flagged     |                       |
|                      |                | Annual Percer         | t Change of Real Disposable Income                | 1970           | 2024 | 46     |                     |                       |
| Import Text File     |                | Annual Percer         | t Change of Real GDP                              | 1970           | 2024 | 46     |                     |                       |
| Import Spreadsheet   |                | Broad nomina          | I trade-weighted foreign exchange value of the    | US: 1973       | 2024 | 43     | Invalid observation | on count.             |
| Edit Employment Ti   | me Series      | Capacity Utiliz       | ation Rate, Manufacturing (%)                     | 1970           | 2024 | 46     |                     |                       |
| Edit Variables Time  | Series         | Compensation          | per Hour, Private Nonfarm Business (\$)           | 1970           | 2024 | 46     |                     |                       |
| Aggregate            |                | Consumption           | of Housing (bil of chained 2009 \$)               | 1970           | 2024 | 46     |                     |                       |
| Reconcile            |                | Consumption           | of Motor Vehicles and Parts (bil of chained 2009  | \$) 1970       | 2024 | 46     |                     |                       |
| Create Balance Of A  | vrea           | Consumption           | of Other Durable Goods (Total Dur ex. MV & Par    | ts) 1970       | 2024 | 46     |                     |                       |
| Review Employmen     | t              | Employment (          | non-agricultural establishment in millions)       | 1970           | 2024 | 46     |                     |                       |
| Review Zero/Neg/M    | lissing Values | Exports of Go         | ods (bil of chained 2009 \$)                      | 1970           | 2024 | 46     |                     |                       |
| Review Areas         |                | Exports of Go         | ods and Services (bil of chained 2009 \$)         | 1970           | 2024 | 46     |                     |                       |
| Review Variables     |                | Housing Start         | s (thous. units)                                  | 1970           | 2024 | 46     |                     |                       |
|                      | P              | Imports of Go         | ods (bil of chained 2009 \$)                      | 1970           | 2024 | 46     |                     |                       |
| Itin                 |                | Investment in         | Equipment (bil of chained 2009 \$)                | 1970           | 2024 | 46     |                     |                       |
| IUP                  |                | Investment in         | Intellectual Property Products (bil of chained 20 | 09 \$ 1970     | 2024 | 46     |                     |                       |
| Long-term industry P |                |                       |   |                |      |        |                     |                       |

Figure 1: Review Variables module

### **Review Area-Specific Variables**

1. Select Area from the drop-down menu.

2. Click **Process**. Variables for the selected area display. Flagged records **0** contain data inconsistencies and their discrepancies listed in the **Reasons flagged** column.

To view only flagged records, click the **Show / print flagged records only** check box.

### **Related Content**

• Dummy Variables (LT)

# Long Term Analysis Menu Items

### Long Term Analysis Introduction

The **Long Term Analysis** group menu allows the analyzing of data for industry and employment statistical reports.

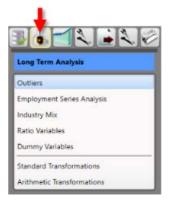


Figure 1: Long Term Analysis group menu

The Long Term Analysis group menu contains the following selections:

- Outliers
- Employment Series Analysis
- Industry Mix
- Ratio Variables
- Dummy Variables
- <u>Standard Transformations</u>
- Arithmetic Transformations

# Outliers

**Outliers** are data that deviate from normal seasonal fluctuations. An outlier is a point in a time series that has a value different enough from the points immediately surrounding it to raise questions about that point's validity.

Outliers may occur for several reasons:

- Errors in the data.
- Very small data values causing relative fluctuations.
- Economic upturns or downturns reflected in employment values rising or falling suddenly.

It is the analyst's responsibility to decide the cause of a particular outlier's presence in an employment series. The software cannot make that decision. However, the Outlier module provides the tools to search for possible outliers and to suggest possible alternative values.

The Outlier module is duplicated in the Short and Long Term applications. The only difference is Short Term displays monthly data in addition to yearly data. The Long Term Outliers module will calculate yearly data only.

### **Screen Controls**

- Settings tab
  - Select Areas drop-down
  - Analyze All Areas check box
  - Three times the interquartile range or greater radio button
  - Two standard deviations from the differenced mean or greater radio button
  - Absolute magnitude difference of 1200 or greater radio button
  - Top 100 by absolute differenced from the differenced median radio button
- Time Series Plot tab
  - See the <u>Time Series Plot Tab</u> section
- Transformed Time Series Plot tab
  - See the <u>Transformed Time Series Plot Tab</u> section
- What's an outlier button
- Change Default Outlier Magnitude button
- Change Default Outlier Count button
- Find Outliers button

### **Projections Suite**

| Short Term           | ✓ Long Term | Occupational             | Report Manager  | Local Review          | Settings          | Exit             |
|----------------------|-------------|--------------------------|---|-----------------------|-------------------|------------------|
| Long Term Analysis   |             | Outliers (LT)            | Ţ   |                       |                   | <b>↓</b> 1 ×     |
| Outliers             |             | Settings Tin             | ne Series Plot Transformed  | Time Series Plot      |                   |                  |
| Employment Series A  | Analysis    | Select Areas:            | Freedonia   | v                     | Analyze All Areas |                  |
| Ratio Variables      |             | Show Outlier             | \$  |                       | What's an         | outlier?         |
| Dummy Variables      |             | O Three time             | s the interquartile range or  | greater.              |                   |                  |
| Standard Transforma  |             | Two stands               | ard deviations from the diffe   | renced mean or greate | er.               |                  |
| Arithmetic Transform | nations     | O Absolute n             | nagnitude difference of 1200  | 0 or greater          | Change Default Ou | utlier Magnitude |
| <b>Itip</b>          | ojections   | Top 100 by Find Outliers | v absolute difference from the second sec | e differenced median  | Change Default    | Outlier Count    |

Figure 1: Outliers module

### **Prepare Outlier Processing**

1. Select an area from the **Select Areas** drop-down menu, or check **Analyze All Areas** box.

2. Select a **Show Outliers** radio button.

To display the Outlier Detection Methodologies explanation, click the **What's an outlier** button.

Outliers to show include:

- Three times the interquartile range or greater.
  - This option calculates quartiles for the differenced series at the 25th, 50th, and 75th percentile. The difference between the 75th and 25th percentile is called the interquartile range. The system flags any industries with points on the differenced series that are more than three times the interquartile range, above the 75th percentile or below the 25th percentile.
- Two standard deviations from the differenced mean or greater.
  - This calculates the standard deviation from the mean of the differenced series, then flags any industries with points on the differenced series that are more than two standard deviations above or below the mean.
- Absolute magnitude difference of 1200 or greater.
  - This flags any industries with points on the differenced series that have an absolute value above a specific setting. The default magnitude to compare against is 1,200.

Click the **Change Default Outlier Magnitude** button to set a different absolute magnitude difference.

- •Top 100 by absolute difference from the differenced mean.
  - This ranks all differenced points for all industries by the absolute value of their differences from the median of the differenced series, then flags any industries that have points in the top portion of the list. By default, the top 100 points measured by absolute difference are selected.

Click the **Change Default Outlier Count** button to set a different number of points to return.

3. Click the **Find Outliers** button. When the outlier calculations are complete, the view will be switched to the **Time Series Plot** tab to display the results.

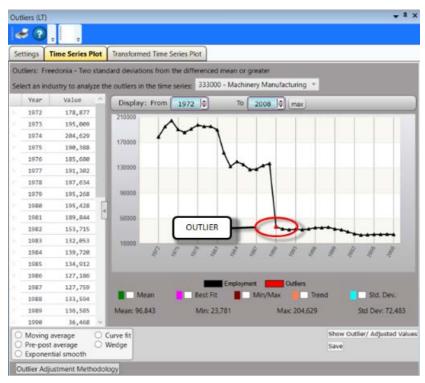


Figure 2: The Time Series Plot tab displays

Red dots indicate the calculated locations of outliers. If there are no outliers within the chosen criteria, the Time Series Plot tab will not display.

The **Transformed Time Series Plot** tab will also be unlocked after clicking the **Find Outliers** button:

### **Related Content**

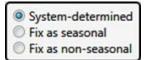
- Time Series Plot Tab
- Transformed Time Series Plot Tab

## **Time Series Plot Tab**

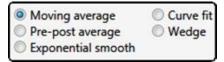
The Time Series Plot tab displays the outlier information you initially selected in the Outlier module. At the top of the screen, the area and type of outlier is displayed.

### **Screen Controls**

- Select an industry drop-down menu
- **Display date** spinner
  - Max button
- Graph Enhancement Controls



- System-determined radio button
- Fix as seasonal radio button (selecting this option will unlock the Seasonality Plot tab)
- Fix as non-seasonal radio button



- Adjustment Options
  - Moving average radio button This option takes the average of the preceding three months (default) as the new value for an outlier point. It will display a green dot on the graph as the suggested value.
    - Select number of months (or years in Long Term) drop-down
  - Pre-post average radio button This option averages the values of the points immediately before and after the outlier points.
  - Exponential smooth radio button This option displays the <u>R-Squared</u> value of the smoothing equation, which can help determine the validity of the adjusted values.
  - Curve fit radio button This option displays the R-Squared value for use in fitting a first-degree linear equation to the time series or a seconddegree polynomial equation.
    - Select degree of equation drop-down
  - Wedge radio button This option requires two outlier points for calculation. The system draws a straight line between the point immediately before the first outlier and immediately after the last outlier. This causes the interpolation of the outlier points as well as the intermediate values.
    - Start point (anchor) date spinner
    - End point (value) date spinner

**Projections Suite** 

- Show Outlier/ Adjusted Values button
- **Outlier Adjustment Methodology** button opens a document which explains the moving average, pre-post average, exponential smooth, curve fit, and wedge methodologies/adjustments in more detail.
- **Save** button This button replaces the outlier values with new values, based on the methodology chosen.

### Configure Outlier Data on the Time Series Plot Tab

1. Select an industry from the **Select an industry to analyze the outliers in the time series** drop-down menu.

2. Check one or more of the Graph Enhancement Controls, if desired.

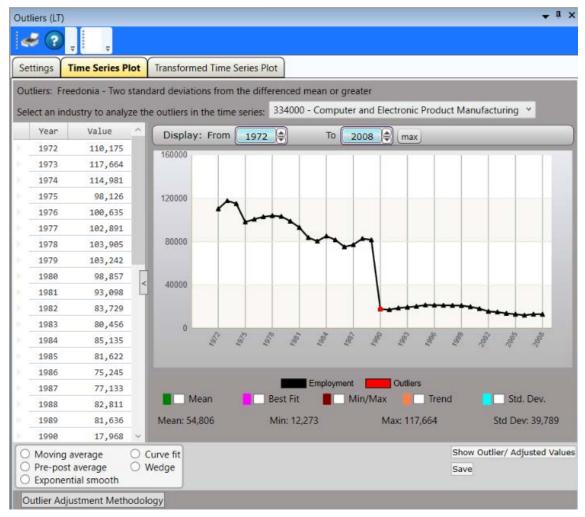


Figure 1: Time Series Plot tab with the Trend Graph Enhancement Control

3. Set the time frame using the **Display date** spinner. Years are available in Long Term.

• Click the Max button to automatically set the longest time frame possible. It is also possible to <u>select chart dates with the mouse</u> to examine them in greater detail.

4. When choosing either the **Fix As Seasonal** or **Fix As Non-Seasonal** radio buttons, a dialog box will be displayed asking if the outlier points for this industry should be recalculated or not. Select the appropriate response.

5. Select an **Adjustment Option** radio button (if desired).

6. Click the **Show Outlier/Adjusted Values** button to view detailed information about the chosen industry. The outlier values will be opened in a new window:

| Date | Original Value | Adjusted Value | % Diff |
|------|----------------|----------------|--------|
| 1990 | 17,968         | 60,199         | 235.04 |
| 1991 | 17,326         | 38,763         | 123.73 |

Figure 2: Outlier/Adjusted Values with Wedge selected

7. Click the **Save** button.

Click the **Outlier Adjustment Methodology** button to view how the adjustments were calculated. The **Outlier Adjustment Methodologies** document will open in a new window.

### Edit the Data Grid

The data grid displays the data series dates and Values in a column to the left of the graph. To edit the data grid:

- 1. Highlight the row you want to adjust.
- 2. Right click and select Add, Edit, or Delete to adjust the values in the graph.

### **Related Content**

- Outliers
- <u>Transformed Time Series Plot Tab</u>

## **Transformed Time Series Plot Tab**

The **Transformed Time Series Plot** displays the outlier information you selected in the Outlier module. It graphs the differenced series and shows where differenced points lie outside the outlier definition. The Transformed Time Series Plot tab displays two red lines indicating the value based on the Show Outlier definition chosen on the Settings tab. Any points where two values rise well above or below the red line are marked as outlier points on the Time Series Plot tab.

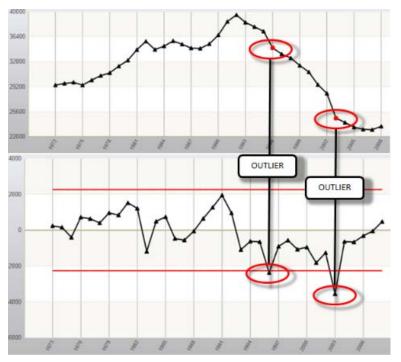


Figure 1: Time Series Plot (top) and Transformed Time Series Plot (bottom) outlier correlations

At the top of the page, the area and type of outlier is displayed. The date and Value display in the data grid on the left. The graph displays the industry data.

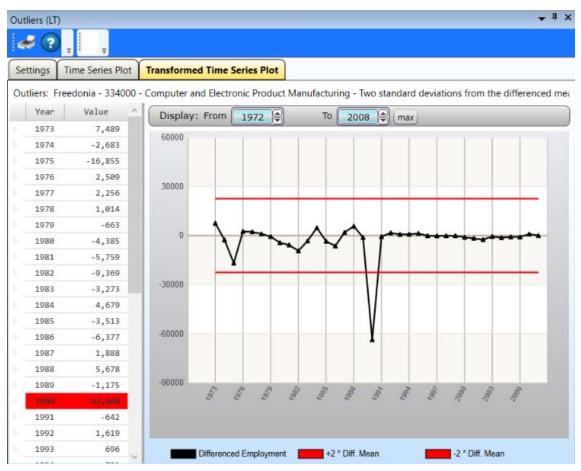


Figure 2: Transformed Time Series Plot tab

- 1. Set the time frame using the **Display** date spinners.
- Click the **max** button to automatically set the longest time frame possible.

POutliers are highlighted in red in the data grid on the left.

### **Related Content**

- Outliers
- <u>Time Series Plot Tab</u>

## **Employment Series Analysis**

The **Employment Series Analysis** module provides a statistical overview of historical employment for an industry and area, including location quotients, <u>R-Squared</u> values, and various graphical analyses.

### **Screen Controls**

- Select an Area drop-down menu
- Select an Industry drop-down menu
- Employment vs. Time tab
- Area/National Ratio tab
- Area vs. National Employment tab
   Show All button
  - Show All button
- **Display** date spinner
  - Max button
- Reference area control group (appears only when a sub-state area is selected)
  - **U.S.** radio button
  - o State radio button
- Batch button
- Graph Enhancement controls

| Short Term              | ✓ Long Term | Occupational  | Repo      | rt M     | anager Loc        | al Review  | v           | 🕜 Gettir  | g Started   |            | Settings |            | Ð       | cit          |
|-------------------------|-------------|---|-----------|----------|-------------------|------------|-------------|-----------|-------------|------------|----------|------------|---------|--------------|
| 3671                    |             | Employment Series   | Analysis  | (LT)     |                   |            |             |           |             |            |          |            |         | <b>→</b> # × |
| Long Term Analysis      |             | 2 % 🖌   |           |          |                   |            |             |           |             |            |          |            |         |              |
| Outliers                |             | Select an Area:   | Freedo    | inia     |                   |            |             |           |             |            |          |            |         | ÷            |
| Employment Series Ar    | alysis      | Select an Industry:   | 000000    | ) - Tota | al All Industries |            |             |           |             |            |          |            |         | ~            |
| Industry Mix            |             | Employment vs.  | Time      | Area/    | National Ratio    | Area vs. N | lational Er | nployment |             |            |          |            |         | Batch        |
| Ratio Variables         |             | Year  | /alue     | ~ ] (    | Display: Fro      | m 1972     |             | To        | 2008 🖨 (max |            |          |            |         |              |
| Dummy Variables         |             | 1972 8,0  | 535,850   |          | 13000000          |            |             |           |             | J          |          |            |         |              |
| C                       |             | 1973 8,1  | 398,190   |          | 1300000           |            |             |           |             |            |          |            |         |              |
| Standard Transformati   | 2220.       | 1974 9,0  | 951,020   |          | 11800000          |            |             |           |             |            |          | ~          | -       |              |
| Arithmetic Transforma   | tions       | 1975 8,1  | 844,020   |          | 1100000           |            |             |           |             |            |          | -          | -       |              |
|                         |             | 1976 9,0  | 903,852   |          | 10600000          |            |             |           |             | /          |          |            |         |              |
|                         |             | 1977 9,1  | 167,480   |          | 10600000          |            |             |           | 1           | ~          |          |            |         |              |
|                         |             | 1978 9,4  | 451,140   |          |                   |            | -           |           | 1           |            |          |            |         |              |
|                         |             | 1979 9,0  | 555,130   |          | 9400000           | -          | 1           | V         |             |            |          |            |         | 100 C        |
|                         |             | 1980 9,0  | 570,890   |          |                   | r          |             | 1         |             |            |          |            |         |              |
|                         |             | 1981 9,4  | 452,774   |          | 8200000           |            |             |           |             |            |          |            |         |              |
|                         |             | 1982 9,   | 134,702   |          |                   |            |             |           |             |            |          |            |         |              |
|                         |             | 1983 9,0  | 951,114   |          | 7000000           | 510        | 2/01        | Sec.      | 1 3         | 57         | 1 3      | (a)        | 2002    | 3            |
|                         |             | 1984 9,4  | 416,410   |          |                   | 6          | 101         | 2 E       | 2 2         | E.         | 10 10    | 10         | 196     | Sul.         |
|                         |             | 1985 9,   | 520,886   |          |                   |            |             |           |             |            |          |            |         |              |
|                         |             | 1986 9,   | 583,418   |          |                   | Mean       | Be          | est Fit   | Min/Max     | с 📕 🗌 Т    | rend     | Sto        | . Dev.  |              |
|                         |             | 1987 9,1  | 859,964   |          | Mean: 10,4        | 13 892     | Min         | 8,635.850 | Max         | 12.026.828 |          | Std Dev: 1 | 133 970 |              |
|                         | 9           | 1988 10,3   | 189,642   |          | income toy        |            |             |           |             |            |          |            |         |              |
| Long-term Industry Proj | ections     | Freedonia historical<br>United States histor<br>United States projec<br>Location quotient:<br>R-square: | ical grow | th rate  |                   | il)        |             |           |             |            |          |            |         |              |

Figure 1: Employment Series Analysis module

### **Analyze Employment Series**

1. Select an Area from the drop-down menu.

2. **Select an Industry**. The graph displays analysis for the industry, in the selected area.

3. Set the time frame by using the **Display** date spinners. You can <u>use the</u> <u>mouse to select chart dates</u>, to view the information in more detail. Use the <u>Graph</u> <u>Enhancement controls</u>, if desired.

• Click the Max button to view the maximum possible time frame.

Information displays below the graph. The bar contains:

- Historical Growth Rate of the selected area
- United States historical growth rate
- United States projected growth rate
- Location quotient
- <u>R-square</u>

4. Click the **Batch** button to export the Employment Series Analysis Batch. You can select to export by printed report or by Excel spreadsheet. This will produce a printed document or spreadsheet that lists industries, area historical growth rate, U.S. historical growth rate, U.S. projected growth rate, location quotient, and R-square values.

### **Area/National Ratio Tab**

1. Click the **Area/National Ratio** tab. The corresponding graph will display the ratio that the selected industry for the area represents when compared with the national employment for the selected industry.

| ele | ct an Area:  | Freed      | onia      |                 |       |          |          |           |      |       |        |       |       |      |          |         |       |
|-----|--------------|------------|-----------|-----------------|-------|----------|----------|-----------|------|-------|--------|-------|-------|------|----------|---------|-------|
| ele | ct an Indust | try: 00000 | 00 - Tota | I All Industrie | s     |          |          |           |      |       |        |       |       |      |          |         |       |
| Еп  | ployment     | vs. Time   | Area/N    | ational Ratio   | Ar    | ea vs. N | lational | Employr   | nent |       |        |       |       |      |          |         | Batch |
|     | Year         | Value      | - 1       | Display: F      | rom   | 1972     |          | То        | 200  | 3 🌲   | max    |       |       |      |          |         |       |
|     | 1972         | 0.1170     | - 1       | 0.16            |       | 17/2     | (*)      |           | 2000 |       | (max)  |       |       |      |          | -       |       |
|     | 1973         | 0.1157     |           | 0.16            |       |          |          |           |      |       |        |       |       |      |          |         |       |
|     | 1974         | 0.1155     |           |                 |       |          |          |           |      |       |        |       |       |      |          |         |       |
|     | 1975         | 0.1148     |           | 0.12            | -     | -        |          | _         | _    |       |        | _     | _     |      |          | _       |       |
|     | 1976         | 0.1133     |           |                 |       |          |          | -         | -    |       |        |       |       |      |          |         |       |
|     | 1977         | 0.1110     |           |                 |       |          |          |           |      | -     | 10     |       |       |      |          |         |       |
|     | 1978         | 0.1089     |           | 0.08            |       |          |          |           |      |       |        |       |       |      |          |         |       |
|     | 1979         | 0.1074     | -         |                 |       |          |          |           |      |       |        |       |       |      |          |         |       |
|     | 1980         | 0.1068     | 4         | 0.04            |       |          |          | _         | _    |       |        | _     | _     |      |          | _       |       |
|     | 1981         | 0.1035     |           |                 |       |          |          |           |      |       |        |       |       |      |          |         |       |
|     | 1982         | 0.1019     |           |                 |       |          |          |           |      |       |        |       |       |      |          |         |       |
|     | 1983         | 0.1003     |           | 0.00            | 2101  | 31.0     | 1970     | 30.1      | 344  | 1907  | 000    | 1003  | 3661  | 1000 | con-     | 2005    | 2000  |
|     | 1984         | 0.0996     | _         |                 | 16    | 10       | 10       | 2         | 15   | 1     | 1      | 10    | 2     | 10   | 2        | 2       | 10    |
|     | 1985         | 0.0976     |           |                 |       |          |          |           |      |       |        | -     |       |      |          |         |       |
|     | 1986         | 0.0963     |           | E.              | Mea   | an       |          | Best Fit  |      | _ Min | /Max   |       | Trend |      | L Sto    | d. Dev. |       |
|     | 1987         | 0.0966     | - 1       | Mean: 0         | .0984 |          | Mi       | 1: 0.0866 |      |       | Max: 0 | 0.117 |       | St   | d Dev: ( | 0.0091  |       |
| ١., | 1988         | 0.0967     | v         |                 |       |          |          |           |      |       |        |       |       |      |          |         |       |

Figure 2: Area/National Ratio tab

### Area vs. National Employment Tab

1. Click the **Area vs. National Employment** tab. The corresponding scatter plot displays the employment values for the selected industry/area, and the value for the national employment for the selected industry. The scatter plot will show the extent of correlation between points of the selected industry/area versus nation or state, depending on which options are selected. If no correlation exists between the points, the points appear randomly scattered on the coordinate plane. If a large correlation exists, the points concentrate on a straight line. The scatter plot will help visualize the trend to see if the area trend is similar to the national or state employment for the selected industry.

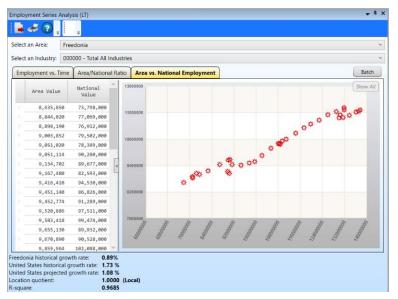


Figure 3: Area vs. National Employment tab

2. Hover your cursor over a point on the graph to display its corresponding values.



Figure 4: Hovering mouse on a plotted point

3. Click a point on the graph to display the data from the start of the value pairs to the point selected. Click the **Show All** button to display all of the data.

# **Industry Mix**

Use the **Industry Mix** module to view comparisons of the distribution of employment within an industry sector, for an area with employment in that same industry family, against the United States. The performance of this module depends on the presence of sector (2-digit) and/or four-digit historical data series in your database.

### **Screen Controls**

- Select an Area drop-down menu
- Select an Industry Level radio buttons
  - o 2-digit (Sector) radio button
  - o **3-digit** radio button
- Select a year spinner
- Select an Industry drop-down menu

| Short Term         | ✓ Long Term | Occupational R           | eport Manager Local Review              | Settings | Exit             |            |
|--------------------|-------------|--------------------------|---|----------|------------------|------------|
|                    | 2 3 2 6     | Industry Mix (LT)        |   |          | •                | <b>ļ</b> ; |
| Long Term Analy    | sis         | <b> </b>                 | =                                       |          |                  |            |
| Outliers           |             | Select an Area:          | Freedonia                               |          |                  | ~          |
| Employment Serie   | es Analysis | Select an Industry Level | : 🖲 2-digit (Sector) 🔘 3-digit          | Sele     | ect a year: 2008 | B          |
| Industry Mix       |             | Select an Industry:      | 480000 - Transportation and Warehousing |          |                  |            |
| Ratio Variables    |             | Index of dissimilarity:  | 0.085                                   |          |                  |            |
| Dummy Variables    |             | Industry                 |   | Area     | U.S.             |            |
| Standard Transfor  | mations     | 480000 - Transport       | ation and Warehousing                   | 225501   | 4508400          |            |
| Arithmetic Transfo | ormations   | 481000 - Air Tran        | sportation                              | 15.22%   | 10.88%           |            |
|                    |             | 482000 - Rail Trai       | nsportation                             | 0.00%    | 5.12%            |            |
|                    |             | 483000 - Water T         | ransportation                           | 0.93%    | 1.49%            |            |
|                    |             | 484000 - Truck Tr        | ansportation                            | 30.56%   | 30.81%           |            |
|                    |             | 485000 - Transit a       | and Ground Passenger Transportation     | 11.07%   | 9.39%            |            |
|                    |             | 486000 - Pipeline        | Transportation                          | 0.48%    | 0.92%            |            |
|                    | 0           | 487000 - Scenic a        | and Sightseeing Transportation          | 0.42%    | 0.62%            |            |
| Hino               |             | 488000 - Support         | t Activities for Transportation         | 14.37%   | 13.13%           |            |
|                    |             | 492000 - Courier         | s and Messengers                        | 8.21%    | 12.72%           |            |
| 19.10              |             | 493000 - Wareho          | using and Storage                       | 18.73%   | 14.91%           |            |
| Long-term Industry | Projections |                          |   |          |                  |            |

Figure 1: Industry Mix module

### **Compare the Distribution of Employment**

1. Select an Area from the drop-down menu.

2. **Select an Industry Level** radio button to select the NAICS level to use in the comparison.

**Projections Suite** 

- 2-digit (Sector) used to analyze three-digit industry breakdowns within sectors.
- 3-digit used to analyze four-digit industries within three-digit industries.
- 3. Select a year with the spinner.
- 4. Select an Industry from the drop-down menu.

The **Index of dissimilarity** displays above the table. This is a number between zero and one. A value of zero means that the industry breakdowns at the area and national level are identical. A value of one means they are completely dissimilar. In practice, a value of one is almost never achieved.

### **Related Content**

• <u>Reconcile</u>

# **Ratio Variables**

The **Ratio Variables** module allows the analysis of five preset variable and/or employment ratios used in OLS predefined models. The ratio is a historical time series created by dividing the data values in one variable by the values in a second variable (displayed in the Ratio Variable drop-down menu). This creates a new time series for which each data value is the ratio of two variable data values for equivalent years. For example, you could create a per capita income variable by dividing the variable for total income by the value for population. The predefined OLS regression models supplied with the Long Term Industry Projections application depend, in part, on system-defined ratio variables. This module allows you to review these variables.

Configuring your <u>Variable Directory</u> is a prerequisite to running the Ratio Variables module, to prevent error generation. You must set valid Population and Personal Income (Pop/PI) variables. If these variables are not set, the Ratio Variables module will not run correctly.

### **Screen Controls**

- Select an area drop-down menu
- Ratio Variable drop-down menu
- Grid column to graph drop-down menu
- Show Projected Value check box
- **Display** date spinners
  - Max button
- Graph Enhancement controls

| Short Term 🗸 Long Ter          | m Occupationa  | Report Ma                        | nager Local       | Review      | Getting Start        | ed               | Settings        | Exit                 |
|--------------------------------|--|----------------------------------|-------------------|-------------|----------------------|------------------|-----------------|----------------------|
|                                | Ratio Variables  | (LT)                             | -                 |             |                      |                  |                 | • 1                  |
| Long Term Analysis             | < ?  |                                  |                   |             |                      |                  |                 |                      |
| Outliers                       | Select an area   | Freedonia                        |                   | 3           |                      |                  |                 |                      |
| Employment Series Analysis     | Ratio Variable   | Area total employ                | ment / US total e | mployment ~ | Grid column to grap  | Area tota        | al employment v | Show projected value |
| Industry Mix                   |  | rea total US tot                 |                   | Display     | : From 1972          | то               | 2016 🖨 max      | 2                    |
| Ratio Variables                |  | mployment employm                |                   | 6100000     | 1972 -               | IN L             | 2016 (-) (max)  |                      |
| Dummy Variables                | 2008 5   | ,932,813 37,067,8                | 00 0.0433         | 0100000     |                      |                  |                 | nn                   |
| Standard Transformations       |  | ,962,169 37,599,6                |                   | 5720000     |                      |                  | 1               |                      |
| Standard Transformations       |  | ,915,681 36,086,0                |                   | 5340000     |                      |                  |                 |                      |
| Arithmetic Transformations     | 2005 5   | ,840,660 33,703,6                | 00 0.0437         | -           |                      |                  | ~               |                      |
|                                | 2004 5   | ,792,442 31,435,6                | 00 0.0441         | < 4960000   | -                    | 1                |                 |                      |
|                                | 2003 5   | ,785,866 29,999,6                | 00 0.0445         | 4580000     | . /                  | V                |                 |                      |
|                                | 2002 5   | ,852,3 <mark>4</mark> 2 30,341,0 | 00 0.0449         |             | $\sim$               |                  |                 |                      |
|                                | 2001 5   | ,967,548 31,826,6                | 00 0.0453         | 4200000     | 1002<br>1002<br>1002 |                  | 98 98 98        | and a second         |
|                                | 2000 6   | ,013,414 31,785,6                | 00 0.0456         |             |                      | - 18 - 18 -<br>1 |                 |                      |
| 9                              | 1999 5   | ,925,597 28,993,0                | 00 0.0459         |             |                      | Area to          | tal employment  |                      |
| tio                            | 1998 5   | ,855,426 25,938,6                |                   | Mea         | n 🛛 🚺 Best Fit       | M                | lin/Max 📕 🗌 Ti  | rend 🛛 📘 🗔 Std. Dev. |
|                                | i internet and a second s | ,731,310 22,776,0                |                   | And South   |                      |                  |                 |                      |
| 19.19                          |  | 642,305 19,708,6                 |                   |             |                      |                  |                 |                      |
| Long-term Industry Projections | 1000 0   | EEO 030 17 300 0                 | 00 0.0474         |             |                      |                  |                 |                      |

Figure 1: Ratio Variables module

**Projections Suite** 

### **View Ratio Variables**

- 1. Select an area from the drop-down menu.
- 2. Select a Ratio Variable. The options are:
- Area total employment / US total employment
- Area population / US population
- Area personal income / US personal income
- US industry employment / US total employment
- US industry employment / US population

3. Select a **Grid column to graph** from the drop-down menu. This will alternate the metric used on the y-axis of the graph.

4. Select a time frame using the **Display** date spinners. Selecting a value for an area, Ratio Variable (and optionally, Select an Industry), Grid column to graph, and time frame displays their data in the chart.

• Click the **Max** button to restore the full range of the graph.

5. Click the **Show projected value** check box to include projected values in the chart and data grid.

6. Utilize the Graph Enhancement controls, if desired.

### **Edit Ratio Variables**

- 1. **Right click** the table on the left to open a context menu.
- Add values by selecting **Add** from the context menu. Type the values and press **Enter** to save them. Right click to **Cancel Add**.
- Edit values by selecting **Edit**. All fields are able to be edited except for the Ratio field.
- Delete a value by selecting **Delete**.

### **Related Content**

Variable Directory

# **Dummy Variables**

Use the **Dummy Variables** module to create, modify, or delete dummy variables. Dummy Variables are used to compensate for unusual events that affect an historical series.

Dummy variables are used when there is a major discontinuity in a data series. For example, if there were a coding change at a specific time, the dummy variable would represent the change in that point in time. Create dummy variables to represent key events at a point in time or to represent a series of data points for a specific period. For example, an analyst may want to contrast differences in the economy after a new tax law was passed, during hurricane recovery efforts, or after a major business center was built in an MSA. Dummy variables are available for use by some models to affect the projected values for industries.

The LTIP application includes a dummy variable to distinguish a 1990 break in the Industry Employment Time Series, resulting from the conversion from SIC to NAICS.

### **Screen Controls**

- Associated Area drop-down
- Select Variable drop-down
- Add button
- **Delete** button
- Save button
- Cancel button
- Date spinners
- Add Values button
- Add Projected button
- Add Custom button
- **ON** button
- **OFF** button
- All ON button
- All OFF button
- **Remove Value** button

| Short Term                         | ✓ Long Term | Occupational                         | Report Manager Local Review   | Settings                 | Exit         |
|------------------------------------|-------------|--------------------------------------|---|--------------------------|--------------|
| Long Term Analys                   |             | Dummy Variables                      | (LT)  |                          | <b>↓</b> # × |
| Outliers                           |             | Associated Area:<br>Select Variable: | United States [Select one]  | ~ Add                    | Delete       |
| Employment Series                  | s Analysis  |                                      | feering and   | Save                     | Cancel       |
| Ratio Variables<br>Dummy Variables |             |                                      | Select an existing variable to edit or click<br>From 1970 To 2016         |                          |              |
| Standard Transform                 |             | Add Values                           | To change values, select rows and then cli<br>Add Projected Add Custom ON | ick 'ON' or 'OFF' button | Remove Value |
| Long-term industry                 | Projections |                                      |   |                          |              |

Figure 1: Dummy Variables module

#### **View Variable Values**

1. Select an area from the **Associated Area** drop-down menu.

2. Select a variable from the **Select Variable** drop-down menu. The values associated with that variable will be displayed.

3. Click the **Wrap mode** check box to view all the variable values in wrap mode. Wrap mode lists the values in rows and columns, instead of a single column.

#### Add a New Variable

1. Select an area you want to add the variable to from the **Associated Area** dropdown.

2. Click the **Add** button next to the Select Variables drop-down menu. The **Annual Dummy Variable** dialog box will be displayed.

3. Type a descriptive name for the new dummy variable.

4. Click **OK**. The new variable will be displayed in the **Select Variable** drop-down menu.

| Dummy Variables  | (LT)          |    |      | • ª ×  |
|------------------|---------------|----|------|--------|
| 2                |               |    |      |        |
| Associated Area: | United States | 3. |      |        |
| Select Variable: | Test Variable | *  | Add  | Delete |
|                  |               |    | Save | Cancel |

Figure 2: The new variable (Test Variable) displays

5. Set the time frame using the **date spinners**. Click the **Max** button to automatically set the longest time frame possible.

6. Click the **Add Values** button. A list of zero value variables will be added, reflecting the dates chosen with the date spinners.

#### Change Variable Values

1. Select the **Year** to change from the list of values.

- Click the **ON** button to turn the variable on for that year. On values indicate the period of the key event.
- Click the **All ON** button to turn the variable on for all years.
- Click the **OFF** button to turn the variable off for the selected year.
- Click the **All OFF** button to turn the variable off for all years.

| Add V | To change values, select rows and then click 'ON' or 'OFF' button           Add Values         Add Projected         Add Custom         ON         OFF         All OFF         Remove Value |        |        |        |        |  |  |  |  |
|-------|---|--------|--------|--------|--------|--|--|--|--|
|       | 1995 0  | 1996 0 | 1997 0 | 1998 0 | 1999 0 |  |  |  |  |
|       | 2000 0  | 2001 1 | 2002 0 | 2003 1 | 2004 0 |  |  |  |  |
|       | 2005 0  | 2006 0 | 2007 1 | 2008 0 | 2009 0 |  |  |  |  |
|       | 2010 0  | 2011 0 | 2012 0 | 2013 0 | 2014 0 |  |  |  |  |
|       | 2015 1  | 2016 0 |        |        |        |  |  |  |  |

Figure 3: OFF values are blue, ON values are green

Multiple values can be selected at once. For assistance with selecting multiple variables at a time, click <u>here</u>.

2. When you are finished changing the variable's values, click the **Save** button. Click **Cancel** to cancel the creation of the dummy variable.

#### Add a Projected Value

1. Click the **Add Projected** button. A value will be added which corresponds to the value selected in the Settings menu, under the Long Term settings.

| 2010 0 | 2011 0 | 2012 0 | 2013 0 | 2014 0 |
|--------|--------|--------|--------|--------|
| 2015 0 | 2016 0 | 2026 0 |        |        |

Figure 4: Projected value added

#### Add a Custom Value

To add a year not included in the dates initially created with the Add Values button:

1. Click the **Add Custom** button. The **Add Custom Date** dialog box will be displayed.

- 2. Type the **Year**.
- 3. Click **OK**. The date will be added to the values.

#### Remove a Variable Value

- 1. Select the value to delete.
- 2. Click the **Remove Value** button.

#### Delete a Variable

1. Select the Associated Area and Select Variable from the drop-down menus.

2. Click the **Delete** button. The Delete Annual Variable dialog box will be displayed.

3. Select **Yes** to delete the variable. Click **No** to keep the variable.

### **Related Content**

- OLS Regression Models
- Review Variables (LT)

# **Standard Transformations**

Use the **Standard Transformation** module to modify variables for a specific area and time frame. You can create a new variable from any kind of annual series in the system, from another variable, or from an employment series. This module allows the transformation of variables and/or employment in various industries.

# **Screen Controls**

- Select an Area drop-down menu
- Select a variable to transform drop-down menu
- Transform control group
  - Variable radio button
  - o Employment radio button
- Display date spinner
  - Max button
- Select a transformation control group
  - o Lag 1 radio button
  - Lag 2 radio button
  - o Log radio button
  - **Quadratic** radio button
  - o Reverse Quadratic radio button
- What would you like to graph? control group
  - Series check box
  - o Transformed series check box
- Save transformed series button
- Graph Enhancement controls

| Short Term 🗸 Long Term         | Occupational Report Manager Local Review        | Settings Exit                 |
|--------------------------------|---|-------------------------------|
|                                | Standard Variable Transformations (LT)          | + 1 ×                         |
| Long Term Analysis             |   |                               |
| Outliers                       | Select an area: Select a variable to transform: | Transform:                    |
| Employment Series Analysis     | United States                                   | ome   C Employment            |
| Industry Mix                   |   |                               |
| Ratio Variables                | Display: From 1970 - To 2018 - max              | Select a transformation:      |
| Dummy Variables                | 12  | O Lag 2                       |
| Standard Transformations       |   | O Log                         |
| Arithmetic Transformations     | 8   | O Quadratic                   |
|                                |   | O Reverse Quadratic           |
|                                |   | What would you like to graph? |
|                                |   | Series                        |
|                                | V Y Y Y   | Y Transformed series          |
|                                |   |                               |
|                                |   | Save transformed series       |
|                                |   |                               |
|                                |   |                               |
| 9                              | Original Series                                 |                               |
|                                | Mean Best Fit Min/Max Trend                     | Std. De                       |
|                                | Mean: 3 Min: -1 Max: 8                          | Std Dev:                      |
| Long-term Industry Projections |   |                               |

Figure 1: Standard Transformations module

#### **Modify Variables**

- 1. Select an area from drop-down menu.
- 2. Select a **Transform** radio button from the control group. There are two choices in the **Transform** radio button group:
- Variable
- Employment

The second drop-down menu will perform one of two functions, based on which Transform radio button choice is made. Selecting the **Variable** radio button causes the second drop-down menu to become a **Select a variable to transform** drop-down menu. Selecting the **Employment** radio button causes the second drop-down menu to become a **Select an Employment Series to transform** drop-down menu.

| Select a variable to transform:                 | Transform:              |
|---|-------------------------|
| Annual Percent Change of Real Disposable Income | Variable     Employment |
| Select an employment series to transform:       | Transform:              |
| 000000 - Total All Industries                   | Variable                |

Figure 2: Select an option from the Transform control group

For most non-US employment series, you will not have a projected value. OLS regression models need a projected value for each input variable.

3. After selecting a Transform radio button, either **Select a variable to transform** or **Select an employment series to transform** from the drop-down menu.

4. For the transformation to be valid, a time frame must be set by using the **Display** date spinners.

- Click the Max button to automatically set the longest time frame possible.
- Chart dates can be selected with the mouse to examine them in further detail.

By selecting an area, Variable or Employment Series, and time frame, the data will display in the graph:



Figure 3: Selected criteria are displayed in the graph

5. Use the Graph Enhancement Controls, if desired.

6. When selecting transformations, use the **What would you like to graph** control group to view the **Series**, **Transformed series**, or the two together.

### Select a Transformation

1. Select a transformation from the control group.

Transformation - Lag 1

• Moves the value from a particular year to the following year.

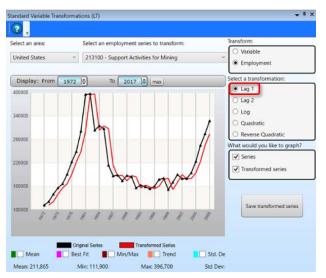


Figure 4: Employment lagging the original series by 1 year

#### Transformation - Lag 2

• Moves the value from a particular year forward two years.

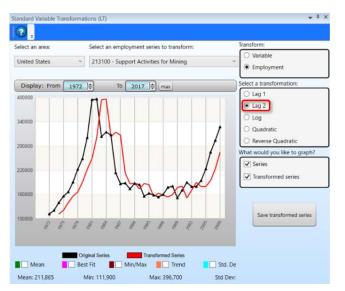


Figure 5: Employment lagging the original series by 2 years

The A lagged series is shortened by the amount of the lag.

# Transformation - Log

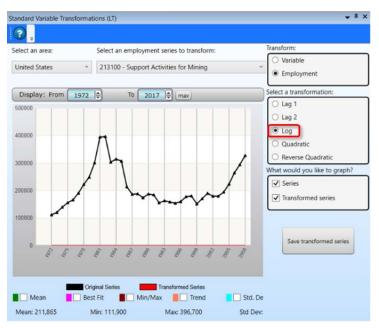


Figure 6: Employment Log transformation

# Transformation - Quadratic

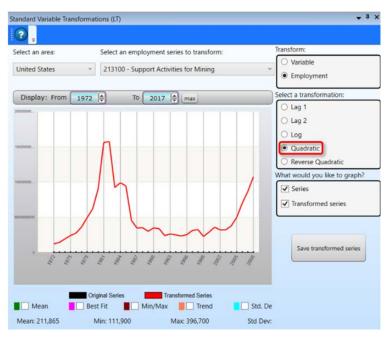


Figure 7: Employment Quadratic transformation

#### Transformation - Reverse Quadratic



Figure 8: Employment Reverse Quadratic transformation

#### Save the Transformation Series

1. When you are satisfied with the transformation, click the **Save Transformed Series** button. The **LTIP Message** dialog box will be displayed.

- 2. Either accept or change the name of the transformed variable.
- 3. Click **OK** to save the series. Click **Cancel** to discard the transformation.

#### **Related Content**

- Variable Directory
- Edit Variables Time Series
- <u>Review Variables</u>

# **Arithmetic Transformations**

Use the **Arithmetic Transformations** module to create new or artificial variables based on other variables or employment data used with <u>OLS</u> projections.

# **Screen Controls**

- Series 1 Selector drop-down menu
- Area 1 Selector drop-down menu
- Series 2 Selector drop-down menu
- Area 2 Selector drop-down menu
- Display date spinner
  - Max button
- Series 1 Type control group
  - o Variable radio button
  - Employment radio button
- Series 2 Type control group
  - Variable radio button
  - Employment radio button
- Arithmetic Process control group
  - Addition (+) radio button
  - Subtraction (-) radio button
  - Multiplication (x) radio button
  - Division (/) radio button
- What would you like to graph? control group
  - Line 1 (Black)
    - Series 1 radio button
    - Series 2 radio button
    - Transformed radio button
  - o Line 2 (Blue)
    - Series 1 radio button
    - Series 2 radio button
    - Transformed radio button
- Save transformed variable button
- Graph Enhancement Controls

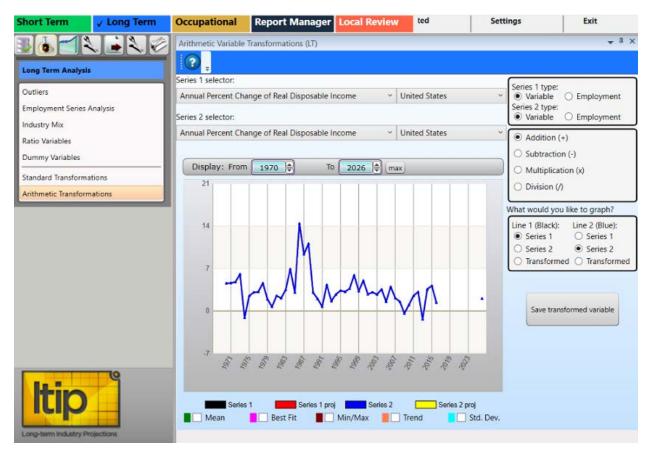


Figure 1: Arithmetic Transformations module

#### **Create Variables**

1. Select a **Series 1 type** (Variable or Employment) radio button. The Series 1 selector options change with the Series 1 type selected (see Figure 2).

- 2. Select an area from the Area 1 selector drop-down menu.
- 3. Select a series from the Series 1 selector drop-down menu.

4. Select a **Series 2** radio button. The Series 2 selector options change with the Series 2 type selected (see Figure 2).

| Series 1 selector:   |                               |  |
|--|-------------------------------|--|
| All Emp: ISP,Search Port & Data Proc Svs, Illinois (Thous) | <ul> <li>Freedonia</li> </ul> | Series 1 type:   |
| Series 2 selector:   |                               | <ul> <li>Variable O Employment<br/>Series 2 type:</li> </ul>             |
| All Emp: ISP,Search Port & Data Proc Svs, Illinois (Thous) | Freedonia                     | Variable O Employment  |
| Series 1 selector:   | Area:                         |  |
| 000000 - Total All Industries                              | <ul> <li>Freedonia</li> </ul> | Series 1 type:   |
| Series 2 selector:   | Area:                         | Variable      Employment     Series 2 type:     Variable      Employment |
| 000000 - Total All Industries                              |                               |  |

Figure 2: Series type selection options

- 5. Select an area from the Area 2 Selector drop-down menu.
- 6. Select a series from the Series 2 selector drop-down menu.

7. Select a time frame using the **Display** date spinner. When **Area** (1 and 2), **Series** (1 and 2), and the time frame are selected, their data will be displayed in the chart.

• Click the **Max** button to automatically set the longest time frame possible.

8. Use the <u>Graph Enhancement Controls</u>, if desired. These overlaid statistics only apply to the first series (the black line on the graph).

9. Select an option from the **Arithmetic Process** control group. The Arithmetic Process (Addition, Subtraction, etc.) determines the type of calculation used in the transformation.

10. Make radio button selections for Line 1 and Line 2 in the What would you like to graph control group. These selections assign the Series and/or Transformed Values to the black and blue chart lines.

#### Save Transformed Variable

1. Click the **Save transformed variable** button. An LTIP Message dialog box will be displayed.

2. Enter a descriptive name for the transformed variable.

3. Click **OK** to save the transformed variable. Click **Cancel** saving the transformed variable.

#### **Related Content**

- Variable Directory
- Edit Variables Time Series
- <u>Review Variables</u>

# Long Term Projections Menu Items

# Long Term Projections Introduction

The **Long Term Projections** group menu allows the projecting of annual historical employment into the future, for industry and employment statistical reports and for use in Occupational Projections. There are three main projection models in the Projections category. You can use any or all of them, and can run multiple models on an industry and save them.



Figure 1: Long Term Projections group menu

The Long Term Projections group menu contains the following selections:

- Shift Share
- Time Series
- OLS Regression Models
  - o Model Definition Tab
  - o Projection Results Tab
  - o Graphs/Tables Tab
- Batch processing
- Project Multiple Regions
  - o Industry View Tab
  - o Area View Tab
- <u>Summary</u>
- Delete Area Projections
- Delete Model
- Step Ahead

#### **Related Content**

• Create a Long Term Industry Projection

# **Shift Share**

Use the **Shift Share** module to compare different shift-share models to project specific industries and areas. Shift Share models differ in that they do not take a historical series into account. Shift Share uses one or two single points on one or more related industries series to generate a projection.

Shift share models depend on other time series being present besides the one being projected. These include the state Total All Industries series, the national industry series, and the national Total All Industry series. If any points needed for a formula are missing, the system displays an error message, the projected value displays as N/A, and the graph displays only the historical series without a projection.

# **Screen Controls**

- Select an industry drop-down menu
- Select an area drop-down menu
- Select a shift-share model drop-down menu
  - o Constant Share
    - Reference area control group
      - U.S. radio button
      - State radio button
      - Share field
      - Reset ratio button
  - o Constant Share of Aggregate Industry Employment
    - Aggregation level control group
      - Total radio button
      - Sector radio button
      - 3-Digit radio button
  - Employment-to-Population Ratio
  - Constant Location Quotient
  - o Implicit Shift-share
    - Reference area control group
      - U.S. radio button
      - State radio button
  - o Modified Implicit Shift-share

### Enter/change projected industry ratio button

- Classical Shift-share
- o Constant Regional Rate
- **Display** date spinner
  - Max button
- Save projection button
- Show saved projections button

• Show U.S. unemployment rate button

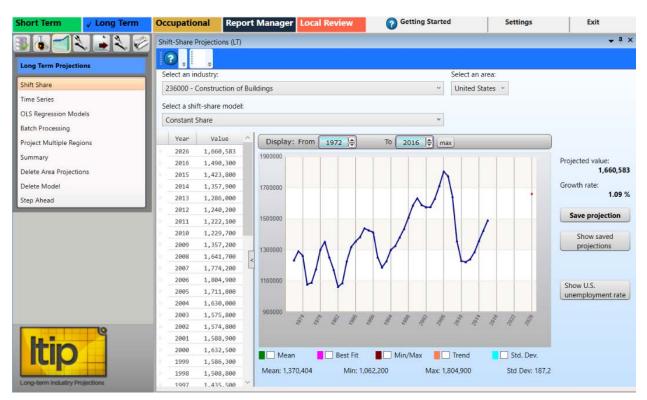


Figure 1: Shift Share module

#### **Use Shift-share Models**

- 1. Select an Area from the drop-down menu.
- 2. Select an industry.
- 3. Select a shift-share model from the drop-down menu. Options are:
- Constant Share
- Constant Share of Aggregate Industry Employment

If you select **Constant Share of Aggregate Industry Employment**, you can select an **Aggregation level** radio button. The selectable options are:

- Total
- Sector
- 3-Digit

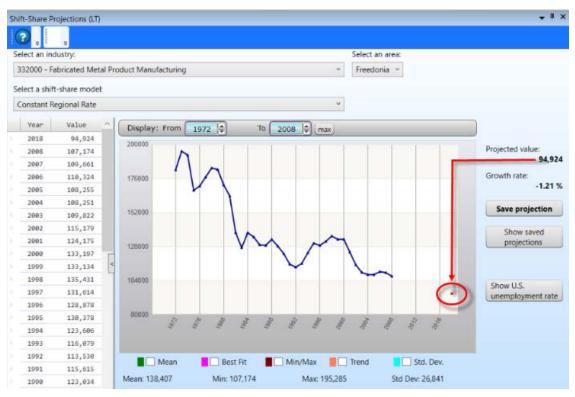
This model depends on there being a time series and projected value for an aggregate level to which the projected industry belongs. If the aggregate level series or projection does not exist, the projection cannot be calculated.

• Employment-to-Population Ratio. The area selected must have a population variable defined.

- Implicit Shift-share
- Modified Implicit Shift-share. Selecting Modified Implicit Shift-Share enables the **Enter/change projected industry** ratio button.
- Classical Shift-share. If you select Classical Shift-share, the Shift-Share Projections dialog box displays. Enter the Projected industry share as a number between 0 and 1, then click OK. The Projected ind. ratio entered displays to the right of the graph. Click Enter/change projected industry ratio to edit the value.
- Constant Regional Rate

If you select a sub-state area, the shift-share model options change. The Constant Share and Modified Implicit Shift-share models include a Reference area. Options are U.S. and State. If you choose State, you must have a statewide projected value for the industry in the employment table or the model will not run.

4. Select a time frame using the **Display** date spinner. By selecting an industry, area, shift-share model, and time frame, data is displayed in the chart. Note that the projected value changes when the date spinners are manipulated.



• Click the **Max** button to automatically set the longest time frame possible.

Figure 2: Data charted for the selected variables

The table and graph display the historical series along with the projected value. The projected point is shown on the graph in red (highlighted in Figure 2). The Projected value and Growth rate display to the right of the graph.

5. Use the Graph Enhancement Controls, if desired.

### **Display the Unemployment Rate**

To display the **U.S. Unemployment Rate**, click the **Show U.S. Unemployment Rate** button. This value is distributed with the Projections Suite software. On the U.S. Unemployment Rate window, you can view data for a specific time frame by manipulating the **Display** date spinner. The **Max** button sets the longest time frame possible.

#### **Save Projection**

To save projected data, click the **Save projection** button.

#### **Show Saved Projections**

To display saved projections, click the **Show Saved Projections** button. The saved projections will display in a separate window.

# **Time Series**

Use the **Time Series** module to set up projections for specific industries and areas. Time Series projections do not use any explanatory variables, nor any input other than the historical series. The historical series must be complete. If there are missing data points, you cannot calculate the projection.

#### **Screen Controls**

- Select an industry drop-down menu
- Select an area drop-down menu
- Select a time series model drop-down menu
- Display date spinner
  - Max button
- Save projection button
- Show saved projections button
- Graph Enhancement controls

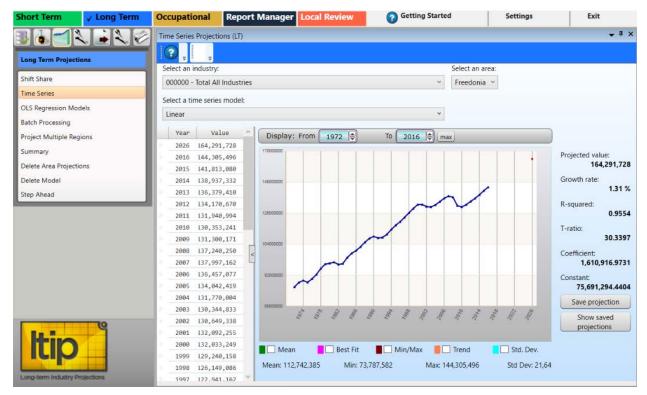


Figure 1: Time Series module

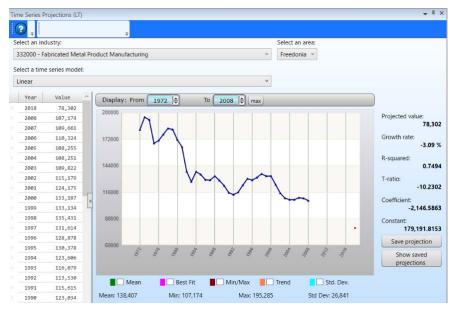
### **Display Time Series Models for Specific Industries and Areas**

1. Select an Area from the drop-down menu.

- 2. Select an Industry.
- 3. Select a Time Series Model. The options are:
- Linear
- Logarithmic calculates a regression equation based on the log of year rather than the year itself.
- Exponential (Semi-log) the inverse of the logarithmic model. It is based on exponentiation of the year, or conversely, the logarithm of the employment value.
- Polynomial attempts to fit a quadratic regression line to the historical series. The equation has two terms: a squared term and a linear term. Because of this, there are two Coefficients and two T-ratios in the explanatory statistics.

The Best Fit and Trend check boxes in the Graph Enhancement Controls calculate lines based on the Linear and Polynomial models. If you choose the Linear model then click Best Fit, the statistical line should line up with your projection. The same is true of the Polynomial model and the Trend Line.

4. <u>Manipulate the Display date spinners</u> to set the time frame. The associated data will be displayed in the chart. The Projected value, Growth rate, <u>R-squared</u>, T-ratio, Coefficient, and Constant statistics display to the right of the graph. If any data points are missing, the values to the right of the graph display as N/A and the graph displays only the historical series without a projection.



• Click the **Max** button to display the longest time frame possible.

Figure 2: Charted data for the selected variables

#### **Chart Enhancements**

In addition to the charted data, <u>Graph Enhancements Controls</u> can be overlaid on the chart. To display an enhancement, select its associated check box.

#### **Save Projections**

To save projected data, click the **Save Projection** button. The projected values are stored in the database along with the explanatory statistics. You can save as many projections for the same industry as you like.

### **Show Saved Projections**

To display the saved projections, click the **Show Saved Projections** button. The saved projections will be displayed in their own window:

| Saveo | d proj | ections for Fr | eedonia, 33 | 2000 - Fabricated Metal Product Manufacturing | × |
|-------|--------|----------------|-------------|---|---|
|       |        | Model          | Projection  |   |   |
|       |        | Linear         | 78,302      |   |   |
|       |        | Polynomial     | 129,490     |   |   |

Figure 3: Saved projections

# **OLS Regression Models**

Use the **Ordinary Least Squares (OLS) Regression Models** module to set up options for projecting different scenarios for specific industries, areas, and time frames. The result of the calculation is a regression equation that is used to project a value for the dependent variable, the industry historical series.

#### **Screen Controls**

- First year and Last year spinners
- Select an industry drop-down menu
- Select an area drop-down menu
- Model selection tab
  - **Export** model radio button
    - Export check boxes
  - Local model radio button
    - Local check boxes
  - User-defined model radio button
- Model definition tab
- Projection results tab
- Graphics/Tables tab
- Use dummy variable spinner
- Correction for serial correlation check box
- # of Theil-U forecast years input field
- Save Comments button

| Occupational         | Report Manager       | Local Review            | Getting Started      | Settings             | Exit                 |
|----------------------|----------------------|-------------------------|----------------------|----------------------|----------------------|
| OLS Projections (LT) | 1                    | 14                      |                      |                      | <b>↓</b> 1 ×         |
| 2,,                  |                      |                         |                      |                      |                      |
| First year: 1972     | Last year: 2010      |                         |                      |                      |                      |
| Select an industry:  |                      |                         |                      | Select an area:      |                      |
| 000000 - Total All   | Industries           |                         | ~                    | Freedonia            | ¥.                   |
| Model selection      | Model definition Pro | ojection results 🏹 Grap | hs/Tables            |                      |                      |
| ⊖ Export ⊖ I         | Local 🔘 User-defined | 8                       |                      |                      |                      |
|                      |                      |                         |                      |                      |                      |
|                      |                      |                         |                      |                      |                      |
|                      |                      |                         |                      |                      |                      |
|                      |                      |                         |                      |                      |                      |
|                      |                      |                         |                      |                      |                      |
|                      |                      |                         |                      |                      |                      |
| Use dummy va         | riable 1990          |                         |                      |                      |                      |
| Correction for s     |                      |                         |                      |                      |                      |
|                      |                      |                         |                      |                      |                      |
|                      | OLS Projections (LT  | OLS Projections (LT)    | OLS Projections (LT) | OLS Projections (LT) | OLS Projections (LT) |

Figure 1: OLS Regression Models module

#### **Set Up Options for Projections**

1. Select the **First year** and **Last year** for your time frame, using the date spinners.

- 2. Select an Industry from the drop-down menu.
- 3. Select an Area.

The Model selection, Model definition, Projection results, and Graphs/Tables tabs represent different stages of the model definition and projection process. The Projection results and Graphs/Tables tabs are inactive until you select or define a valid model.

4. On the **Model selection** tab, select the model type:

- Export
- Local
- User-defined models defined by selecting an Export or Local model and adding variables or other model options on the **Model definition** tab.

Tou can select any of the ten predefined OLS models in the system or any user-defined models that have been saved previously.

• Select a model by checking the listed boxes. When you select a model, the model definition and any saved comments display, the model is listed in the current model field, and the Projections results and Graphs/Tables tabs become active. You can enter new comments about the model you are using, then click **Save comments**.

| 000000 - Total All Industries  |  |
|--|--|
| Vodel selection Model definition Projection results Graphs/Tab   | Freedonia  |
| Export ● Local ○ User-defined      Local #1     Local #2     Local #3     Local #4     Local #5     Local #6 | Variables in Local #2:<br>US industry employment<br>Area personal income |

Figure 2: After the Local #2 option is checked, variables used in that selection are displayed

- Optionally, select **Use dummy variable** and select the **year** (a runtime option only).
- Select **Correction for serial correlation** for the model to <u>correct for a serial</u> <u>correlation</u>, if applicable.
- Optionally, enter a number for the **# of Theil-U forecast years**. The <u>Theil-U</u> forecast years default is 4.

5. Click the **Model Definition** tab or go directly to Projection results (if the tab is enabled).

# **Related Content**

- Model Definition Tab
- Projection Results Tab
- Graphs/Tables Tab
- Delete Model
- Dummy Variables

# **Model Definition Tab**

The Model Definition tab allows modifications to existing OLS models, or the definition of a model from scratch. When you select a model on the **Model selection** tab, the values display on the **Model definition** tab. You can add options to the model or click **Clear model settings** to clear the current selections.

#### **Screen Controls**

- Independent Variables check boxes
- Other Model Options check boxes
- Runtime Options control group
- Use an employment series as a variable button
- Save settings as user-defined model button
- Clear model settings button

| OLS Projections (LT)   | ▲ † ×  |
|--|--|
|  |  |
| First year: 1972 Last year: 2016 Current model: Local<br>Location quotient:  | #2<br>1.0000 Local   |
| Select an industry:  | Select an area:  |
| 000000 - Total All Industries  | <ul> <li>V United States</li> </ul>  |
| Model selection Model definition Projection results Graphs/Tables  |  |
| Select one or more independent variables:  | Other model options:   |
| Initial Claims     Govt: Total Expenditure (Thous.\$)     Govt: Total Revenue (Thous.\$)     Personal Income (Mil.\$)     Real Personal Income (Mil.Chn.2005\$)     Population (Thous)     Per Capita Personal Income (\$)     Real Per Capita Personal Income (\$)     Real Per Capita Disposable Income (\$)     Total Wages & Salaries (Mil.\$) | Ratio variables:  Area total employment/U.S. total employment Area population/U.S. population Area personal income/U.S. personal income U.S. industry employment/U.S. total employment U.S. industry employment/U.S. population U.S. industry employment/U.S. population U.S. advance of the second seco |
| Disposable Personal Income (Mil.\$) Real Disposable Personal Income (Mil.Chn.2005\$)   | Runtime options: Use dummy variable  |
| Employment series to be used as variables:   | Correction for serial correlation<br>4 # of Theil-U forecast years:  |
| Use an employment series as a variable   | 4 # 01 Heiro IDIECast years:   |
| Save settings as user-defined model Clear model settings   |  |

Figure 1: OLS Regression Models module, Model definition tab

### **Create or Customize a Model**

- 1. Select one or more independent variables.
- 2. Select Other model options such as:
- Ratio variables

• Runtime options

The **Use dummy variable** option is not stored as part of the model definition but is an optional parameter at the time of the projection calculation.

3. Click the **Use an employment series as a variable** button. A series of OLS Projections dialogs will display.

1. Select the Area and click OK.

2. Select an **Industry** and click **OK**. The employment series displays in the **Employment series to be used as variables** table. To remove the employment series, right click the industry in the box and select **Remove**.

3. Repeat these steps to add additional industries. Selected industries are listed in the **Employment series to be used as variables** table. Right click the variable and select **Remove** to remove it.

4. Click the **Save settings as user-defined model** button. You will be prompted to enter a model name.

5. Enter a **Model name** and click **OK**. The model is now available for use on the **Model selection** tab, by selecting the **User-defined** radio button.

To start over with different variables, click **Clear model settings** to clear the selected options.

### **Related Content**

- Projection Results Tab
- Graphs/Tables Tab
- OLS Regression Models
- Dummy Variables

# **Projection Results Tab**

The **Projection results tab** displays the results of the OLS Regression Model, with the selected options.

| Select an 000000 |                          | Last year: 200    | Location quotient:          | 1.0000 Lo     |           | Select a | in area:<br>onia |        |        |            |
|------------------|--------------------------|-------------------|-----------------------------|---------------|-----------|----------|------------------|--------|--------|------------|
| Model se         | election Mode            | el definition Pro | ojection results Graphs/Tat | oles          |           |          |                  |        |        |            |
| Year             | Yhat (t)                 | Residual          | ^ Variable                  | bhat          | Std E     | rror     | t-stat           | t-prob | Tol    | f-sta      |
| 1972             | 8,819,027                | -183,176.7201     | Area total emp/U.S. total e | 750,707.916   | 548,152.2 | 299      | 9.125            | 0.000  | 0.097  | 85.7       |
| 1973             | 8,989,374                | -91,183.6149      | National employment         | 0.080         | 0.0       | 003      | 27.401           | 0.000  | 29.682 | 335,519.48 |
| 1974             | 9,094,020                | -43,000.4465      | Constant                    | 089,048.652   | 948,613.2 | 282      | -4.311           | 0.000  | 0.000  | 335,519.48 |
| 1975             | 8,945,880                | -101,859.9933     |                             |               |           |          |                  |        |        |            |
| 1976             | 9,051,211                | -47,359.3502      |                             |               | 0         |          | 3                |        |        |            |
| 1977             | 9,164,127                | 3,353.1124        | Projected value:            | 13,001,746    |           | Save     | projection       |        |        |            |
| 1978             | 9,375,340                | 75,799.7614       | Growth rate:                | 0.92 %        | SI        | how sav  | ed projections   |        |        |            |
| 1979             | 9,535,236                | 119,893.9432      |                             |               | -         |          |                  |        |        |            |
| 1980             | 9,551,184                | 119,706.2563      | R-squared:                  | 0.9909        |           |          |                  |        |        |            |
| 1981             | 9 <mark>,4</mark> 16,218 | 36,556.2193       | Adjusted R-squared:         | 0.9903        |           |          |                  |        |        |            |
| 1982             | 9,186,280                | -51,577.8631      | Rho (From Hildreth-Lu):     |               |           |          |                  |        |        |            |
| 1983             | 9,138,646                | -87,531.8472      | proministen sup             |               |           |          |                  |        |        |            |
| 1984             | 9,440,923                | -24,512.9039      | Durbin-Watson test:         | 0.1795        |           |          |                  |        |        |            |
| 1985             | 9,561,958                | -41,072.0136      | Theil U:                    | 2.3128        |           |          |                  |        |        |            |
| 1986             | 9,641,756                | -58,338.3492      | Total sum of courses        | 0 451 905 704 |           |          |                  |        |        |            |
| 1987             | 9,865,771                | -5,807.4147       | Total sum of squares: 1.    | 2,451,896,784 |           |          |                  |        |        |            |
| 1988             | 10,135,439               | 54,203.4357       | Number of observations:     | 37            |           |          |                  |        |        |            |
| 1989             | 10,327,907               | 81,044,5607       | Number of variables:        | 2             |           |          |                  |        |        |            |

Figure 1: Projection Results tab

The **Projected value** is in bold text. Beneath it are explanatory statistics:

- Compound annual Growth rate
- <u>R-squared</u>
- Adjusted R-squared
- Rho value that is computed using the Hildreth-Lu algorithm if you selected <u>Correction for serial correlation</u> as part of the model definition
- Durbin-Watson test
- <u>Theil- U</u>
- Total sum of squares
- <u>Number of Observations</u> and Variables in the OLS regression matrix

Above these statistics is a table displaying statistics related to the variables making up the model. There is one row for each variable, plus a row for the regression equation's constant term. The statistics in the table are:

- b-hat or beta value, which is the coefficient of the variable in the equation
- <u>Std Error</u> (standard error)
- <u>t-stat<istic></u>
- t-prob<ability>
- Tol<erance>
- <u>f-stat<istic></u>

On the left side of the screen, the table displays a row for each year in the historical series. The total number of rows should match the observation count. The Yhat (t), the value of the historical series predicted by the model, and the <u>Residual</u> (the difference between the Yhat and the actual value of the historical series for the year) are displayed.

You can **Select an industry** to project a value for another industry.

Click **Save projection** to save the model you want to keep. The projected value is saved in the database along with all of the associated statistics as well as the beta and y-hat tables. You can save as many model results for the same industry as you want.

Click **Show saved projections** to view a pop up with currently saved projections.

#### **Related Content**

- OLS Regression Models
- Model Definition Tab
- Graphs/Tables Tab

# **Graphs/Tables Tab**

The **Graphs/Tables tab** displays the results of the OLS Regression Model. You can see a graph of the historical series and all of the variables that make up the model.

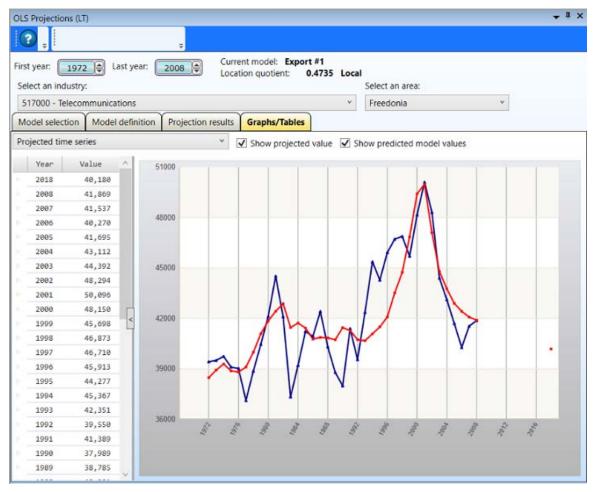


Figure 1: Graphs/Tables tab

### **Adjust Data View**

- 1. Select a First year or Last year.
- 2. Select an industry to view the selected model's data for that industry.

3. **Select an area** to view the selected model's data for the industry in different areas.

- 4. Select an option from the drop down menu:
- Projected time series
- U.S. industry emp/U.S. population

- Area personal income
- Residuals
- 5. Optionally:
- Click Show projected value.
- Click **Show predicted model values** only available if Projected time series is selected from the drop down menu.

#### **Related Content**

- OLS Regression Models
- Model Definition Tab
- Projection Results Tab

# **Batch Processing**

Use the **Batch Processing** module to process multiple industries at the same industry level using one or more existing models. Options are available to customize the settings used when batch processing multiple industries.

#### **Screen Controls**

- User settings tab
  - Select an Area drop-down menu
  - Select Industry Level drop-down menu
  - o Correction for serial correlation check box
  - o Reference area radio buttons
    - National radio button
    - State radio button
  - o # Theil U forecast years spinner
  - Add dummy variable check box
    - Breakpoint year for dummy variable spinner
  - Run Projections button
  - Save Projections button
- Projection Results tab
- OLS Details tab
- Error Report tab
- Use as first year for shift-share/time series check box and spinner
- Model tabs
  - o Shift Share tab
  - Time Series tab
  - OLS Regression tab



Figure 1: Batch Processing module

#### **Batch Processing Multiple Industries**

- 1. Select an Area from the drop-down menu.
- 2. Select an Industry Level from the drop-down menu.
- 3. Optionally, select any of the following controls:
- Select Correction for serial correlation.
- Select a **Reference area** this option is only available if you selected a substate area.
- Select the # Theil U forecast years.
- Select Add dummy variable.
  - If using a dummy variable, select the Breakpoint year for dummy variable using the spinner. A breakpoint year is a place in the time series (year) where values change significantly. It is set to 1990 by default, the year of the NAICS code change, but it can be set to any year.

4. Click one or more check boxes in any of the **Shift Share**, **Time Series**, or **OLS Regression** model tabs. The **Run Projections** button becomes available after selecting model options.

5. Click the **Run Projections** button. Projection results based on the selected models will be displayed on the Projection Results tab.

| User Setti | ngs Proj | ection Results OLS De | tails Error Report |                |            |    |
|------------|----------|-----------------------|--------------------|----------------|------------|----|
| Save ?     | NAICS    | Projection Model      | First Year Emp.    | Base Year Emp. | Projection | 1  |
| ~          | 236000   | Classical Shift-share | 45,041             | 55,227         | 60,248     |    |
| ~          | 237000   | Classical Shift-share | 24,214             | 30,916         | 33,801     |    |
| ~          | 238000   | Classical Shift-share | 131,823            | 172,359        | 165,608    |    |
| ~          | 311000   | Classical Shift-share | 84,651             | 77,785         | 74,831     |    |
| ~          | 312000   | Classical Shift-share | 9,388              | 7,272          | 5,793      |    |
| ~          | 313000   | Classical Shift-share | 2,517              | 1,265          | 811        |    |
| <b>v</b>   | 315000   | Classical Shift-share | 11,040             | 4,072          | 2,195      |    |
| ~          | 316000   | Classical Shift-share | 4,144              | 1,518          | 1,123      |    |
| ~          | 321000   | Classical Shift-share | 8,650              | 8,034          | 7,484      |    |
| ~          | 322000   | Classical Shift-share | 32,115             | 23,670         | 18,512     | Ϊ. |

Figure 2: Projection results

The **Projection Results** tab displays the NAICS code, the Projection Model used in the calculation, the First Year Employment and Base Year Employment, and the

Projection. In the **Save?** column, deselect the projections you do not want to save. On the **User Settings** tab, click **Save Projections**.

By default, all projections are saved when you exit the **Projections Results** tab. You must deselect the projection if you do not want it saved.

6. Click the Save Save? check box to mark all records to be saved or click the individual record check boxes to select specific records to be saved.

7. Return to the **User Settings** tab and click the **Save Projections** button to save the projected values.

#### **OLS Details Tab**

The **OLS Details tab** is similar to the Projection Results tab under the <u>OLS Regression</u> <u>Models</u> module. Reference the <u>Projection Results tab</u> for additional information and definitions relating to the OLS Details tab.

To enable the **OLS Details** tab you must select a line with an OLS model on the **Projection Results** tab.

| Batch Process | sing (LT)   |              |                     |  |            |            |        |        |        | <b>→</b> ¤ > |
|---------------|-------------|--------------|---------------------|--|------------|------------|--------|--------|--------|--------------|
| User Setting  | ~           | ion Results  | OLS Details         | Error Report                                   |            |            |        |        |        |              |
| Current OLS   | Projection: | 236000 - Exp | ort #1              |  |            | ÷          |        |        |        |              |
| Year          | Yhat (t)    | Residual     | ^ Variable          |  | bhat       | Std Error  | t-stat | t-prob | Tol    | f-sta        |
| 1973          | 45,473      | 3,705.3636   | Area tot            | al employment/U                                | 38,888.709 | 04,900.439 | 0.371  | 0.713  | 0.416  | 0.14         |
| 1974          | 44,466      | 1,713.7585   | US indus            | try employment                                 | 0.035      | 0.004      | 7.881  | 0.000  | 48.817 | 7,275.45     |
| 1975          | 37,915      | 3,251.2020   | Constan             | t  | -4,535.203 | 15,532.938 | -0.292 | 0.772  | 0.000  | 0.00         |
| 1976          | 38,269      | 1,767.2207   |                     |  |            |            |        |        |        |              |
| 1977          | 41,237      | -276.7599    |                     |  |            |            |        |        |        |              |
| 1978          | 45,594      | -1,559.2720  | Projecte            | Projected value:<br>Growth rate:               |            |            |        |        |        |              |
| 1979          | 47,306      | -3,095.5950  | Growth              |  |            |            |        |        |        |              |
| 1980          | 43,803      | -2,599.6460  |                     |  |            |            |        |        |        |              |
| 1981          | 40,813      | -2,949.1825  | R-squared:          |  | 0.8079     |            |        |        |        |              |
| 1982          | 36,864      | -1,457.6066  | Adjusted R-squared: |  | 0.7963     |            |        |        |        |              |
| 1983          | 37,672      | -6,584.7002  | Rho (Fro            | Rho (From Hildreth-Lu):<br>Durbin-Watson test: |            |            |        |        |        |              |
| 1984          | 42,613      | -6,274.7485  |                     |  |            |            |        |        |        |              |
| 1985          | 45,743      | -8,594.3077  | Durbin-             |  |            |            |        |        |        |              |
| 1986          | 46,965      | -4,538.1777  | Theil U:            |  | 1.93       |            |        |        |        |              |
| 1987          | 47,940      | -548.3111    | Total cur           | Total sum of squares:                          |            |            |        |        |        |              |
| 1988          | 49,944      | -776.2944    | iotal sul           | n or squares.                                  | 12,017,269 |            |        |        |        |              |
| 1989          | 49,447      | -1,035.4460  | Number              | of observations:                               | 36         |            |        |        |        |              |
| 1990          | 49,004      | 3,053.3379   | Number              | of variables:                                  | 2          |            |        |        |        |              |

Figure 3: OLS Details tab

# **Error Report Tab**

The **Error Report** tab displays any errors in the projections caused by any of the selected options. The NAICS code, Projection Model, and error message describe any issues.

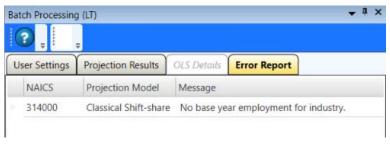


Figure 4: Data errors

Use the **User Settings** tab to make adjustments to the options and models to run other projections. When you click the **Run Projections** button again, before **Save Projections**, an **Unsaved Projections** message will display. Click **Yes** to clear any unsaved projections and rerun the process. Click **No** to exit the process without rerunning the projection.

### **Related Content**

• Project Multiple Regions (LT)

# **Project Multiple Regions**

Use the **Project Multiple Regions** module to create projections across multiple industries for all members of an Area Group. The projections generated for an industry in sub-state areas add up to the state projection.

# **Screen Controls**

- Select an Area Group drop-down menu
- Initial Processing tab
- Industry View tab
- Area View tab
- Analyze button
- Calculate button
- Load button
- Load from summary button

| Short Term 🗸 Long Term         | Occupational          | Report Manager    | Local Review         | Getting Started | Settings                    | Exit              |
|--------------------------------|-----------------------|-------------------|----------------------|-----------------|-----------------------------|-------------------|
|                                | Project Multiple Regi | ons (LT)          |                      |                 |                             |                   |
| Long Term Projections          |                       | Ŧ                 |                      |                 |                             |                   |
| Shift Share                    | Select an Area Grou   | p: Freedonia WIAs |                      |                 |                             | Ÿ                 |
| Time Series                    |                       |                   |                      | Analyze         | Calculate Load              | Load from summary |
| OLS Regression Models          | Initial Processing    | Industry View Are | a View               |                 |                             |                   |
| Batch Processing               | Area                  |                   | Industries With Empl | loyment         | Industries With Projections | 1                 |
| Project Multiple Regions       |                       |                   |                      |                 |                             |                   |
| Summary                        |                       |                   |                      |                 |                             |                   |
| Delete Area Projections        |                       |                   |                      |                 |                             |                   |
| Delete Model                   |                       |                   |                      |                 |                             |                   |
| Step Ahead                     |                       |                   |                      |                 |                             |                   |
| Long-term industry Projections |                       |                   |                      |                 |                             |                   |

Figure 1: Project Multiple Regions module

### **Begin Initial Processing**

1. Select an Area Group from the drop-down menu.

2. Click the **Analyze** button. When the data is calculated, the results will be displayed. You must have a statewide projection for an industry to project that industry at the sub-state level. The **Industries with Projections** are the industries available for sub-state processing.

| ect an Area   | Group: Freedonia WIA    | s  |   |   |                                     |                                      |      |
|---------------|-------------------------|--|---|---|-------------------------------------|--------------------------------------|------|
|               |                         |  |   | Analyze                                 | Calculate Load                      | Load from sum                        | nmar |
| nitial Proces | ssing Industry View     | Area View  |   |   |                                     |                                      |      |
| Area          |                         | Industries With Employmen  | it Inde                                 | ustries With Projections                |                                     |                                      |      |
| Freedon       | ia                      |  | 116                                     |   | 109                                 |                                      |      |
| Freedon       | ia Balance of State WIA |  | 115                                     |   | 67                                  |                                      |      |
| Freedon       | ia WIA 2                |  | 116                                     |   | 66                                  |                                      |      |
| Freedon       | ia WIA 3                |  | 116                                     |   | 70                                  |                                      |      |
| Freedon       | ia WIA 4                |  | 116                                     |   | 64                                  |                                      |      |
| Freedon       | ia WIA 5                |  | 116                                     |   | 68                                  |                                      |      |
| Freedon       | ia WIA 6                |  | 0                                       |   | 0                                   |                                      |      |
| Select al     | II Deselect all         | The list below contains industr<br>already exist will be analyzed.<br>industries. Click Analyze to re- | Click Select All to pick a              |   |                                     |                                      |      |
| Calculate     | Industry                |  | Last value missing in one or more areas | Last value zero in one<br>or more areas | Model results previously calculated | Final projection<br>previously saved | 1    |
|               | 236000 - Construction   | 6000 - Construction of Buildings   |   |   |                                     | 3                                    |      |
|               | 237000 - Heavy and 0    | 237000 - Heavy and Civil Engineering Construction  |   |   |                                     |                                      |      |
|               | 238000 - Specialty Tra  | ade Contractors  | V                                       |   |                                     | 1                                    |      |
|               | 311000 - Food Manua     | facturing  |   | 6                                       |                                     |                                      |      |

Figure 2: Results of analyzing Freedonia WIAs

3. Click the **Calculate** check boxes for the industries to calculate. Click the **Select all** button to select all industries. Click the **Deselect all** button to deselect all industries.

Industries are automatically selected for calculation unless one of four conditions exists:

- The first condition, **Last value missing in one or more areas**, is a serious problem in Long Term Industry Projections and usually means there is an issue with the data. You can check the box to select the industries, but the model results will not be consistent with other industries.
- The second condition, Last value zero in one or more areas, often means that employment for the industry has disappeared and there is no reason for the industry to be projected. The industry should be investigated before continuing.
- The third condition, **Model results previously calculated**, means there is no need to recalculate.
- The fourth condition, **Final projection previously save**d, means multiple region result already exists for this industry. Despite the warnings, you can select any flagged industry for multiple region projecting.

4. Click the **Load** button to load any values that were previously calculated in the Project Multiple Regions module.

Tou can close the Project Multiple Regions screen and the Projections Suite then, in the Project Multiple Regions module, click **Load** to reload the data and pick up where you left off.

5. Click the **Load from summary** button to load results calculated and selected in the Summary module, if applicable.

6. Click the **Calculate** button. When the calculations are complete, the module will automatically switch to the Industry View tab.

### **Related Content**

- Industry View Tab (LT)
- Area View Tab (LT)
- Summary

### **Industry View Tab**

On the Industry View tab, you can view Information about all calculated industries.

#### **Screen Controls**

- Select an Industry drop-down menu
- Select control group
  - Unforced radio button
  - Forced radio button
- Select data type control group
  - Level radio button
  - Share radio button
  - **Growth** radio button
- Save Results control group
  - Preliminary button
    - o Final button

|      | ct an Area Group | p: Freedonia WI | As                                  |                |           |          |           |        |                   |
|------|------------------|-----------------|-------------------------------------|----------------|-----------|----------|-----------|--------|-------------------|
|      |                  |                 |                                     |                |           | Analyze  | Calculate | Load   | Load from summary |
| Init | tial Processing  | Industry View   | Area View                           |                |           |          |           |        |                   |
| sele | ect an Industry: | 334000 - Comp   | uter an <mark>d</mark> Electronic P | roduct Manufac | turing    |          |           | ~      | Save Results:     |
|      |                  | Select: 🖲 Ur    | forced O Forced                     |                |           |          |           |        | Preliminary       |
| Sele | ect data type:   | • Level O St    | nare 🔘 Growth                       |                |           |          |           |        | Final             |
|      | Area             |                 | Base                                | Final          | Export #1 | Implicit | Emp/Pop   | Linear | Log               |
|      | Freedonia Bal    | ance of State \ | 33,104                              | 0              | 14,776    | 26,545   | 0         | 7,385  | 34,70             |
|      | Freedonia WI     | A 2             | 1,032                               | 0              | 656       | 832      | 0         | 0      | 792               |
|      | Freedonia WI     | A 3             | 1,031                               | 0              | 371       | 832      | 0         | 294    | 99                |
|      | Freedonia WI     | A 4             | 2,502                               | 0              | 1,816     | 2,017    | 0         | 686    | 2,872             |
|      | Freedonia Wl     | A 5             | 2,962                               | 0              | 2,225     | 2,389    | 0         | 1,424  | 3,64              |
|      | Freedonia WI     | A 6             | 0                                   | 0              | 0         | 0        | 0         | 0      |                   |
|      | Sum              |                 | 40,631                              | 0              | 19,844    | 32,614   | 0         | 9,788  | 43,009            |
|      | Freedonia        |                 | 40.631                              | 29.079         |           |          |           |        |                   |

Figure 1: Industry View tab

#### View and Save Data

- 1. Select an Industry with the drop-down menu.
- 2. Select the data type you want to view:

- Employment Level (Level is the only option available for moving and editing values).
- Percent **Share** for the area. Share converts each area's portion of the sum to a percentage. The shares for each area will sum to 100%.
- Compound **Growth** rate for the ten-year period.
- 3. Select Unforced or Forced.
- **Unforced** is the default. **Forced** forces the Sum to equal the State or Parent total in the Final column. Do not use **Forced** until the initial analysis by Level is complete.

#### Enter and Save Final Values

The **Final** column contains values selected by moving the level from the other columns and will be the final saved value for the industry.

- 1. **Right click** in a model's column.
- 2. Select Move Cell or Move Column.
- Move Cell moves only that models cell value to the Final column.
- Move Column moves all values in that model to the Final column.

3. To edit a value in the **Final** column **double click** the cell, edit the value, and press **Enter**.

4. In the **Save Results** control group, select a button to save results.

- **Preliminary** save model calculations as preliminary data for review (Click **Load** on the **Initial Processing** tab to load your preliminary data).
- **Final** saves the data in the Final column as a final projection for the current industry.

Saving using **Final** only saves the current industry. This creates a record in the projections table for each sub-state area and uses the value in the final column as the projection. The model type is set to Multiple Region and the selected flag is turned on so that the results can go straight to ICT creation. If the **Forced** option is selected, the forced value is used for the projection.

#### **Related Content**

- Project Multiple Regions (LT)
- Area View Tab (LT)

# **Area View Tab**

After calculating the industry information on the Initial Processing tab, the Area View tab becomes available. Use the Area View tab to display calculated industry data for the selected area and sector.

| -      | 0           |                                  |                    |       |                    |                    |           |                    |                 |
|--------|-------------|----------------------------------|--------------------|-------|--------------------|--------------------|-----------|--------------------|-----------------|
| elect  | an Area Gr  | ₹<br>oup: Freedonia W            | lAs                |       |                    |                    |           |                    |                 |
| Initia | I Processin | g Industry View                  | Area View          |       |                    | Analyze            | Calculate | Load               | Load from summa |
|        | t an Area:  | Freedonia Balance                | of State WIA       |       |                    |                    |           |                    |                 |
| Selec  | t a Sector: | 000000 - Total All               | Sectors            |       |                    |                    |           |                    |                 |
|        |             | Level      Grow                  | th                 |       |                    |                    |           |                    |                 |
|        | Industry    |                                  | Base               | Final | Export #1          | Implicit           | Emp/Pop   | Linear             | Log             |
|        |             | onstruction                      | 173,834            | 0     | 193,436            | 207,013            | 0         | 217,215            | 194,052         |
|        | 230000 - 0  |                                  |                    |       |                    |                    |           |                    | 540.354         |
|        |             | 1anufacturing                    | 494,046            | 0     | 404,489            | 453,811            | 0         | 382,462            | 519,354         |
|        | 310000 - N  | lanufacturing<br>Vholesale Trade | 494,046<br>281,294 | 0     | 404,489<br>284,693 | 453,811<br>290,732 | 0         | 382,462<br>281,126 | 283,712         |

Figure 1: Area View tab

### **Display Calculated Information**

- 1. Select an Area from the drop-down menu.
- 2. Select a Sector. Select Total All Sectors to view all sectors together.
- 3. Click the Level or Growth radio button.
- Level employment level
- Growth compound growth rate for the ten-year period

#### **Related Content**

- Project Multiple Regions (LT)
- Industry View Tab (LT)

# Summary

Use the **Summary** module to create multiple projections for a single area-industry combination using as many models as you like. You can observe the use of different mathematical procedures, and how including or excluding independent variables will affect the projection. After reviewing the data, select the final projection to copy it to the Industry Control Total file used in Occupational Projections.

### **Screen Controls**

- Projection Year drop-down menu
- Select an area drop-down menu
- Select an industry drop-down menu
- Auto Industry Select check box
- Summary Report Print Options
- Print button
- To Excel button

| Short Term 🗸 Long Term         | Occupational  | Report Mai      | nager Loo  | al R            | evie      | ew                      |     |                         |            | 🕜 Get                           | ting S        | itarte  | d                          |           |          | Settings    |            | Exit     |              |
|--------------------------------|---|-----------------|--|-----------------|-----------|-------------------------|-----|-------------------------|------------|---------------------------------|---------------|---------|----------------------------|-----------|----------|-------------|------------|----------|--------------|
|                                | Long Term Projecti  | on Summary      |  |                 |           |                         |     |                         |            |                                 |               |         |                            |           |          |             |            |          | <b>→</b> ‡ > |
| Long Term Projections          |   |                 |  |                 |           |                         |     |                         |            |                                 |               |         |                            |           |          |             |            |          |              |
|                                | Projection Year:  | Se              | elect an area:   |                 |           |                         |     |                         |            |                                 | :             | Select  | an ir                      | ndust     | ry:      |             |            |          |              |
| Shift Share                    | 2018  | ۲F              | reedonia   |                 |           |                         |     |                         |            |                                 | ~             | 3120    | 00 - 1                     | Beve      | rage and | Tobacco Pro | duct Manuf | acturing | v            |
| Time Series                    |   |                 |  |                 |           |                         |     |                         |            |                                 |               |         |                            |           |          | Auto Indust | ry Select  |          |              |
| OLS Regression Models          |   |                 |  | _               | _         |                         | _   | Model 9                 | Statistics | Matrix                          |               |         | _                          | _         |          |             |            |          |              |
| Batch Processing               |   |                 |  |                 |           |                         |     |                         |            |                                 | e             |         |                            |           |          |             |            |          |              |
| Project Multiple Regions       | Model   |                 | Projection   |                 | ~         | ate                     |     | o                       |            | ÷.                              | /atso         |         | ons                        |           |          | ¥           |            |          |              |
| Summary                        | Model   |                 | Projection   | Selected        | Adjusted? | Compound<br>Growth Rate |     | Total Sum Of<br>Squares | R-squared  | Adjusted R-<br>squared          | Durbin-Watson | -       | Observations               | Variables | .9       | Coefficient | Constant   | ~        | Residuals    |
| Delete Area Projections        |   |                 |  | Sele            | Adju      | go Co                   | Rho | Tota                    | R-sq       | Adju                            | Durt          | Theil U | 0ps                        | Varië     | TRatio   | Coet        | ē          | Betas    | Resi         |
| Delete Model                   | Constant Share  |                 | 6,611  |                 |           | -0.95 %                 |     |                         |            |                                 |               |         |                            |           |          |             |            |          |              |
| Step Ahead                     | Employment-to-P   | opulation Ratio | 7,635  |                 |           | 0.49 %                  |     |                         |            |                                 |               |         |                            |           |          |             |            |          |              |
|                                | Classical Shift-sha   | re              | 5,793  |                 |           | -2.25 %                 |     |                         |            |                                 |               |         |                            |           |          |             |            |          |              |
|                                | Linear  |                 | 6,354  |                 |           | -1.34 %                 |     |                         | 0.8287     |                                 |               |         |                            |           | -13.0121 | -107.2963   | 11397.2793 |          |              |
|                                | Logarithmic   |                 | 7,851  |                 |           | 0.77 %                  |     |                         | 0.7734     |                                 |               |         |                            |           | -15.8065 | -1293.3990  | 12830.9219 |          |              |
|                                | Export #1   |                 | 6,346  |                 |           | -1.35 %                 |     | 112,260                 | 0.9349     | 0.9310                          | 1.3676        | 2.53    | 37                         | 2         |          |             |            | View     | View         |
| Long-term Industry Projections | Summary Report F<br>Print statistics for<br>Just the Select<br>All NAICS? | ted NAICS?      | Print statistic<br>Just this n<br>All shift-s<br>All model | nodel<br>hare r | ?         |                         |     |                         | model      | stics?<br>summary<br>statistics | 17 [          | Beta    | e for i<br>a tabl<br>idual | e         | ssion mo | dels        | Print      | To E     | xcel         |

Figure 1: Summary module

The Model Statistics Matrix displays every previously saved projection for the selected parameters. Columns include:

- Model name
- Projection value
- Selected a check box indicating whether or not the projection is selected for passing onto the ICT file. Selecting a model also makes it available upon clicking the Load from summary button in the <u>Project Multiple Regions</u> module.
- Adjusted? a check box indicating whether or not this projection was saved in the Across Industries or Across Areas Adjustments modules.

#### **Projections Suite**

The table also includes columns for the Compounded Growth Rate and miscellaneous statistics from various models. The <u>R-squared</u> statistic applies to both OLS and time series models. For <u>OLS models</u>, the columns for Betas and Residuals contain a **View** button. Click **View** to display a table with the associated statistics for the model on that row.

#### **Create a Summary Report**

- 1. Select a **Projection Year** from the drop-down menu.
- 2. Select an area.
- 3. Select an Industry from the drop-down menu.
- 4. Click the **Selected** check box for the desired model.
- 5. Click the wanted **Report Print Options**.
- 6. Select the desired **Regression Models** check box.

7. Click the **Print** button. Selecting Print displays a **Print Preview** pop up. Adjust the view as needed and click the **Print** icon in the Print Preview window (or press **Ctrl+P**).

#### **Export Summary Data**

- 1. Select the Projection Year.
- 2. Select an area.
- 3. Select an industry.
- 4. Select any necessary **Summary Report Print Options**.

5. Click the **To Excel** button. Selecting **To Excel** displays a **Save As** dialog box. Select the location where you want to save the Excel file, enter a **File name**, and click **Save**.

Only one model can be selected for further processing. Click the **Selected** check box next to select the model.

Click the **Auto Industry Select** check box to display the current list of industries for the model you selected for processing.

### **Related Content**

- Project Multiple Regions
- <u>Across Industries</u>
- <u>Across Areas</u>

## **Delete Area Projections**

Use the **Delete Area Projections** module to delete the projections for a specified area and year. This allows you to clear any saved data and start your projections over with fresh data.

#### **Screen Controls**

- Select an Area drop-down menu
- Select a Year drop-down menu
- **Delete Projections** button

| Short Term  | ✓ Long Term | Occupational                             | Report Manager                | Local Review            | Settings            | Exit               |
|---|-------------|--|-------------------------------|-------------------------|---------------------|--------------------|
| Long Term Projec  | tions       | Delete Area Projecti                     | ions (LT)                     |                         |                     | <b>↓</b> 1 ×       |
| Shift Share<br>Time Series  |             | Select an area and<br>Projections" butto | projected year to delete<br>n | all long term projectio | on values, and then | click the "Delete  |
| OLS Regression Me<br>Batch Processing<br>Project Multiple Re<br>Summary |             | Select an Area:<br>Select a Year:        | Select Area                   |                         |                     | ~                  |
| Delete Area Projec  | tions       |  |                               |                         |                     | Delete Projections |
| Delete Model<br>Step Ahead  |             |  |                               |                         |                     |                    |
| Long-term industry  |             |  |                               |                         |                     |                    |

Figure 1: Delete Area Projections module

#### **Delete Area Projections**

- 1. Select an Area from the drop-down menu.
- 2. Select a Year.

3. Click the **Delete Projections** button. A **Delete Long Term Projections** dialog box will be displayed.

4. Click **Yes** to delete the data. Click **No** to keep the data.

## **Delete Model**

Use the **Delete Model** module to delete user-defined OLS models. When you delete a model, any projections associated with the model are also deleted. The Delete Model module displays the previously created user-defined models created in the <u>OLS</u> <u>Regression Models</u> module.

### Screen Controls

• Delete Model button

| Short Term   | ✓ Long Term | Occupational         | Report Manager              | Local Review | Settings | Exit         |
|--|-------------|----------------------|-----------------------------|--------------|----------|--------------|
| Long Term Project  | ions        | Delete Model (LT)    |                             |              |          | <b>↓</b> 1 × |
| Shift Share<br>Time Series<br>OLS Regression Mo                            | dels        | Note: In addition to | o the model itself, any pro | Model D      |          | Delete Model |
| Batch Processing<br>Project Multiple Reg<br>Summary<br>Delete Area Project | gions       | Local #2 - Modifie   | ed                          |              |          |              |
| Delete Model<br>Step Ahead   | e           |                      |                             |              |          |              |
| Long-term Industry P   | rojections  |                      |                             |              |          |              |

Figure 1: Delete Model module

### Delete a Model

1. Select the model to be deleted from the **User Defined Models** table. The **Model Details** will be displayed. Only one model can be selected at a time.

2. Click the **Delete Model** button. The **Are you sure** dialog box will prompt you to confirm deletion of the model.

3. Click **Yes** to delete the model. Click **No** to keep the model.

### **Related Content**

OLS Regression Models

### **Step Ahead**

One of the criticisms of 10 year projections is that by the time the projections are complete, the base year has already been passed by 1-2 years. The **Step Ahead** module enables analysts to create alternative base year values for either the 9 year or 8 year. For example, in completing the 2016-2026 10-year projections, the base is 2016 but are completed in 2018. Therefore when publishing these results, data are already 2 years behind and don't appear to be "current." The new base year that Step Ahead can create is either 2017 or 2018 (a 9- or 8-year value). This module enables the user to create a new base year value using three different methods which are explained below.

Prerequisites for the Step Ahead model include completing the Long and Short Term Industry Projections. The base year for both sets of projections must be the same or data will not be displayed correctly in the tabs. STIP system round selection must be set for the same base year time-frame as the LTIP base year (i.e., annualized ST base covering the same base time period as the LT projections base year). For example, if LT base is 2016, the ST round must be set to the round that covers all of 2016 (ST Base period ending Dec 2016 or Mar 2017, June 2017, etc.).

It is recommended that the industry structure must be the same for STIP and LTIP, but not required. Only industries with data will be processed in the Step Ahead module.

### **Screen Controls**

- 1-Prepare Data tab
- 2-Compare LT and ST Base Employment tab
  - Process Alternative Base Values button
- 3-Compare LT and ST Projections tab
- 4-Evaluate Alternative Base Values tab
- 5-Evaluate Alternative Base Values tab
- 6-Review/Edit/Save Alternative Base Values tab
  - Load Saved Alternative Base Values button
    - Save Alternative Base Year Values button
- Prepare Data For Review button

### **Projections Suite**

| Short Term V Long Term O            | Occupational     | Report Manager Local Re         | view   |   | Getting Started                         | Settings                  | Exit                 |
|-------------------------------------|------------------|---------------------------------|--|---|---|---------------------------|----------------------|
|                                     | Step Ahead       |                                 |  |   |   |                           | • I ×                |
| Long Term Projections               | 2                |                                 |  |   |   |                           |                      |
|                                     | Step Ahead Proce | ssing and Review                |  |   |   |                           |                      |
| Shift Share                         |                  |                                 |  |   |   |                           |                      |
| Time Series                         | _                | ~                               | ~  |   | ~                                       |                           |                      |
| CLS Regression Models               | 1-Prepare Data   | 2-Compare 17 and \$7 Base Emplo | yment 3-Compare LT and ST Project  | aru 4-Evaluate Alternative Base Valu  | es 5-Evaluate Alternative Base Value    | s 6-Review/Edit/Save Alte | ernative Base Values |
| Batch Processing                    |                  |                                 | Select Area:   |   |   |                           |                      |
| Project Multiple Regions<br>Summary |                  |                                 | Select Long Term Timeframe:  |   |   |                           |                      |
| Delete Area Projections             |                  |                                 | serect cong term timesene.   |   | *                                       |                           |                      |
| Delete Model                        |                  |                                 | Select Short Term Timeframe:   |   |   |                           |                      |
| Step Ahrad                          |                  |                                 |  |   |   |                           |                      |
|                                     |                  |                                 |  |   |   |                           |                      |
|                                     |                  |                                 |  | Prepare Data For Review   |   |                           |                      |
|                                     |                  |                                 | -  |   |   |                           |                      |
|                                     |                  |                                 |  | jections (LTIP) for which you plan to adj   |   |                           |                      |
|                                     |                  |                                 |  | jections (STIP) that will be used to deve<br>set for the same time-frame chosen. Pla  |   | IP and STIP must          |                      |
|                                     |                  |                                 | to be the same (i.e., annualized ST ba   | se covering the same base time period   |   |                           |                      |
|                                     |                  |                                 | structure must be the same.  |   |   |                           |                      |
|                                     |                  |                                 | The tabs above represent steps in  | the process:  |   |                           |                      |
|                                     |                  |                                 |  | c area (e.g., state, sub-state, etc.). Select   |   |                           |                      |
|                                     |                  |                                 | Term Round that coincides with the L<br>base year). Click on the button to pro | ong Term base year (typically, the ST tin<br>icess data for review in tab 2.          | ne-frame description may be one year    | ahead of the LT           |                      |
|                                     |                  |                                 |  | ermine large discrepancies, edit data as<br>ocess data for review and to activate Ta  |   | Process                   |                      |
|                                     |                  |                                 |  |   |   |                           |                      |
|                                     |                  |                                 | Tab 3 - Compare LT base and project<br>year and two projected years following  | ed values for the timeframe selected. Si<br>ig the base year.                         | hort term annualized values are display | ed for the base           |                      |
|                                     |                  |                                 | Tab 4 - Evaluate and save alternative  | base values from three methods for ba   | se year + 1.                            |                           |                      |
|                                     |                  |                                 | Tab 5 - Evaluate and save alternative  | base values from three methods for ba   | se year + 2.                            |                           |                      |
|                                     |                  |                                 |  | e values to make available for ICT Expor<br>vill be able to confirm which base year t |   | es also. In ICT           |                      |
|                                     |                  |                                 |  |   |   |                           |                      |

Figure 1: Step Ahead module

#### 1 - Prepare Data Tab

- 1. Select an area from the **Select Area** drop-down menu.
- 2. Make a selection from the **Select Long Term Timeframe** drop-down menu.
- 3. Select a **Short Term Timeframe** from the drop-down menu.

4. Click the **Prepare Data For Review** button. The **2-Compare LT and ST Base Employment** tab will enable and you will automatically be taken to this tab to compare the populated data.

#### 2 - Compare LT and ST Base Employment Tab

1. Click the **Process Alternative Base Values** button. The four additional tabs will be enabled.

#### 3 - Compare LT and ST Projections Tab

This tab displays the data for Long Term and Short Term annualized projection comparison.

#### 4 - Evaluate Alternative Base Values Tab

This tab is used to compare, select, and edit alternative base values to save on the Review/Edit/Save Alternative Base Values tab. To select a value:

1. **Right click** the value and select **Move Cell** from the context menu. The value will be moved to the LT Alternative Base column.

|        |   |         |               |           | Compound<br>Method  | STIP Annual C<br>Growth M |                     |         |              |
|--------|---|---------|---------------|-----------|---------------------|---------------------------|---------------------|---------|--------------|
|        |   | 2014    | 2024          |           | 2015                |                           | 2015                |         | 2015         |
| Code   | Industry Title                            | LT Base | LT Projection | LT Growth | LT Alternative Base | ST Qtr Growth             | LT Alternative Base | LT Alte | rnative Base |
| 000067 | Self Employed and Unpaid Family Worke     | 282,241 | 283,299       | 0.0004    | 282,347             | 0.005                     | 283,652             |         |              |
| 110000 | Agriculture, Forestry, Fishing and Huntin | 73,358  | 70,148        | -0.0045   | 73.030              | -0.0175                   | 72,074              | -       | 73,030       |
| 110067 | Self Employed Workers in Agriculture      | 28,301  | 26,810        | -0.0054   | 2                   | love Cell                 | 28,326              |         |              |
| 110500 | Wage and Salary Workers in Agriculture    | 45,057  | 42,684        | -0.0054   | N                   | love Column               | 45,111              |         |              |

Figure 2: Alternative Base value selected

Alternatively, select Move Column from the context menu to move the entire column to the LT Alternative Base column.

2. **Double click** in the LT Alternative Base to edit moved values or edit an empty cell. Type the adjusted value and click anywhere else in the table to set the value.



Figure 3: Adjust LT Alternative Base value

#### 5 - Evaluate Alternative Base Values Tab

Use this tab to evaluate base values for the subsequent year. Use the procedures from the 4 - Evaluate Alternate Base Values tab to move and edit selected values in the LT Alternative Base column.

|        |   |         |               |           | ound Annual<br>h Method | STIP Compour<br>Growth M |                     |                     |
|--------|---|---------|---------------|-----------|-------------------------|--------------------------|---------------------|---------------------|
|        |   | 2014    | 2024          |           | 2016                    |                          | 2016                | 2016                |
| Code   | Industry Title                            | LT Base | LT Projection | LT Growth | LT Alternative Base     | ST Qtr Growth            | LT Alternative Base | LT Alternative Base |
| 000067 | Self Employed and Unpaid Family Worke     | 282,241 | 283,299       | 0.0004    | 282,453                 | 0.005                    | 290,329             |                     |
| 110000 | Agriculture, Forestry, Fishing and Huntin | 73,358  | 70,148        | -0.0045   | 72,704                  | -0.0175                  | 71,331              |                     |
| 110067 | Self Employed Workers in Agriculture      | 28,301  | 26,810        | -0.0054   | 27,996                  | 0.0009                   | 29,766              |                     |
| 110500 | Wage and Salary Workers in Agriculture    | 45,057  | 42,684        | -0.0054   | 44,572                  | 0.0012                   | 47,375              |                     |
| 210000 | Mining                                    | 9,833   | 9,381         | -0.0047   | 97**                    | D.D.440                  | 9,604               | 9,741               |
| 220000 | Utilities                                 | 23,948  | 23,874        | -0.0003   | 23                      | Move Cell<br>Move Column | 24,108              |                     |
| 236000 | Construction of Buildings                 | 40,904  | 43,786        | 0.0068    | 41,454                  | 0.0181                   | 43,147              |                     |

Figure 4: Alternative Base value selected on the 5 - Evaluate Alternative Values tab

### 6 - Review/Edit/Save Alternative Base Values

This tab is used to review and save alternative base values from tabs 4 and 5 to fill final Long Term alternative base values.



Figure 5: Alternative Base values displayed on the 6 - Review/Edit/Save Alternative Base Values tab

Touble click the Alternative Base values to edit them in this tab.

### 1. Click the **Save Alternative Base Year Values** button to save the selected values.

The "saved" alternative base values will be available as an option when exporting the ICT values. You will use the check box on the Long Term <u>ICT Export</u> module to indicate exporting the Step Ahead values and you will choose the 9-year horizon base or the 8-year horizon base as alternative base values.

### **Step Ahead Calculation**

This is the calculation explanation for the 3 methods for tabs 4 and 5:

1 - Header = "LT Compound Annual Growth Method"

LT Compound Annual Growth Method for 1-year Step Ahead = LT Base Value + (LT Base Value \* LT Annual Compound Growth Rate)

LT Compound Annual Growth Method for 2-year Step Ahead = 1-year Step Ahead value + (1-year Step Ahead Value \* LT Annual Compound Growth Rate)

2 - Header = "ST Quarterly Projected Compound Annual Growth Method"

ST Compound Annual Growth Method for 1-year Step Ahead = LT Base Value + (LT Base Value \* ST Quarterly Projected Compound Annual Growth Rate)

ST Compound Annual Growth Method for 2-year Step Ahead = 1-year Step Ahead Value + (1-year Step Ahead Value \* ST Quarterly Projected Compound Annual Growth Rate)

3 - Header = "ST Compound Annual Growth Method"

ST Compound Annual Growth Method for 1-year Step Ahead = LT Base Value + (LT Base Value \* ST Annualized Compound Growth Rate)

ST Compound Annual Growth Method for 2-year Step Ahead = 1-year Step Ahead Value + (1-year Step Ahead Value \* ST Annualized Compound Growth Rate)

#### **Related Content**

- ICT Export
- Add Step Ahead Table

# Long Term Adjustments Menu Items

### Long Term Adjustments Introduction

The **Long Term Adjustments** group menu enables the adjusting of Industry Projections data for regional requirements.



Figure 1: Long Term Adjustments group menu

The Long Term Adjustments group menu contains the following selections:

- <u>Across Industries</u>
- <u>Across Areas</u>

### **Across Industries**

Use the **Across Industries** module to process adjustments over specific industry levels. You can use a variety of techniques to adjust the employment projections when summing to an industry total. Also, you can ensure that sub-sector values sum to the total. You can make final edits to the projected industry values before publication or inclusion in the Industry Control Total (ICT) file.

### **Screen Controls**

- Select an Area drop-down menu
- Select a Year drop-down menu
- Adjust button
- Reload button
- Undo button
- Save button
- Select Industry Levels control group
  - o Load list
  - o Process list
- Adjustment Mode control group
  - Top-down radio button
  - o Bottom-up radio button

| Short Term                 | 🗸 Long Term | Occupational       | Report Manager                          | Local Review              |                 | Settings     |   | Exit                                     |
|----------------------------|-------------|--------------------|---|---------------------------|-----------------|--------------|---|--|
| Long Term Adjus            |             | Adjust Across Indu | istries<br>levels to display by checkir | ig at least 2 boxes under | "Load" on right | side of form |   | ¥ I :                                    |
| Across Industries          |             | Select an Area:    | Freedonia                               |                           |                 | v            | Adjust  | Reload                                   |
| Across Areas               |             | Select a Year:     | 2018                                    |                           |                 | ~            | Undo  | Save                                     |
|                            | 10          | Status NAM         | G                                       | Level                     | Projection      | Constrain    | Selected Ind<br>Load<br>Total (1)<br>Domain<br>SuperSe<br>Sector (4<br>3-Digit (<br>Sub-Det | ctor (3) —<br>4) — —<br>5) — —<br>6) — — |
| Itip<br>Long-term Industry |             |                    |   |                           |                 |              | Adjustm<br>Top-dow<br>Bottom-   |  |

Figure 1: Across Industries module

### **Adjust Projections Across Industries**

- 1. Select an Area from the drop-down menu.
- 2. Select a Year.

3. Select at least two boxes from the **Select Industry Levels** control group, under the **Load** column. The **Adjust** button will activate when two selections from both the **Load** and the **Process** columns within the **Selected Industry Levels** control group are made. A selection in the **Process** column requires the same selection in the **Load** column. Selection of **Load** column choices are not limited by a selection in the **Process** column.

With selections made in the **Selected Industry Levels** control group, NAICS codes and associated projections (or zero-filled holding cells) will populate in the table. After running the adjustment the **Projection** column value will change from its original value.

**Bottom-up** will be automatically selected in the **Adjustment Mode** control group because it is the first step. This forces all the industry levels to be additive. The **Top-down** option is not available until you make an edit in the Projection column.

To edit the Projection column, **right click** and select **Edit**. A pencil icon *w*will display in the **Status** column of the industry Projection that was edited. The Projection edits roll (from the bottom) up to the parent industry. Editing a value in the Projection column will enable the Top-down adjustment mode.

Click the **Constrain** check box to keep the projection value. If you constrain a projection, the additivity of the table may be compromised.

| Select an Area: | Freedonia                                      |         |            |     | 10     | - | Adjust                        | Reload         |
|-----------------|--|---------|------------|-----|--------|---|-------------------------------|----------------|
| Select a Year:  | 2018   |         |            |     |        | - | Undo                          | Save           |
| Status N        | IAICS  | Level   | Projection | Con | strain | 1 | Selected Indu                 | ustry Level    |
| 0               | 101000 - Goods Producing                       | Domain  |            | 0   |        |   | Load                          | Proces         |
| 0               | 111000 - Crop Production                       | 3-Digit |            | 0   |        |   | Total (1)                     |                |
| 0               | 111100 - Oilseed and Grain Farming             | 4-Digit |            | 0   |        |   | Domain (2<br>SuperSect        |                |
| 0               | 111200 - Vegetable and Melon Farming           | 4-Digit |            | 0   |        | ľ | Sector (4)                    |                |
| 0               | 111300 - Fruit and Tree Nut Farming            | 4-Digit |            | 0   |        |   | ✓ 3-Digit (5)                 | _              |
| 0               | 111400 - Greenhouse, Nursery, and Floriculture | 4-Digit |            | 0   |        |   | ✓ 4-Digit (6) Sub-Detai       | Street, Street |
| 0               | 111900 - Other Crop Farming                    | 4-Digit |            | 0   |        | Ľ |                               |                |
| 0               | 112000 - Animal Production                     | 3-Digit |            | 0   |        |   | Adjustmer                     | nt Mode        |
| 0               | 112100 - Cattle Ranching and Farming           | 4-Digit |            | 0   |        | 1 | Top-down                      |                |
| 0               | 112200 - Hog and Pig Farming                   | 4-Digit |            | 0   |        |   | <ul> <li>Bottom-up</li> </ul> | p              |

Figure 2: Selected NAICS codes with zero-filled holding cells

4. Click the **Adjust** button. Adjusted projections display in the **Projection** column.

| Sele | ect an Are  | a: Freedonia                                   |         |            |           |          | Adjust        | Reload     |
|------|-------------|--|---------|------------|-----------|----------|---------------|------------|
| Sele | ect a Year: | 2018   |         |            |           | *        | Undo          | Save       |
|      | Status      | NAICS  | Level   | Projection | Constrain | <u>^</u> | Selected Indu | stry Level |
|      | 1           | 101000 - Goods Producing                       | Domain  | 806234     |           |          | Load          | Process    |
|      | 0           | 111000 - Crop Production                       | 3-Digit | C          |           |          | Total (1)     |            |
|      | 0           | 111100 - Oilseed and Grain Farming             | 4-Digit | 0          |           |          | Domain (2     |            |
|      | 0           | 111200 - Vegetable and Melon Farming           | 4-Digit | C          |           |          | Sector (4)    |            |
|      | 0           | 111300 - Fruit and Tree Nut Farming            | 4-Digit | 0          |           |          | ✓ 3-Digit (5) |            |
|      | 0           | 111400 - Greenhouse, Nursery, and Floriculture | 4-Digit | C          |           |          | ✓ 4-Digit (6) | Sector 1   |
|      | 0           | 111900 - Other Crop Farming                    | 4-Digit | 0          |           | l        | Sub-Detail    |            |
|      | 0           | 112000 - Animal Production                     | 3-Digit | 0          |           |          | Adjustmen     | t Mode     |
|      | 0           | 112100 - Cattle Ranching and Farming           | 4-Digit | 0          |           |          | O Top-down    |            |
|      | 0           | 112200 - Hog and Pig Farming                   | 4-Digit | C          |           | ι        | Bottom-up     | 1          |

Figure 3: Adjusted Industry Projections display in the Projection column

5. To cancel an adjustment, click **Undo**. To start over, click the **Reload** button. All adjustments are canceled and the projections are restored to the original values in the database.

6. To save the adjusted data, click the **Save** button. A new projections record is created with an adjusted model type and this projection has its selected flag for the area turned off.

### **Related Content**

Summary

### **Across Areas**

Use the **Across Areas** module to process projection adjustments for specific industries and years, across area groups. This ensures employment projections for individual sub-state areas are consistent, additive, and synchronized with the state totals.

#### **Screen Controls**

- Select an Area drop-down menu
- Select an Industry drop-down menu
- Select a Year drop-down menu
- Adjust button
- Reload button
- Undo button
- Save button
- Selected Area Levels control group
  - Parent Area check box
  - Child Area check box
- Adjustment Mode control group
  - **Top-down** radio button
  - o Bottom-up radio button
- Constrain check boxes

| Short Term 🗸 Long Term         | Occupational R        | Report Manager          | Local Review              | Settings                     |                               | Exit         |
|--------------------------------|-----------------------|-------------------------|---------------------------|------------------------------|-------------------------------|--------------|
| Long Term Adjustments          | Adjust Across Areas   | s to display by checkin | g boxes under "Selected a | '<br>Area Levels' on right s | ide of form                   | <b>↓</b> I × |
| Across Industries              | Select an Area Group: | Freedonia WIAs          |                           | ¥                            |                               |              |
| Across Areas                   | Select an Industry:   | 221000 - Utilities      |                           | ~                            | Adjust                        | Reload       |
|                                | Select a Year:        | 2018                    |                           | ~                            | Undo                          | Save         |
|                                | Status Area           |                         | Level Projec              | tion Constrain               | Selected<br>Parent<br>Child A |              |
| Long-term Industry Projections |                       |                         |                           |                              | Adjustm<br>Top-do<br>Bottom   | 20.537 //    |

Figure 1: Across Areas module

### **Adjust Projections Across Areas**

1. Select an Area Group from the drop-down menu.

- 2. Select an Industry.
- 3. Select a Year.

4. Use the **Selected Area Levels** control group to select the **Parent Area**, **Child Areas**, or both. The **Adjust** button will activate when both the Parent Area and the Child Areas check boxes from the Selected Area Levels control group are selected. As boxes are checked in the Selected Area Levels control group, values for the **Area**, **Level**, and **Projection** will populate in the table.

To perform adjustments on an area group, select both Parent and Child.

| Status | Area                           | Level       | Projection | Constrain |
|--------|--------------------------------|-------------|------------|-----------|
| 0      | Freedonia (000080)             | Parent Area | 27563      |           |
| 0      | Freedonia Balance of State WIA | Child Area  | 0          |           |
| 0      | Freedonia WIA 2 (800002)       | Child Area  | 553        |           |
| 0      | Freedonia WIA 3 (800003)       | Child Area  | 683        |           |
| 0      | Freedonia WIA 4 (800004)       | Child Area  | 959        |           |
| 0      | Freedonia WIA 5 (800005)       | Child Area  | 155        |           |
| 0      | Freedonia WIA 6 (800006)       | Child Area  | 0          |           |

Figure 2: Adjustments across Areas

The **Adjustment Mode** control group is set to **Bottom-up** by default. To make a **Top-down** adjustment, you must edit at least one number in the **Projection** column.

To edit the Projection column, right click and select **Edit**. A pencil icon will display in the **Status** column of the industry projection that was edited and the Top-down adjustment mode will be enabled.

Click the **Constrain** check box to keep the projection value from being adjusted. If you constrain a projection, the additivity of the table may be compromised.

5. Click the **Adjust** button.

### **Projections Suite**

| Sel | lect an Ar               | ea Group: | Freedonia WIAs          |             |            |           | ~  |                      |        |  |
|-----|--------------------------|-----------|-------------------------|-------------|------------|-----------|--|----------------------|--------|--|
| Sel | lect an In               | dustry:   | 221000 - Utilities      |             |            |           | ~ (  | Adjust               | Reload |  |
| Sel | lect a Yea               | r.        | 2018                    |             |            |           | <b>~</b> ](                                  | Undo                 | Save   |  |
|     | Status                   | Area      |                         | Level       | Projection | Constrain | ſ  |                      |        |  |
|     | 1                        | Freedonia | (000080)                | Parent Area |            |           |  | Selected Area Levels |        |  |
|     | 0                        | Freedon   | ia Balance of State WIA | Child Area  |            |           |  | Child Areas          |        |  |
|     | 0                        | Freedon   | ia WIA 2 (800002)       | Child Area  | 553        |           |  | Adjustment Mode      |        |  |
|     | 0                        | Freedon   | ia WIA 3 (800003)       | Child Area  | 683 🛄      |           |  |                      |        |  |
|     | Freedonia WIA 4 (800004) |           | Child Area              | 959         |            |           | <ul> <li>Top-dow</li> <li>Bottom-</li> </ul> |                      |        |  |
|     | 0                        | Freedon   | ia WIA 5 (800005)       | Child Area  | 155        |           |  |                      |        |  |
|     | 0                        | Freedon   | ia WIA 6 (800006)       | Child Area  | 0          |           |  |                      |        |  |

Figure 3: Adjustments have been made

6. Click the **Undo** button to cancel the adjustments to the data. To start over, click **Reload**. All adjustments are canceled and the projections are restored to the original values in the database.

7. Click the **Save** button to save the adjusted data. A new projections record is created with an adjusted model type and this projection has its selected flag set on, with the other selected flag for the area industry turned off.

#### **Related Content**

• <u>Summary</u>

## Long Term Output Menu Items

### Long Term Output Introduction

The **Long Term Output** group menu allows creation of reports or exportation of data from the Long Term Projections application.

| 5.           |                          |
|--------------|--------------------------|
| Long Term    | Output                   |
| Confidentia  | lity                     |
| Create Emp   | loyment from Projections |
| ICT Export   |                          |
| Final Report | ts                       |
| Validate Dat | ta                       |
| Export Indu  | stry Projections         |

Figure 1: Long Term Output group menu

The Long Term Output group menu contains the following selections:

- Confidentiality
- Create Employment from Projections
- ICT Export
- Final Reports
- Validate Data
- Export Industry Projections

# Confidentiality

Use the **Confidentiality** module to flag industries as confidential. This helps prevent releasing industry data to the public where data could potentially identify employers or their information.

The Confidentiality module is available in Short Term and Long Term Projections. Occupational Projections also has a <u>Confidentiality</u> module, but uses different settings. The Notebook is not available in Long Term Confidentiality module.

### **Screen Controls**

- Select an Area drop-down menu
- Confidential check boxes

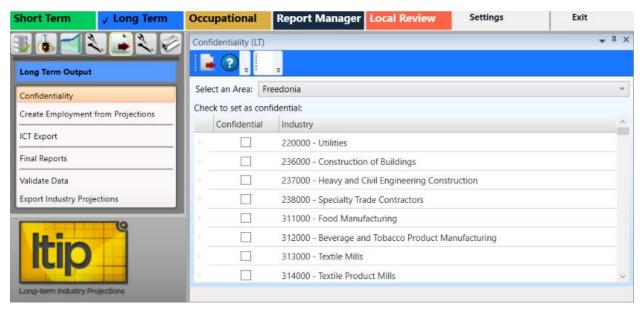


Figure 1: Confidentiality module

#### Mark an Industry as Confidential

1. **Select an Area** from the drop-down menu. The industries with completed projections within the selected area will display.

2. Check the confidentiality box next to each industry you want to identify as confidential. Or, right click the check box or the industry and select the **Toggle Confidentiality** button. Clicking the Toggle Confidentiality button will change the current setting to the opposite setting.

☞ All industries with selected check boxes are treated as confidential. The Industry Projections software does not directly deal with confidentiality, but the checked industry flags carry forward into the ICT records in the Occupational Projections and Report Manager applications.

#### **Create a Report of Confidential Industries**

1. Click the **Export** button from the Active Module Toolbar. A **Save As** dialog box will be displayed.

- 2. Select a save location and type a name for the report.
- 3. Click Save.

The data exports into an Excel spreadsheet. The spreadsheet will contain the list of industries and display whether or not they're confidential.

|   | 1 | A               | В   |
|---|---|-----------------|---|
|   | 1 | confidentiality | industry  |
|   | 2 | FALSE           | 000000 - Total All Industries                     |
|   | 3 | FALSE           | 210000 - Mining                                   |
|   | 4 | FALSE           | 230000 - Construction                             |
| - | 5 | TRUE            | 236000 - Construction of Buildings                |
|   | 6 | FALSE           | 237000 - Heavy and Civil Engineering Construction |
| - | 7 | TRUE            | 238000 - Specialty Trade Contractors              |

Figure 2: Exported confidentiality report

Alternatively, click the **Print** button in the Active Module Toolbar to print a report of industries and their confidentiality.

## **Create Employment from Projections**

**Create Employment from Projections** allows the projections for a selected area and year to be included in the employment historical series. Instead of manually adding values to the state historical series one by one, use the Create Employment from Projections module to copy your selected projections into the employment table. One record is created in the employment table for each projection.

### **Screen Controls**

- Select an Area drop-down menu
- Select a Year drop-down menu
- Create Employment Records button

| Short Term           | ✓ Long Term      | Occupational                            | Report Manager                         | Local Review          | Settings               | Exit               |
|----------------------|------------------|---|--|-----------------------|------------------------|--------------------|
| 364                  |                  |   | from Projections(LT)                   |                       |                        | <b>↓</b> 1 ×       |
| Long Term Output     |                  |   |  |                       |                        |                    |
| Confidentiality      |                  | Select an area and<br>Employment Record | projected year to use to<br>ds' button | create annual employn | nent records, and then | click the 'Create  |
| Create Employment    | from Projections |   |  |                       |                        |                    |
| ICT Export           |                  | Select an Area:                         | Freedonia                              |                       |                        | ~                  |
| Final Reports        |                  | Select a Year:                          | 2018                                   |                       |                        | ~                  |
| Validate Data        |                  |   |  |                       | Greate                 | Employment Records |
| Export Industry Proj | ections          |   |  |                       | Cleate                 | Employment Records |
| Long-term industry P | rojections       |   |  |                       |                        |                    |

Figure 1: Create Employment from Projections module

### **Create Employment from Projections**

- 1. Select an Area from the drop-down menu.
- 2. Select a Year.

3. Click the **Create Employment Records** button. A dialog will display asking you to confirm updating of annual employment records.

4. Click Yes to continue. Click No to cancel.

When complete, a message will be displayed in the Active Module Toolbar. The employment table will contain records for the projected year, for each industry with a selected projection.

| Create | Em | nployment from Projections(LT)    | <b>→</b> ‡ × |
|--------|----|-----------------------------------|--------------|
| 2      | ÷  | Annual Employment Records Created |              |

Figure 2: Annual Employment Records Created

# **ICT Export**

Use the **Industry Control Total (ICT) Export** module to export projected industries to the internal ICT table for use in the Occupational Projections application or to a file for use in other applications or reports. The values exported to the spreadsheet and to the ICT file are the last actual quarterly employment value and the last quarterly projected value for each industry.

A Base Year is determined from the year of the last quarter, and the Projected Year is determined from the year of the last projected quarter. The same base year, or the same projected year value, is the value for all date quarters during the year. The only industries exported to the ICT table or to the spreadsheet file are the industries on the list. If the Selected Industries list needs modification, modify the list and export the industries again. Previously saved ICT projections for the area change to the new listed industries.

### **Screen Controls**

- Select an Area drop-down menu
- Transfer ICT data to Occupational Projections check box
- Use Step Ahead check box
  - 9 Year Horizon Base radio button
  - o 8 Year Horizon Base radio button
- Available Industries table
- Selected Industries table
- Move buttons

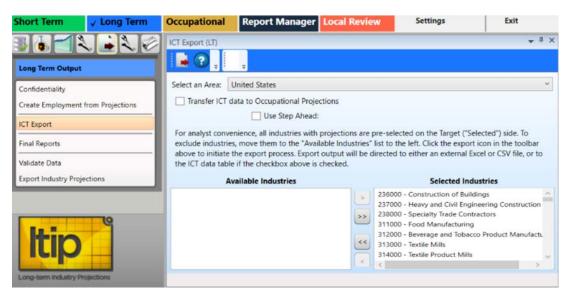


Figure 1: ICT Export module

#### **Utilize ICT Export**

1. **Select an Area** and a list of industries with projections will be displayed in the **Selected Industries** table. Industries that *should not* be exported should be moved to the **Available Industries** table. However, exporting all of the industries is usually typical.

2. To move industries into the Available Industries table (and exclude them from

exportation), select an industry and click the **Move left** sutton.

- Manipulate the additional **move** and **move all** buttons to move industries from the Selected Industries table to the Available Industries table, and vice versa.
- **Right-clicking** any industry opens a context menu which allows you to **Remove** or **Add Selected** (depending on which table you've right-clicked into), **Select All**, or **Unselect All** industries.

Multiple industries can be moved at a time. For help with selecting multiple industries, click <u>here</u>.

#### **Export Data to Occupational Projections**

1. To transfer ICT data to the Occupational Projections application, check the **Transfer ICT data to Occupational Projections** box prior to exporting the data.

2. When the list of selected industries is ready, click the **Export** button on the Active Module Toolbar.

3. A **Finished** message will display, letting you know the ICT data from the Selected Industry table was exported to the ICT table in Occupational Projections. Click **OK**.

#### Export Data to a Spreadsheet

- 1. Ensure the Transfer ICT data to Occupational Projection box is unchecked.
- 2. Click the **Export** button. A **Save As** window will display.
- 2. Select a location and type the name of the file to be exported.
- 3. Click Save.

#### **Use Step Ahead**

To use data prepared in the Step Ahead module:

1. Click the **Use Step Ahead** check box. When you click the Use Step Ahead check box it will activate two radio buttons - one for 9 year and one for 8 year. The system forces you to choose one or the other.

### **Projections Suite**

🗹 Use Step Ahead: 🔿 9 Year Horizon Base 🔿 8 Year Horizon Base

Figure 2: Use Step Ahead check box

2. Select either the **9 Year Horizon Base** radio button or the **8 Year Horizon Base** radio button.

3. Click the Transfer ICT data to Occupational Projections check box.

4. Click the **Export** icon on the Active Module Toolbar to export the Step Ahead data to Occupational Projections.

#### **Related Content**

- Edit ICT
- Step Ahead

# **Final Reports**

The **Final Reports** module enables temporary adjustment, printing, and exporting of industry data within a selected area and projection year.

### **Screen Controls**

- Select an area drop-down menu
- Select the projection year drop-down menu
- Missing base year records control group
  - **Print the report with '0' in the base year column for these records** radio button
  - **Remove these records from the report** radio button
- Preview Report Data button
- Hide Preview button

| Short Term V Long Term             | Occupational       | Report Manager             | Local Review           | Getting Started | Setting    | s Ex                  | xit      |
|------------------------------------|--------------------|----------------------------|------------------------|-----------------|------------|-----------------------|----------|
|                                    | Final Reports (LT) |                            |                        |                 |            |                       | ≁ # ×    |
| Long Term Output                   | 1 🕹 🛹 📀            | 0                          |                        |                 |            |                       |          |
| Confidentiality                    | Select an area:    |                            |                        |                 | Base Year: | Select the projection | on year: |
| Create Employment from Projections | Freedonia          |                            | ~                      |                 | 2008       | 2018 ¥                |          |
| ICT Export                         | There are 1 record | ls with missing base yea   | r data                 |                 |            |                       |          |
| Final Reports                      | Print the repo     | t with '0' in the base yea | r column for these rea | cords           |            |                       |          |
| Validate Data                      | O Remove these     | records from the report    |                        |                 |            |                       |          |
| Export Industry Projections        |                    | 23                         |                        |                 |            |                       |          |
| Long-term industry Projections     | Previe             | w Report Data              |                        |                 |            |                       |          |

Figure 1: Final Reports module

### **Create Final Reports**

1. Select an area from the drop-down menu.

2. **Select the projection year**. Upon selecting an area and projection year, a message will be displayed stating if the selected combination of area and projection year data contains any records missing base year data.

### **Projections Suite**

| inal Reports (LT)   |                                      |            |            | <b>→</b> <sup>‡</sup> |
|---|--------------------------------------|------------|------------|-----------------------|
| 📕 🛹 😮 📜 👘   |                                      |            |            |                       |
| Select an area:   |                                      | Base Year: | Select the | projection year:      |
| Freedonia   | ~                                    | 2008       | 2018       | ~                     |
| here are 1 records with missing   | g base year data                     |            |            |                       |
| There are 1 records with missing  | ) base year data                     |            |            |                       |
| Print the report with '0' in the report withe with '0' in the report with '0' in the rep | e base year column for these records |            |            |                       |
| Remove these records from   | the report                           |            |            |                       |
|   |                                      |            |            |                       |
|   |                                      |            |            |                       |
| Preview Report Data   |                                      |            |            |                       |
|   |                                      |            |            |                       |
|   |                                      |            |            |                       |

Figure 2: Status of records with missing base year data

### 3. Select the **Print the report with '0' in the base year column for these records** or the **Remove these records from the report** radio button.

#### View and Edit the Report

1. Click the **Preview Report Data** button. A data grid will be displayed with industry data from the selected area and projection year.

2. **Right click** a field and select **Edit** or **Delete** from the context menu. The Industry Title and any of the employment values are able to be edited.

| NAICS<br>Code | Industry Title   | Base Year<br>Employment | Projected<br>Employment | Change In<br>Employment | Percent Change |
|---------------|--|-------------------------|-------------------------|-------------------------|----------------|
| 314000        | Textile Product Mills                                    | 0                       | Edit                    | 1,344                   | N/A            |
| 511100        | Newspaper, Periodical, Book, and Directory Publishers    | 33,158                  | Delete                  | 10,328                  | 31.1 %         |
| 511200        | Software Publishers                                      | 4,325                   | 4,513                   | 188                     | 4.3 %          |
| 541100        | Legal Services   | 57,163                  | 76,487                  | 19,324                  | 33.8 %         |
| 541200        | Accounting, Tax Preparation, Bookkeeping, and Payroll St | 49,281                  | 61,226                  | 11,945                  | 24.2 %         |
| 541300        | Architectural, Engineering, and Related Services         | 48,520                  | 59,644                  | 11,124                  | 22.9 %         |
| 541400        | Specialized Design Services                              | 8,125                   | 10,468                  | 2,343                   | 28.8 %         |

Figure 3: Data displays for viewing and editing

3. If **Edit** was selected, enter the desired value and **Tab** into other fields in the record if necessary.

4. Click on another record or press Enter to save changes.

They apply only to the current instance of the Final Report.

To hide the data grid, click the **Hide Preview** button.

To export the data, click the **Export** button on the Active Module Toolbar. To print the data, click the **Print** button.

# Validate Data

Use the **Validate Data** module to validate and extract reports on the disposition of your data.

The Validate Data module is available in both Short Term and Long Term applications. The Short Term application validates monthly data. The Long Term Validate Data module allows you to validate annual data, and data for the entire United States. The Notebook is not available in the Long Term Validate Data module.

#### **Screen Controls**

- Select an Area drop-down menu
- Filter drop-down menu
- Validate button

| Short Term                      | ✓ Long Term      | Occupational       | Report | Manager | Local Review | Settings | Exit                           |
|---------------------------------|------------------|--------------------|--------|---------|--------------|----------|--------------------------------|
| 3648                            |                  | Validate Data (LT) |        |         |              |          | <b>→</b> # ×                   |
| Long Term Output                |                  |                    | ÷      |         |              |          |                                |
| Confidentiality                 |                  | Select an Area:    |        |         |              |          | ¥                              |
| Create Employment               | from Projections | Filter:            | All    |         |              |          | <ul> <li>✓ Validate</li> </ul> |
| ICT Export                      |                  | Severity           | NAI    | CS      | Messages     |          |                                |
| Final Reports                   |                  |                    |        |         |              |          |                                |
| Validate Data                   |                  |                    |        |         |              |          |                                |
| Export Industry Proje           | ctions           |                    |        |         |              |          |                                |
| Itip<br>Long-term Inclustry Pro | Viections        |                    |        |         |              |          |                                |

Figure 1: Validate Data module

### Validate the Data

#### 1. Select an Area.

2. Click the **Validate** button. The validation data errors will be displayed for All filters.

| Sel   | lect an Area: | Freedonia             |   |
|-------|---------------|-----------------------|---|
| Filt  | er:           | All                   | ~ Validate  |
|       | Severity      | NAICS                 | Messages  |
|       | Error         | 000000 - Total All Ir | Parent and child employment data do not equal for<br>dyear 1972. Parent annual employment level: 8635850.<br>Child annual employment level: 4114198 |
|       | Error         | 000000 - Total All Ir | Parent and child employment data do not equal for<br>dyear 1973. Parent annual employment level: 8898190.<br>Child annual employment level: 4239286 |
| Error |               | 000000 - Total All Ir | Parent and child employment data do not equal for<br>dyear 1974. Parent annual employment level: 9051020.<br>Child annual employment level: 4354455 |

Figure 2: Errors listed for Freedonia

- 3. Select a Filter from the drop-down menu. Filter options are:
  - All
  - Industry has Annual Employment Data
  - Sum of Child Annual Employment Equals Parent
  - Industry projection Equals Child Projections
  - Check for Missing Employment Data

After processing, you can the **Export** or **Print** options on the Active Module Toolbar to export or print the report. Use the **Notebook** to add any needed information in Short Term Industry Projections.

## **Export Industry Projections**

The **Export Industry Projections** module allows the exporting of a specific area's industry projections to a spreadsheet file or directly into Report Manager.

The Export Industry Projections module is available in the Short Term and Long Term Projections applications. The Notebook is not available in the Long Term Export Industry Projections module.

### **Screen Controls**

- Export Data to File Local Review Format radio button
- Export Data to File Projections Review radio button
- Transfer Data to Report Manager radio button
  - Source Timeframe drop-down menu
- Source Area(s) drop-down menu

| Short Term V Long Term                                | Occupational                                | Report Manager Local Review   | Settings | Exit         |  |  |
|---|---|---|----------|--------------|--|--|
| Long Term Output                                      | Export Industry Proj                        | ections (LT)  |          | <b>↓</b> # × |  |  |
| Confidentiality<br>Create Employment from Projections |   | you to export industry projections in a form<br>ransfer them directly to Report Manager. Cl<br>export the data. |          |              |  |  |
| ICT Export  | O Export Data to File - Local Review Format |   |          |              |  |  |
| Final Reports   | O Export Data to File - Projections Review  |   |          |              |  |  |
| Validate Data   | 🔘 Transfer Data t                           | o Report Manager.   |          |              |  |  |
| Export Industry Projections                           | Source Area(s):                             |   | •        |              |  |  |

Figure 1: Export Industry Projections module

#### **Export Industry Projections**

- 1. Select a **Source Area(s)** from the drop-down menu.
- 2. Select one of the three radio buttons, depending on the type of export required.

1. Select the **Export Data to File - Local Review Format** or **Export Data to File - Projections Review** radio button.

2. Click the **Export** button on the Active Module Toolbar. A **Save As** dialog box will be displayed.

- 3. Enter a file name and select a location to save the file to.
- 4. Click Save.

Or

1. Select the Transfer Data to Report Manager radio button.

2. Select the **Source Area(s)** and **Source Timeframe** from the drop-down menus.

- 3. Click the **Export** button on the Active Module Toolbar.
- 4. Use the **Browse Data** menu selection in Report Manager to view the data.

# Long Term Compare Menu Items

### Long Term Compare Introduction

Use the **Long Term Compare** group menu to configure an Upload Area account, upload data, and create geographic comparisons.



Figure 1: Long Term Compare group menu

The Long Term Compare group menu contains the following selections:

- Upload Area Connection
- Upload
- Long Term Geographic Comparison

# **Upload Area Connection**

Use the **Upload Area Connection** module to configure an Upload Area account. Contact the Utah Projections Help Desk for help with setting up an Upload Area account. There should be only one registered analyst per state.

This module is available in the Short Term, Long Term, and Occupational Projections applications. The Notebook is not available in the Long Term Upload Area Connection module.

### **Screen Controls**

- Service URL field
- Email field
- Password field
- Connect button

| Short Term                 | ✓ Long Term     | Occupational                           | Report Manager   | Local Review             | Settings | Exit  |
|----------------------------|-----------------|--|--|--------------------------|----------|---|
| 3                          | 1.              | Staging Area Con                       | nection  |                          |          | <b>↓</b> I ×  |
| Upload Area Connu          | _               | Geograph<br>This screen allow          | nic Comparison<br>s you to configure the requ<br>tions Support Site email ar | uired settings for conne |          | The second se |
| Long Term Geogra           | phic Comparison | Service URL: ht<br>Email:<br>Password: | tps://matrixservices.project   | ionscentral.com/         |          |   |
| Itip<br>Long-term industry | Projections     |  |  | Connect                  | )        |   |

Figure 1: Upload Area Connection module

### Login to Geographic Comparison Upload Area Account

- 1. Enter your Projections Support Site email address in the Email field.
- 2. Enter your **Projections Support Site password** in the **Password** field.

3. Click **Connect**. A Finished dialog box will be displayed if the connection is successful.

4. Click **OK** to return to the **Upload Area Connection** module.

*r* If the connection is unsuccessful, the following message will be displayed:

Email / Password combination failed. It's possible your account has not yet been approved. Please check to make sure you entered eveything correctly. If you have any questions, you can contact Brett Judd at bdjudd@utah.gov

Figure 2: Connection failure dialog

5. Check your email address and password combination and try again. If multiple failures occur, contact the Utah Projections Help Desk for assistance.

#### **Related Content**

- Validation
- State Self Publish

# Upload

Use the **Upload** module to select the source for your industry comparison. This module is available in the Short Term and Long Term applications. The Notebook is not available in the Long Term Upload module.

#### **Screen Controls**

- Projection Suite Data radio button
  - State drop-down menu
  - o Export To Upload Area radio button
  - Export To File radio button
  - o File field
  - o ... button
- Import File radio button
  - Select file to import field
  - o Browse button
  - Detected File Type field
  - o **Import** button

| Short Term               | / Long Term | Occupational      | Report Manager           | Local Review            | Exit         |
|--------------------------|-------------|-------------------|--------------------------|-------------------------|--------------|
|                          |             | Geographic Compa  | arison Upload            |                         | <b>→</b> ‡ × |
| Long Term Compare        |             |                   | ÷                        |                         |              |
| Upload Area Connectio    | n           | Select the source | e of your Industry Compa | re data for validation. |              |
| Upload                   |             | Projection S      | uite Data 🛛 Import Fi    | le                      |              |
| Long Term Geographic     | Comparison  | State:            |                          | v                       |              |
|                          |             |                   |                          |                         |              |
| Long-term Industry Proje | ctions      |                   |                          |                         |              |

Figure 1: Upload module

### **Upload Industry Compare Data for Validation**

- 1. Select the source.
  - 1. Select Projection Suite Data.
  - 2. Select a State. The data process and a validation dialog displays.

3. Select **Export To Upload Area** or **Export To File**. Export To Upload Area is not available if the validation fails.

4. If you selected **Export To Upload Area**, click **Send Compare Data**. A **Successfully Submitted all Projections** message displays.

5. Click **OK**.

Or

1. If you selected **Export To File**, select a **File** by clicking the ... button. A Save As dialog will be displayed.

- 2. Select a name and location for the file, then click **Save**.
- 3. Then, on the Active Module Toolbar, click **Export**.
- 4. Click Save.

Or

- 1. Select Import File.
- 2. Click **Browse** and select a file to import.
- 3. Click Import.

4. Select **Export To Upload Area** or **Export To File**. Export To Upload Area is not available if the validation fails.

5. If you selected **Export To Upload Area**, click **Send Compare Data**. A **Successfully Submitted all Projections** message displays.

6. Click **OK**.

# Long Term Geographic Comparison

Use the **Long Term Geographic Comparison** module to compare geographic data. You can create comparisons for:

- Compare to States
- Region Compare
- Workforce Compare
- Services Compare
- Goods Compare
- Compare to Nation

Data is stored in the Upload Area for all states which have submitted data. Long Term Geographic Comparison requires data from at least three states.

This module is available in the Long Term and Occupational Projections applications. It is important to make the distinction: the Long Term Geographic Comparison module under the Long Term application compares *industry* data; the Long Term Geographic Comparison module in the Occupational Compare group menu utilizes *occupational* data. The Notebook is not available in the Long Term Upload module.

If you do not have an Upload Area account, an error message displays. You are unable to make comparisons until you have the account set up. Reference the <u>Upload Area Connection</u> module for information on creating an account.

### **Screen Controls**

- Select the base state drop-down menu
- Geographic Comparison button
- Compare to States radio button
- Region Compare radio button
- Workforce Compare radio button
- Services Compare radio button
- Goods Compare radio button
- Compare to Nation radio button
- Available States screen
- Selected States screen
- Move Right button
- Move Left button
- All Right button
- All Left button

## **Projections Suite**

| Short Term 🗸 Long Term  | Occupational Rep  | ort Manager Local Review | Getting Start  | ted Setting     | IS Exit   |
|---|---|--------------------------|--|-----------------|---|
| B C Compare   | Long Term Geographic Co   | mparison                 |  |                 | * I X   |
| Upload Area Connection<br>Upload<br>Long Term Geographic Comparison | Select the base state 1<br>Freedonia - 4/10/20<br>Compare to States   | 18 3:19:07 PM v          | states as the comparison group and click Geog<br>rkforce Compare. O Services Compare |                 | re listed with the last upload date.<br>Geographic Comparison |
| ltip  | Illinois - 6/18/2018 4:21<br>Indiana - 7/3/2018 9:44:<br>Iowa - 2/23/2018 2:15:0<br>Missouri - 6/19/2018 12 | 04 AM<br>8 PM            | × × ×  | Selected States |   |

Figure 1: Long Term Geographic Comparison module

To generate comparisons from the Long Term Geographic Compare module, select the type of comparison using the radio buttons. Submitted data includes the state name and submittal date and time. The date and time is used to ensure data compared is the latest, most updated data.

#### **Compare to States**

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.

2. Select the states from the **Available States** box and move them to the **Selected States** box. Click the state then click the arrow button. Or, click the double arrow button to move all **Available States** to the **Selected States** box.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### **Region Compare**

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.

#### 2. Select the Region for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

4. Click OK.

5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### Workforce Compare

1. Select the base state.

#### 2. Select the Workforce Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### **Service Compare**

- 1. Select the base state.
- 2. Select the Services Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### **Goods Compare**

- 1. Select the base state.
- 2. Select the Goods Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

**Projections Suite** 

### **Compare to Nation**

1. Select the base state.

2. Click **Geographic Comparison**. When the comparison is complete, a message displays.

3. Click OK.

4. Click the **Export** icon in the Active Module Toolbar.

5. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

## **Related Content**

Geographic Comparison File Format

# Long Term Utilities Menu Items

# Long Term Utilities Introduction

The **Long Term Utilities** group menu enables a variety of maintenance functions within Long Term Industry Projections.



Figure 1: Long Term Utilities group menu

The Long Term Utilities group menu contains the following selections:

- Export Employment Series
- Export Variable Series
- Delete Area Employment
- Backup Database
- <u>View System Log</u>
- <u>Check for Updates</u>
- Update Database
- Add Step Ahead Table

# **Export Employment Series**

Use the **Export Employment Series** module to create importable spreadsheets containing employment series data.

#### **Screen Controls**

- Select an area drop-down menu
- Select a date range spinners
  - o Max button
- Move buttons

| Short Term 🗸               | Long Term | Occupational                               | Report Manager                 | Local Review | Getting Started | Settings            | Exit         |
|----------------------------|-----------|--|--------------------------------|--------------|-----------------|---------------------|--------------|
| 3642                       | <b>1</b>  | Export Employment                          | Series (LT)                    |              |                 |                     | <b>▲</b> † × |
| Long Term Utilities        |           |  | Ŧ                              |              |                 |                     |              |
| Export Employment Serie    | es        | Select an area:                            | United States                  |              |                 |                     | v            |
| Export Variable Series     |           | Select a date range                        | From 1970                      | To 2026 🕀 📖  | ax              |                     |              |
| Delete Area Employment     | t         |  | Available Industrie            | s            |                 | Selected Industries |              |
| Backup Database            |           | 000000 - Total All I                       | ndustries                      | 1            | ×               |                     |              |
| View System Log            |           | 006010 - Self Empl                         | oyed Workers, All Jobs         |              |                 |                     |              |
| Check For Updates          |           | 101000 - Goods Pr<br>101100 - Natural R    | oducing<br>esources and Mining |              | >               |                     |              |
| Update Database            |           | 110000 - Agricultu                         | re, Forestry, Fishing and      | Hunting      | >>              |                     |              |
| Add Step Ahead Table       |           | 111000 - Crop Prod<br>112000 - Animal Prod | roduction                      |              | <<              |                     |              |
|                            | 9         | 113000 - Forestry a<br>113300 - Logging    | ind Logging                    |              | <               |                     |              |
| Itip                       |           |  | lunting and Trapping           |              |                 |                     |              |
|                            | _         |  | Activities for Agriculture     | and Forestry |                 |                     |              |
|                            |           | 210000 - Mining                            |                                |              | /               |                     |              |
| Long-term Industry Project | tions     |  |                                |              |                 |                     |              |

Figure 1: Export Employment Series module

#### **Create an Employment Series Spreadsheet**

- 1. Select an area from the drop-down menu.
- 2. Select a date range using the spinners.
- Click Max to add the longest time frame possible.

3. Select industries from the table of Available Industries to add to the Selected Industries table.

- Select the Available Industry, then **right click** with the mouse to add the industry to the Selected Industries table.
- You can also use the **move** buttons to manipulate the contents of each table.

4. When you have finalized the list of Selected Industries, click the **Export** button in the Active Module Toolbar.

5. In the **Save As** pop up window, select a location for the file and enter a file name.

6. Click Save.

The spreadsheet contains the FIPS, area code, area type, date, and employment values for each industry selected.

### **Related Content**

• Employment Spreadsheet Format 2 - Industries as Columns

# **Export Variable Series**

Use the **Export Variable Series** module to export historical variable data. This module creates importable spreadsheets containing variable time series data. Variable data for areas is exported in the Long Term application.

#### **Screen Controls**

- Select Area drop-down menu
- Select a data range spinner
   Max button
- Available Variables table
- Selected Variables table
- Move buttons

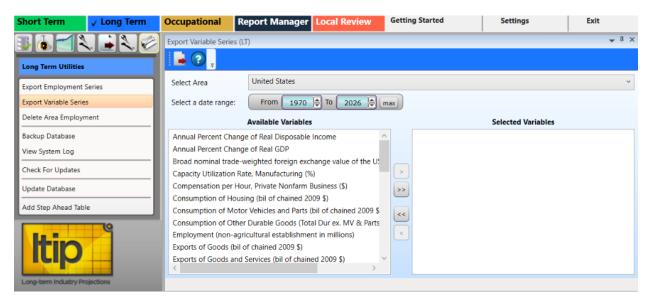


Figure 1: Export Variable Series module

### **Export Variable Data**

- 1. Select an area from the Select Area drop-down menu.
- 2. Select a date range using the spinner controls.
- Click the Max button to automatically select the longest time frame possible.

Select variables from the Available Variables table and click the Move button. The variable will be moved to the Selected Variables table.

- Use the additional move and move all buttons to move variables from the Available Variables table to the Selected Variables table, and vice versa.
- Right-clicking any variable opens a context menu which allows you to **Remove** or **Add Selected** (depending on which table you've right-clicked into), **Select All**, or **Unselect All** variables.

4. Click the **Export** button on the Active Module Toolbar. A **Save As** dialog box will be displayed.

- 5. Enter a file name and select the destination to save the file.
- 6. Click Save.

#### **Related Content**

- Variable Directory (LT)
- Review Variables (LT)

# **Delete Area Employment**

The **Delete Area Employment** module enables deletion of all employment records for a selected area.

The Delete Area Employment module is available in the Short and Long Term Projections applications. The Short Term Delete Area Employment module deletes monthly data; the Long Term module deletes annual data.

## **Screen Controls**

- Select an Area drop-down menu
- Delete all employment for area button

| Short Term V Long Term                             | Occupational    | Report Manager   | Local Review    | Exit         |
|--|-----------------|------------------|-----------------|--------------|
| Long Term Utilities                                | Delete Area Emp | oloyment (LT)    |                 | <b>≁</b> ‡ × |
| Export Employment Series<br>Export Variable Series | Select an Area: | Select Area      |                 | Ÿ            |
| Delete Area Employment                             |                 | Delete all emplo | oyment for area |              |
| Backup Database<br>View System Log                 |                 |                  |                 |              |
| Check For Updates                                  |                 |                  |                 |              |
| Update Database<br>                                |                 |                  |                 |              |
| Long-term Industry Projections                     |                 |                  |                 |              |

Figure 1: Delete Area Employment module

#### **Delete Employment Records for a Specific Area**

#### 1. Select an Area.

2. Click the **Delete all employment for area** button. A **Delete area employment** dialog box will be displayed:



Figure 2: Verification of deletion of employment records

3. Click **Yes** to delete the records. Click **No** to keep the records.

# **Backup Database**

Use the **Backup Database** module to create a copy or archive the existing data in the database so the information can be restored if needed.

#### **Backup Changes in the Database**

1. Click the **Backup Database** menu choice from the **Occupational Utilities** group menu. The backup process will begin immediately. When the backup is complete, the following screen will be displayed:

| Backup Database (OP)           |  |
|--------------------------------|--|
| Backup complete                |  |
| Click OK to close this window. |  |
| ОК                             |  |

Figure 1: Backup Database dialog box

2. Click OK.

If there is an issue with the backup process, a Backup error dialog displays. Read the error information and click OK to close the window. Correct any errors and select the Backup Database module to try again.

### Set a Backup Location

If there is no backup directory selected in the <u>DB Setup Tool</u>, an error will be displayed. To select a backup folder:

1. Double-click the Projections Suite Database Tool icon on your desktop, or navigate to it through the Start menu.

#### **Backup Database**

|   | Diagnostics                                   |   |                          |   |   |
|---|---|---|--------------------------|---|---|
| Credentials<br>Server Informa                                   | tion  |   |                          | Tasks<br>Required Steps:  | Optional Steps:   |
| Server Adminis<br>Username:<br>Password:                        | SEDTS-L1LF-4GNH()<br>strator<br>Windows Login | SQLEXPRESS   Port: 1433  PS Application User Username: Password:  Use Windows Login | Connect                  | <ul> <li>1. Create Database</li> <li>2. Create User</li> <li>3. Add Required Data</li> <li>4. Save Configuration</li> </ul> | <ul> <li>Add Demo Data</li> <li>Restore Database</li> <li>Delete Database</li> <li>Uninstall FoxPro driver</li> </ul> |
| Database Nam<br>ProjectionsSu<br>Database Back<br>Location: C\U | up Folder                                     | 9   |                          |   | Help<br>Exit  |
|   | Please click Help                             | or read the Setup manual for instructions on  | configuring these option | 15.   |   |
| rogress Informat<br>Overall Progress:<br>File Progress:         |   |   |                          |   |   |
| Ready   | Time  | Process Status Descr  | iption                   | Info  |   |

Figure 2: Projections Suite Database Tool, browse and select a database backup location highlighted

- 2. Click the **backup folder icon** in the DB Setup Tool.
- 3. Select a location for your database backup folder.
- 4. Click OK.
- 5. Click the (Step 4) Save Configuration button.
- 6. Exit the database tool.

#### **Related Content**

Projections Suite Database Setup Tool

# **View System Log**

The **View System Log** module is used in the event Projections Suite is not functioning properly. A copy of the System Log may be required to troubleshoot your Projections Suite environment. This module is available in Short Term, Long Term, and Occupational Projections.

#### View the System Log

- 1. Click the View System Log menu choice. Two dialog boxes will be displayed:
  - View System Log instructions dialog box, containing this message:



If you have been asked to provide your log to Projections Suite support personnel, please save the log displayed in Notepad to your desktop and then attach it to an email addressed to your support contact. You can then close this window.

Figure 1: Instructions for sending the System Log to a support contact

• Notepad log file containing the log information:

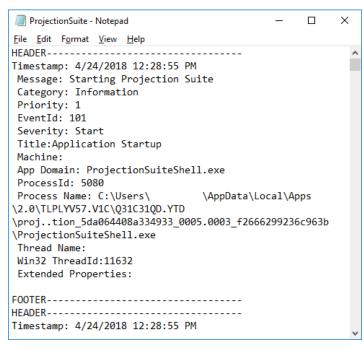


Figure 2: Projections Suite Log

# **Check for Updates**

The **Check for Updates** module is available in Short Term, Long Term, and Occupational Projections. To check for updates to the Projections Suite application:

1. Select the **Check For Updates** option from the **Utilities** group menu.

2. Select the **Click here to check for updates** button. If the application is up to date, the following message will be displayed:

| rojections Suite     | wessage                  | _  |
|----------------------|--------------------------|----|
| No update available. | Proceed with projecting! |    |
|                      |                          | OK |

Figure 1: Projections Suite Message dialog box

# **Update Database**

Use the **Update Database** module to update the Industry Directory with industries that are not in your directory. The Update Database module is the same in the Short Term and Long Term Projections applications. The Notebook is not available in the Long Term Update Database module.

#### **Screen Controls**

- Update Industry Directory button
- Update Titles check box

1. Select the **Update Database** module from the Long Term Utilities group menu. The Update Database module will be displayed.

| Short Term 🗸 Long Term   | Occupational    | Report Manager Local Review | Settings | Exit         |
|--|-----------------|-----------------------------|----------|--------------|
| Long Term Utilities  | Update Database | (LT)                        |          | <b>↓</b> 1 × |
| Export Employment Series<br>Export Variable Series<br>Delete Area Employment | Update Industry | itles                       |          |              |
| Backup Database<br>View System Log<br>Check For Updates                      | Action          | Message                     |          |              |
| Update Database<br>Add Step Ahead Table                                      |                 |                             |          |              |
| Long-term industry Projections   |                 |                             |          |              |

Figure 1: The Long Term Update Database module

2. To update the titles of industries in your directory, click the **Update Titles** check box. **If you use your own titles, do not select Update Titles**.

3. Click on the **Update Industry Directory** button. The Update Information table will display any system messages, or the following dialog box will be displayed:

| The Industry D | rectory was NOT upo | lated, no changes |
|----------------|---------------------|-------------------|
| were found.    |                     |                   |

Figure 2: Update Industry Directory dialog

# **Add Step Ahead Table**

The **Add Step Ahead Table** module creates a Step Ahead table for use in the Projections database. If the update option (Step3) in the <u>Database Setup Tool</u> has been run, the Step Ahead table will have been created. This module is an alternative way to create the table without involving the system administrator to run the Database Setup Tool.

### **Screen Controls**

• Create Step Ahead Table button

| Short Term   | ✓ Long Term | Occupational      | Report Manager | Local Review | Settings | Exit         |
|--|-------------|-------------------|----------------|--------------|----------|--------------|
| Long Term Utilitie   | S           | Add Step Ahead Ta | able (LT)      |              |          | <b>↓</b> I × |
| Export Employmen<br>Export Variable Ser<br>Delete Area Emplo | ries        | Create Step Ahee  |                |              |          |              |
| Backup Database<br>View System Log                           |             | Action            | Message        |              |          |              |
| Check For Updates  | 5           |                   |                |              |          |              |
| Add Step Ahead Ta  | able        |                   |                |              |          |              |
| Long-term industry   | Projections |                   |                |              |          |              |

Figure 1: Add Step Ahead Table module

# **Create Step Ahead Table**

1. Click the **Create Step Ahead Table** button. The Step Ahead table will be created.

2. If the Step Ahead table is already created, the following dialog box will be displayed:

# **Projections Suite**



Figure 2: Add Step Ahead Table dialog box

3. Click OK.

# **Related Content**

• Step Ahead

# **Occupational Projections**

# **Occupational Projections Introduction**

**Occupational Projections** (OP) provides analysts with information to make rational decisions regarding job training, education, and careers. The information is used by career counselors, students, job seekers, career changers, educators, and training officials. Projected staffing patterns are applied to industry projections, resulting in Occupational Projections.

Information on Occupational Projections is available on the Projections Central Support site, under <u>Occupational Projections Resources</u>. The OP Resources contains calculation procedures, national data files, and other helpful information. Use these resources to get started with Occupational Projections.



Figure 1: Occupational Projections application

There are six basic concepts used to calculate occupational projections:

- Occupational estimates by industry for the base year are used as the starting point.
- Occupational estimates of self-employed workers are added.
- Occupational estimates are then converted to a percent within each industry to create a staffing pattern.

- The forecasts of changes in occupational staffing patterns, known as change factors, are applied to the base year staffing patterns to calculate a projected year staffing pattern.
- State industry projections are then multiplied by the projected year staffing pattern, resulting in a projection for each occupation.
- Occupational openings, due to the need to replace workers leaving an occupation, are added to the projected change in the openings, resulting in the final estimate for separation rates.

The Occupational Projections application contains 40 modules under the following group menu selections:

- Occupational Data (F5)
- Occupational Analysis (F6)
- <u>Occupational Projections</u> (F7)
- Occupational Output (F9)
- <u>Occupational Compare</u> (F12)
- Occupational Utilities (F11)

# **Create an Occupational Projection**

This section is meant to be an end-to-end guide for creating an Occupational Projection. Visit the <u>Occupational Projections Resources</u> page on the <u>Projections</u> <u>Central Support</u> website for additional, helpful information when producing Occupational Projections.

### **Produce Occupational Projections**

#### 1. Pre-Projection Decisions and Adjustments

These decisions and adjustments should be made before starting to produce Occupational Projections or forecasts.

Adjust Industry Employment to Match Industry and Ownership of OES Industries:

- Postal Service is classified by Industry and Federal Government Ownership. There may be small amounts of contracted Private Ownership Postal Services employment.
  - o 491 Postal Service
  - o 4911 Postal Service
- Educational Services are classified by Industry and Private, State Government, and Local Government Ownership. Educational Services is the sum of Private, State, and Local Educational Services employment. Subtract State and Local Government Educational Services from State and Local Government and add to Private Education Services.
  - o 611 Educational Services
  - o 6111 Elementary and Secondary Schools
  - o 6112 Junior Colleges
  - o 6113 Colleges, Universities, and Professional Schools
  - o 6114 Business Schools, and Computer and Management Training
  - o 6115 Technical and Trade Schools
  - o 6116 Other Schools and Instruction
  - o 6117 Educational Support Services

The Occupational Projections application uses the following to produce Occupational Projections and calculate annual average job openings:

- National Files
  - o <u>Change Factors</u>, by Industry and Occupation
  - o Self Employed Ratios, by Occupation
  - o <u>Separation Rates</u>, by Occupation
  - Occupational Assignments for Education, Work Experience, and Job Training, by Occupation

- Long or Short Term Industry Based Year Employment Estimates and Projected Year Employment
- Staffing Patterns

The following files are pre-loaded in the Occupational Projections application under Occupational Data:

- Geographic, Industry, and Occupation Directories
- National Staffing Patterns Run the <u>Update Database</u> module to populate when new national data is available.
- National Files

#### Manage Areas

- Area Set Up predefined areas
  - o States
  - o Counties
  - Metropolitan Statistical Areas
  - $_{\odot}\,$  Micropolitan Statistical Areas
- Area Set Up user defined areas
- Area Groups user defined grouping of existing areas

#### Directories

Industry Directory

Industry Codes cross-walked from <u>NAICS</u> codes. Use to review or adjust industries.

Occupation Directory

Occupational Codes cross-walked from <u>SOC</u> codes. Use to review or adjust occupations.

#### National Files

Changes can be made to these files but it is not recommended. If changes are made to the national files, the changes are used for every area that Occupational Projections are produced.

- National Change Factor File
  - o Accounts for shifting occupational composition within an industry
  - National calculation for a 10-year period
  - o If no factor is found, the factor defaults to 1.0
  - Applied to base year staffing pattern matrix
  - Apply resulting matrix to industry projection
- National Self Employment Ratios File
  - o Includes primary and secondary workers

- Ratio is applied to occupation total across all industries for base and projected years
- National Separations Rates File
  - o Calculated for occupation total across all industries
  - o Movement in and out of an existing occupation
- National Occupational Education and Training Assignments File
  - o Education 8 categories
  - Training 6 categories
  - Work Experience 3 categories
- National Staffing Patterns
  - National Matrix

### 2. Data Quality Check

• Before starting the Occupational Analysis module, run a <u>Data Quality Check</u> on both the Industry and Occupation tabs, and correct any errors.

## 3. Import Data

- If you use the Long Term or Short Term Projections Systems to produce industry employment projections, you do not need to import the ICT file. The file already exists in a subdirectory ready for use in the Occupational Projections system.
- If you are importing the ICT file, it must be in the right file structure. See the ICT Spreadsheet Format topic under the File Formats topic for an example of the file structure.
- Instructions for importing the ICT file are located under the <u>Import ICT</u> topic. **Important**: The ICT file must be in the Occupational Projections System before you import staffing patterns.
- The OES staffing patterns are exported from LEWIS in a file named mmexport.dbf. Instructions for extracting the file can be found at <u>Extracting OES</u> <u>Staffing Patterns from EDS</u>. The OES staff responsible for the LEWIS file should provide the file for use in the Occupational Projections System. It is recommended that the staffing patterns come from LEWIS.
- <u>Import Staffing Pattern</u> file into the Occupational Projections application. If there are errors, correct the errors then re-import the file. Imported staffing patterns will append or update existing records.
- Confidentiality Flags from the LEWIS file are maintained throughout the Occupational Projections application.

### 4. Check for Non-Matches

1. Use the <u>ICT/Staffing Pattern Match</u> module to check for non-matches by comparing the industry codes on the ICT file to the OES staffing patterns. All non-matches must be corrected before proceeding.

2. <u>Copy Staffing Patterns</u> - Staffing patterns can be copied from one geographic area to another area.

3. Delete the Staffing Pattern if there is no ICT Match. Use the <u>Edit Staffing</u> <u>Pattern</u> module to delete data.

Or

Add Base and Projected Employment to ICT. Use the Edit Staffing Pattern module to add data.

4. Rollup Staffing Pattern - Roll up staffing patterns to match the ICT.

#### 5. Review and Edit Data

1. Review using ICT/Staffing Pattern Match.

2. Use <u>Edit Staffing Pattern</u> to add, edit, or delete.

3. Use <u>Edit ICT</u> to add, update, or delete Industry base year employment and Industry Projections. Primary and secondary confidentiality flags can be selected in this module. If an industry is checked for confidentiality, all occupations will be confidential for that industry when projections are calculated.

#### 6. Develop Occupational Projections

1. <u>Calculate Projections</u>.

- Select Industries View and the Industry Totals tab, then click Calculate **Projections**. Projections for *all occupations in all industries* are calculated.
- Select Industries View and the Occupations Within Industries tab, then click Calculate Projections. Projections for occupations only in the industry selected are calculated.

2. <u>Calculate Self Employed</u> - You can add values or select **Create ICT records** to add them.

3. <u>Reconcile</u> - Reconcile projections forces employment to ICT totals.

4. <u>Aggregate</u> - Click **Process** to calculate survey-level replacements and aggregate survey-level replacement to summary levels.

### 7. Diagnostic Exports

1. Use <u>Diagnostic Exports</u> to export outputs.

# **Occupational Data Menu Items**

# **Occupational Data Introduction**

The **Occupational Data** group menu enables the management of areas, industries, and occupations. Importing of data, manipulation of data, and review tools are also available.

| Occupat    | ional Data     |          |  |
|------------|----------------|----------|--|
| Manage     | Areas          |          |  |
| Industry   | Directory      |          |  |
| Occupat    | ion Directory  |          |  |
| Import I   | ст             |          |  |
| Import S   | taffing Patter | 'n       |  |
| Edit ICT   |                |          |  |
| Edit Staff | fing Pattern   |          |  |
| Edit Cha   | nge Factors    |          |  |
| Edit Self  | Employed Ra    | itios    |  |
| Edit Sep   | aration Rates  |          |  |
| Edit Occ   | upational Ass  | ignments |  |

Figure 1: Occupational Data group menu

The Occupational Data group menu contains the following selections:

- Manage Areas
- Industry Directory
- Occupation Directory
- Import ICT
- Import Staffing Pattern
- Edit ICT
- Edit Staffing Pattern
- Edit Change Factors
- Edit Self Employed Ratios
- Edit Separation Rates
- Edit Occupational Assignments

# **Manage Areas**

Use the **Manage Areas** module to select and customize areas for Industry and Occupational Projections. Manage Areas organizes the basic geographical areas your projections will be calculated from. You can select your state, add or change area types, add sub-state areas, and create Area Groups. Area Groups are used in sub-state projections and the Project Multiple Regions (<u>ST</u> and <u>LT</u>) modules.

The Manage Areas module is available in the Short Term, Long Term, and Occupational Projections applications. The changes you make in any of these modules populates throughout the applications.

#### **Screen Controls**

Area Setup section

- Right Click Context Menu (United States)
  - Show All States
  - Hide Unchecked States
- Right Click Context Menu (state)
  - Show All Area Types
  - Show Area Types with Areas
  - Add Area Type
  - o Create Area Group
  - Print Area Types
  - Print Areas
  - Print Area Groups
- Right Click Context Menu (Substate)
  - o Add Area
  - Edit Area Type
  - Print Area Types
  - Delete Area

#### Area Groups section

- Right Click Context Menu (Highest Level)
  - Delete Area Group
  - Print Area Groups
- Right Click Context Menu (Substate)
  - Delete Area Group Member

# **Projections Suite**



Figure 1: Manage Areas module

#### Area Setup Section of the Screen

1. Right click the State Area you want to work with to open its context menu.

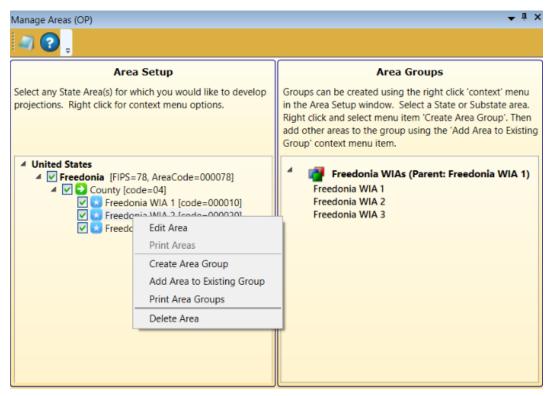


Figure 2: Context menu for working with State Areas

Depending on the changes needed to this area, click the appropriate option from the following:

- Edit Area
- Print Area
- Create Area Group
- Add Area to Existing Group
- Print Area Groups
- Delete Area

#### Edit an Area

1. Click Edit Area. The Edit Area dialog box will display:

| Edit Area      |                              |
|----------------|------------------------------|
| Update an Area | name and corresponding Code: |
| Area Name:     | Freedonia WIA 2              |
| Area Code:     | 000020                       |
| Enter code     | of exactly 6 digits          |
|                |                              |
|                | OK Cancel                    |

Figure 3: Edit Area dialog box

- 2. Change the Area Name and/or Area Code.
- 3. Click OK.

#### **Print Areas**

1. Select **Print Area Groups** from the context menu. This menu choice is accessed by right-clicking the second highest level (Freedonia, in this example) in the **Area Setup** section. The **Print Preview** screen will be displayed.

2. Click the **Print**  $\boxed{}$  icon to print the area's data.

#### **Create an Area Group**

1. Right click on the 2nd level in the Area Setup screen section.

#### **Projections Suite**

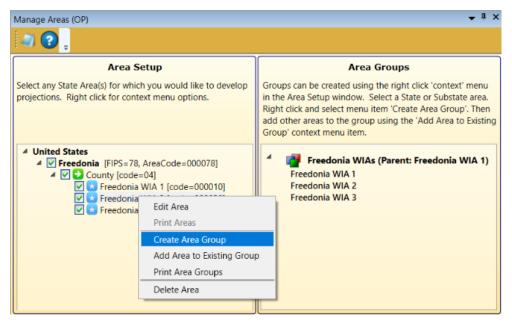


Figure 4: Create Area Group, to add to the Area Groups screen section

2. Click **Create Area Group**. The **Create Area Group** dialog box will be displayed:

| Create Area Group  |
|--|
| This action creates a new Area Group that is composed of a 'parent'<br>area and can have other areas called 'children'. Children should be<br>areas contained within the parent area, and may be added at any<br>time. |
| In addition, a 'balance of state' area can be created if the parent<br>area is not in any of the children.   |
| To create the group, enter the group name below and click OK   |
| Parent Area  |
| Area: Freedonia WIA 2  |
| FIPS: 78   |
| Type: County   |
| Code: 04 - County  |
|  |
| New Group Name: Test Group   |
|  |
|  |
| OK Cancel  |

Figure 5: Create Area Group dialog box

3. Name the new Area Group.

4. Click **OK**. This will add the new Area Group (named Test Group, in this example) to the **Area Groups** section of the screen.

| Manage Areas (OP)  | ≜ ù ×   |
|--|---|
| 🔄 😮 🖕  |   |
| Area Setup   | Area Groups   |
| Select any State Area(s) for which you would like to develop<br>projections. Right click for context menu options.   | Groups can be created using the right click 'context' menu<br>in the Area Setup window. Select a State or Substate area.<br>Right click and select menu item 'Create Area Group'. Then<br>add other areas to the group using the 'Add Area to Existing<br>Group' context menu item. |
| <ul> <li>✓ United States</li> <li>✓ Freedonia [FIPS=78, AreaCode=000078]</li> <li>✓ ✓ County [code=04]</li> <li>✓ ✓ Freedonia WIA 1 [code=000010]</li> <li>✓ ✓ Freedonia WIA 2 [code=000020]</li> <li>✓ ✓ Freedonia WIA 3 [code=000030]</li> </ul> | <ul> <li>Freedonia WIAs (Parent: Freedonia WIA 1)<br/>Freedonia WIA 1<br/>Freedonia WIA 2<br/>Freedonia WIA 3</li> <li>Test Group (Parent: Freedonia WIA 2)</li> </ul>  |

Figure 6: The new Area Group (Test Group) is added

5. Continue adding areas to the Area Group by **right-clicking** and selecting **Add Area to Existing Group** from the context menu. Select a group from the dropdown menu to add the area to the Area Group, then click **OK**.

#### **Delete Area**

- 1. Right click on the area to select it.
- 2. Select **Delete Area**. The following dialog box will be displayed:

| # Records | Database Record Type   |
|-----------|------------------------|
| 1         | Area                   |
| 2242      | AnnualEmployment       |
| 71        | LTIndustryProjection   |
| 26550     | MonthlyEmployment      |
| 1         | Notebook               |
| 24        | STMultipleRegionPrelim |

Figure 7: Delete Area dialog box

**Projections Suite** 

3. To delete the area, click **OK**. Click **Cancel** to keep the area.

### **Delete an Area Group**

1. Right click the Area Group to select it for deletion.



Figure 8: Delete the Area Group, Test Group

2. Select **Delete Area Group** from the context menu. You will be prompted to confirm the deletion.

3. Click **OK** to confirm. Click **Cancel** to keep the Area Group.

# View Area Types

It may be helpful to view the various area types when initially setting up your Projections software, to determine the best way to classify your areas. To view all area types:

1. **Right click** your state and select **Show All Area Types**. This will list all of the area types and their associated codes in the Area Setup section.

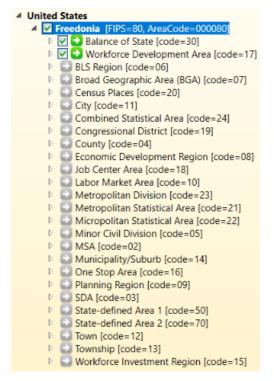


Figure 9: All area types

2. When you are finished, close the list by **right-clicking** your state and selecting **Hide Area Types With No Areas** from the context menu.

#### **Related Content**

- <u>Create Balance of Area</u>
- <u>Review Areas</u>
- Project Multiple Regions (<u>ST</u> and <u>LT</u>)
- <u>Area Format</u>

## **Industry Directory**

Use the **Industry Directory** as a resource for information about specific industries, listed by <u>NAICS</u>. The Industry Directory lists all valid industry codes and titles in a tree view. All Projections Suite applications use it for defining industries. A default Industry Directory is installed with the Projections Suite.

Analysts can modify the directory as needed for your state. However, the position of industries in the industry tree is critical. When adding or moving industries, ensure you place them correctly within the parent industry. Industry placement will affect aggregation of employment data in later projections steps.

The Industry Directory module is available in the Short Term, Long Term, and Occupational Projections applications. The same screen displays in each application.

#### **Screen Controls**

- Print all industries check box
- Search for field
- Find button
- Expand/Collapse arrows

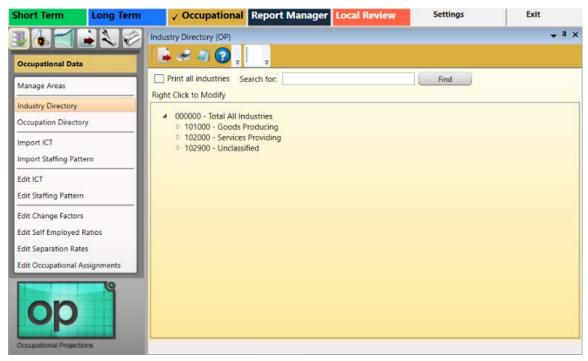


Figure 1: Industry Directory module

The **Total All Industries** code is displayed at the top of the tree. Beneath **Total All Industries** are the NAICS codes for Super-Sectors (2-digit), sectors (3-digit), and detailed industries (4 - 6 digit).

## Manually Expand/Collapse the Industry Hierarchy

1. Click the **Expand** icon next to the general category of the industry. The category will expand one level.

2. Continue clicking the expand icons in that category until the desired industry level is displayed.

3. Click the **Collapse** icon on the category header to collapse to that level.

## Use the Search Tool

- 1. Click into the Search for field.
- 2. Type an industry description or industry code.

3. Click the **Find** button or press **Enter**. The designated industry will be displayed if it is listed in the industry hierarchy.

| Industry Directory (OP)   | <b>→</b> ‡ × |
|---|--------------|
| 🖡 🛹 🕘 😧 🖕   |              |
| Print all industries Search for: 541100 Find  |              |
| Right Click to Modify   |              |
| <ul> <li>000000 - Total All Industries</li> <li>101000 - Goods Producing</li> <li>102000 - Services Providing</li> <li>102100 - Trade, Transportation, and Utilities</li> <li>102200 - Information</li> </ul>   | Â            |
| <ul> <li>102300 - Financial Activities</li> <li>102400 - Professional and Business Services</li> <li>540000 - Professional, Scientific, and Technical Services</li> <li>541000 - Professional, Scientific, and Technical Services</li> <li>541100 - Legal Services</li> </ul> |              |

Figure 2: Using the Search for field

| Search for: | Legal Services | Find |
|-------------|----------------|------|

Figure 3: Use a description to find an industry

## Additional Options in the Industry Directory

There are various options in the Industry Directory to help customize industries. To customize the Industry Directory:

1. **Right click** on an entry in the Industry Directory. Depending on which industry level you've selected, one of two context menus will be displayed.

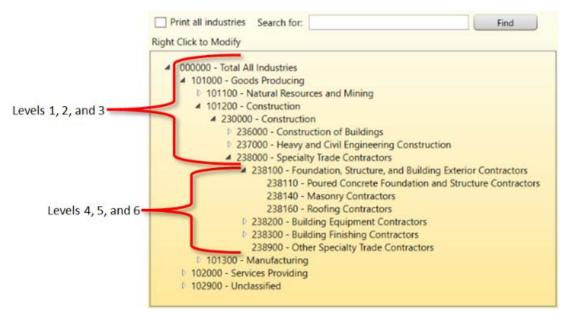


Figure 4: Industry Directory breakdown

The context menus contain the following items:

- Expand all children will expand the selected entry to the sixth level.
- Collapse all children will collapse all entries within the selected entry.
- Add enables the addition of new industries to the selected entry. Ensure their placement is correct to avoid future aggregation issues.
- **Cut** will remove the selected entry and copy it to the clipboard for pasting into another area.
- **Delete** will delete the selected entry.
- Edit enables editing of a selected entry.
- Move allows the selected entry to be moved to another location in the directory.
- Paste will paste a previously cut industry into another area in the hierarchy.

## **Occupation Directory**

The **Occupation Directory** is a resource to locate specific occupations and their <u>SOC</u> (Standard Occupational Classification) codes. The Occupation Directory is used to review, edit, or add the occupations that are used as part of the projections process.

#### **Screen Controls**

- Print all occupations check box
- Expand/Collapse arrows
- Search for field

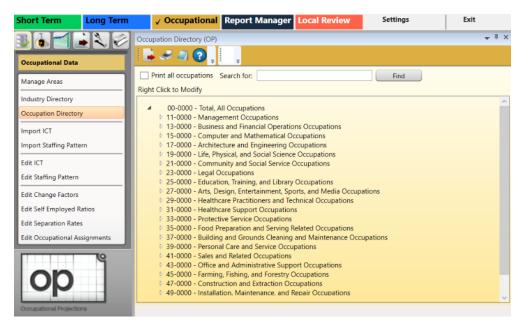


Figure 1: Occupation Directory module

## Manually Expand/Collapse Icons

1. Click the **Expand** icon next to the general category of the desired occupation. The general category will expand one level.

2. Continue clicking on the expand icons until the desired Occupation **Level** is displayed.

3. Click the **Collapse** icon on the category header to collapse to that level.

## Use the Search For Tool

1. Click the Search for field.

2. Type the description or the code for an occupation.

3. Click **Find**. The designated occupation will be displayed, if it is listed in the data.

## Add an Occupation

1. Find a **Parent Occupation** for the new **Occupation** to be added under.

2. **Right click** the major or minor group, which will designate it as the **Parent Occupation**.

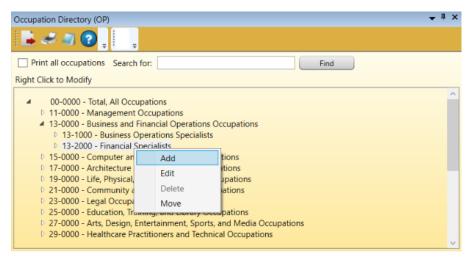


Figure 2: Add a new occupation under its Parent Occupation

3. Click the **Add** option from the context menu. The **Add Occupation** dialog box will be displayed:

| A | dd Occ    | upation                                     |
|---|-----------|---|
|   | Enter cod | e and name of occupation to add             |
|   | Code:     | 132001                                      |
|   | Title:    | Financial Examiner Assistant                |
|   | Rollup    | Level: 4                                    |
|   | Descript  | ion:  |
|   | Assists   | Fiancial Examiner with basic office duties. |
|   |           |   |
|   |           | OK Cancel                                   |

Figure 3: Add the Financial Examiner Assistant occupation

4. Enter the new occupation's **Code**, **Title**, and a **Description**. Make the code unique and consistent with its parent's code. The code must be six digits.

5. Click Save.

#### **Edit an Occupation**

1. **Right click** the occupation and select **Edit**. The **Edit Occupation** dialog box will be displayed.

- 2. Make changes to the Code, Title, Rollup Level, and Description.
- 3. Click Save.

#### **Delete an Occupation**

- 1. **Right click** the occupation to be deleted.
- 2. Select **Delete**. The **Delete Occupation** dialog box will be displayed:
- 3. Click **Confirm** to delete the occupation. Click **Cancel** to keep the occupation.

#### Move an Occupation to a New Parent

1. **Right click** the occupation you want to move.

2. In the **Move Occupation** box, select the **new parent** from the drop-down menu.

3. Click Save.

#### **Print Occupations**

1. Select the **Print all occupations** check box.

2. Click the **Print** icon on the Active Module Toolbar. An Occupation Directory Tree report will be generated in the Print Preview window.

3. Click the **Print** icon in the Print Preview window to send the report to the printer.

#### **Related Content**

• Edit Occupational Assignments

# Import ICT

**Import ICT** imports Industry Control Total (ICT) data needed for the **Edit ICT** module in Occupational Projections. After the file is imported, it generates a report of records which lists missing, incomplete, or corrupted data.

Industry Control Total data is a fixed wage and salary employment total for an industry. Occupational employment in the industry must add up to the ICT.

To use Occupational Projections, you must have ICT data and staffing pattern data. The ICT data can be produced in the Short or Long Term Projections modules, or can be imported from an external source.

Click here for the ICT file format description.

## **Screen Controls**

- Select file to import field
- Detected file type field
- Browse button
- Import button

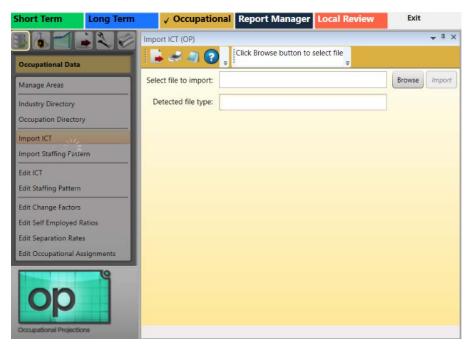


Figure 1: Import ICT module

#### Import ICT Data

- 1. Click **Browse**.
- 2. Locate and select the data file to import.

3. Click **Import** to load the file. When the data is imported, the **Import Spreadsheet** dialog box will display the results of the import.

| mport Spreadsheet   |   | _ |
|---|---|---|
| 4 unusable rows found dur<br>valid records were found. A<br>import the valid records? |   |   |
|   | the second se |   |

Figure 2: The Import Spreadsheet dialog box reports the status of the import

4. 4 of the 26 records in the imported data are invalid. Choose **Yes** to import the valid records, or **No** to cancel the import.

All records without errors will be imported. When the file is imported, any existing data is updated with the contents of the import file. This enables you to retain the data you had previously, and add new data to the existing data.

When the data has been imported, the **Import Spreadsheet** dialog box will display again to indicate a successful importation.

| mport Spreadsheet                               | _                  |
|---|--------------------|
| Successfully imported 22/26 rows, up<br>records | odated 22 database |
|   | Ok                 |

Figure 3: 22 out of 26 rows were imported

5. Click **OK** after reading the message. The **Import ICT** screen will display again and will now display detailed information about any errors encountered during importation.

| ected file t<br>Errors du | ype: ICTFormat  |            |           |           |          |            |
|---------------------------|---|------------|-----------|-----------|----------|------------|
| Rec #                     | Error Message   | State FIPS | Area Code | Area Type | Industry | Occupation |
| 6                         | Failed: Industry was not found in the database. [records:1] |            |           |           | 320000   |            |
| 7                         | Failed: Industry was not found in the database. [records:1] |            |           |           | 330000   |            |
| 10                        | Failed: Industry was not found in the database. [records:1] |            |           |           | 450000   |            |
| 13                        | Failed: Industry was not found in the database. [records:1] |            |           |           | 490000   |            |

Figure 4: Import errors

Records that have an area that is not found can be added to an area using the <u>Manage Areas</u> module. You can update an existing area by updating the area code, the state FIPS, or area type as needed. Alternatively, you can update the input file itself to match the area definitions currently in the system. You can do the same thing with the industries that are not defined at this time. Either add them to the <u>Industry Directory</u>, or update the import file so they are a known industry.

Take note of the message in the Active Module Toolbar field at the top of the screen. The imported data isn't displayed in this screen; it is visible and able to be edited in the Edit ICT module.

#### **Related Content**

- ICT Spreadsheet Format
- Edit ICT

## **Import Staffing Pattern**

The **Import Staffing Pattern** module imports staffing pattern data. There are four file types the Import Staffing Pattern section handles:

- Import LEWIS FoxPro
- Import LEWIS Excel
- Import BLS FoxPro
- Import Spreadsheet

To use the Occupational Projections system, you must have ICT and staffing pattern data.

If the ICT file has two-digit or three-digit industry data, then the four-digit staffing patterns is combined and summed to the appropriate industry. Some industries are not rolled up. These are 113 and 115. These industries are not rolled up because OES does not survey the other four-digit sibling industries, and therefore, they are not included in the LEWIS file. Use the Analysis Category, <u>Rollup Staffing Pattern</u> module to deal with these industries.

The **Base Year** and **Projected Year** are set up in the <u>Projections Suite settings</u>, Occupational Projections section.

#### **Screen Controls**

- Import LEWIS FoxPro tab
- Import LEWIS Excel tab
- Import BLS FoxPro tab
- Import Spreadsheet tab
- Import Staffing Pattern selection tabs
- Browse button
- **Import** button
- Base Year entry field
- Projected Year entry field
- State Fips entry field
- Rollup to ICT data check box

To import staffing pattern data, select the **Import Staffing Pattern** module. The Import Staffing Pattern screen will be displayed, with four selection tabs.

| Short Term                        | Long Term | ✓ Occupational            | Report Manager        | Local Review        | Settings           | Exit         |
|-----------------------------------|-----------|---------------------------|-----------------------|---------------------|--------------------|--------------|
|                                   |           | oort Staffing Pattern (OP | )                     |                     |                    | <b>→</b> # × |
| Occupational Data                 |           | 🛓 🛹 🗐 😨 💡                 | Ŧ                     |                     |                    |              |
| Manage Areas                      |           | Import LEWIS Fox          | Pro Import LEWIS Exce | I Import BLS FoxPro | Import Spreadsheet |              |
| Industry Directory                |           | Select File:              |                       |                     |                    | Browse       |
| Occupation Director               |           | Base Year:                | 2016                  |                     |                    | Import       |
| Import Staffing Patte             |           | Projected Year:           | 2026                  |                     |                    |              |
| Edit ICT<br>Edit Staffing Pattern |           | Rollup to ICT data:       | <b>v</b>              |                     |                    |              |
| Edit Change Factors               |           |                           |                       |                     |                    |              |
| Edit Self Employed R              |           |                           |                       |                     |                    |              |
| Edit Separation Rate              |           |                           |                       |                     |                    |              |
| Occupational Projection           | XIS       |                           |                       |                     |                    |              |

Figure 1: Import Staffing Pattern module

#### Import LEWIS FoxPro Data

- 1. Click the Import LEWIS FoxPro selection tab.
- 2. Set a Base Year and Projected Year.
- 3. Click **Browse** to find the file containing the needed data.

The file must be a Database file (.db, .dbf, etc.). For more information on the LEWIS FoxPro spreadsheet format, click <u>here</u>.

4. When the file is found, select it and click **Open**. Validation of the data will occur before it is imported. The **Import Staffing Pattern** screen displays with the file to be imported listed in the **Select file** field.

5. Select the **Rollup to ICT data** check box to roll up the industry data to match the industries in the ICT file.

6. Click **Import**. The **Import Spreadsheet** dialog displays when the import completes.



Figure 2: Details of the imported data

7. Click **OK**. The **Import Staffing Pattern** dialog box will confirm importation of the data.

☞ If there are errors in the file, a message will be displayed with error details. Correct the errors and re-import the file.

#### Import LEWIS Excel Data

1. Click the Import LEWIS Excel tab.

| μ×   |
|------|
|      |
|      |
| ie - |
| rt   |
|      |
|      |
|      |
|      |
|      |

Figure 3: Import LEWIS Excel tab

## 2. Set a Base Year and Projected Year.

3. Click **Browse** to find the file containing the needed data.

The file must be an Excel file (.xlsx). For additional details on LEWIS Excel file formatting, click <u>here</u>.

4. When the file is found, select it and click **Open**. Validation of the data will occur before it is imported.

5. Select the **Rollup to ICT data** check box to roll up the industry data to match the industries in the ICT file.

6. Click **Import**. The **Import Spreadsheet** dialog displays when the import completes.

7. Click **OK**. The **Import Staffing Pattern** dialog box confirms importation of the data.

#### Import BLS FoxPro Data

1. Click the Import BLS FoxPro tab.

| Import LEWIS Fox | Pro Import LEW | S Excel Imp | oort BLS FoxPro | Import Spreadsheet |        |
|------------------|----------------|-------------|-----------------|--------------------|--------|
| Select File:     |                |             |                 |                    | Browse |
| Base Year:       | 2016           |             |                 |                    |        |
| Projected Year:  | 2026           | Ī           |                 |                    |        |
| State Fips:      |                | 1           |                 |                    |        |

Figure 4: The Import BLS Data tab

- 2. Set a Base Year, Projected Year, and State Fips code.
- 3. Click **Browse** to find the file containing the needed data.

The file must be a Database file (.db, .dbf, etc.). For more information on the BLS FoxPro file format, click <u>here</u>.

4. When the file is found, select it and click **Open**. Upon validating the data, the **Import Staffing Pattern** screen displays with the file to be imported listed in the **Select file** field.

5. Select the **Rollup to ICT data** check box to roll up the industry data to match the industries in the ICT file.

6. Click **Import**. The **Import Spreadsheet** dialog box will be displayed when the import completes.

| mport Spreadsheet  | _                  |
|--|--------------------|
| Successfully imported 18290/18290 ro<br>database records | ows, updated 18290 |
|  | Ok                 |

Figure 5: Details of the imported data

7. Click **OK**. The **Import Staffing Pattern** dialog box confirms the data importation.

#### Import Spreadsheet Data

The Import Spreadsheet tab was included in the Import Staffing Pattern module to allow the importation of data that isn't necessarily created and exported in Projections Suite. Match your values with the <u>Staffing Pattern Spreadsheet</u> format and import your data using this tab.

1. Click the **Import Spreadsheet** tab.

| Import LEWIS F  | oxPro | Import LEWIS Excel | Import BLS FoxPro | Import Spreadsheet |        |
|-----------------|-------|--------------------|-------------------|--------------------|--------|
| Select File:    |       | 995                |                   |                    | Browse |
| Base Year:      | 2016  |                    |                   |                    |        |
| Projected Year: | 2026  |                    |                   |                    |        |
|                 |       |                    |                   |                    | Import |

Figure 6: Import Spreadsheet tab

- 2. Set a Base Year and Projected Year.
- 3. Click **Browse** to find the file containing the needed data.
- 4. When the file is found, select it and click **Open**.

The file must be a Spreadsheet file (.xls). For additional information on staffing pattern spreadsheet file formats, click <u>here</u>.

5. Click **Import**. The **Import Spreadsheet** dialog box will indicate when the import completes.

| nport Spreadsheet   | _          |
|---|------------|
| Successfully imported 166/166 rows, u<br>database records | pdated 166 |
|   | Ok         |

Figure 7: Details of the imported data

6. Click **OK**. The **Import Staffing Pattern** dialog box confirms the importation of the data.

## **Related Content**

- Edit Staffing Pattern
- LEWIS FoxPro/Excel Format
- <u>BLS FoxPro Staffing Pattern Format</u>
- <u>Staffing Pattern Spreadsheet Format</u>
- Industry Directory
- Occupation Directory

# Edit ICT

The **Edit ICT** module enables adding, editing, and deleting Industry Control Total (ICT) data. Once you have the ICT data in the system from either <u>importing a file</u> or copying the data over directly from Long Term or Short Term Projections (using the ICT Export module), use the Edit ICT module to display and manipulate the data.

## **Screen Controls**

- Select Area drop-down menu
- Select Timeframe drop-down menu
- Right click contextual menu
  - **Add**
  - o Edit
  - o **Delete**

| Short Term           | Long Term   | ✓ Occupationa     | Report Manager | Local Review | Settings | Exit         |
|----------------------|-------------|-------------------|----------------|--------------|----------|--------------|
| 36-1                 |             | Edit ICT (OP)     |                |              |          | <b>→</b> ‡ × |
| Occupational Dat     |             | 📕 🛹 🖉 💡           |                |              |          |              |
| Manage Areas         |             | Select Area:      |                |              |          | v            |
| Industry Directory   |             | Select Timeframe: |                |              |          | Delete All   |
| Occupation Direct    | ory         |                   |                |              |          |              |
| Import ICT           |             |                   |                |              |          |              |
| Import Staffing Par  | ttern       |                   |                |              |          |              |
| Edit ICT             |             |                   |                |              |          |              |
| Edit Staffing Patter | m           |                   |                |              |          |              |
| Edit Change Factor   | rs          |                   |                |              |          |              |
| Edit Self Employed   |             |                   |                |              |          |              |
| Edit Separation Ra   |             |                   |                |              |          |              |
| Edit Occupational    | Assignments |                   |                |              |          |              |
| <b>Op</b>            | tions       |                   |                |              |          |              |

Figure 1: Edit ICT module

## **View ICT Values**

1. Select an area from the **Select Area** drop-down menu.

2. Select a time frame from the **Select Timeframe** drop-down menu. The Edit ICT screen will be displayed with the imported data.

| elect Area:      | Freedonia                                  |      |            |                 |
|------------------|--|------|------------|-----------------|
| elect Timeframe: | 2016 -> 2018                               |      | Y Delete A |                 |
| NAICS            | Title                                      | Base | Projection | Confidentiality |
| 110000           | Agriculture, Forestry, Fishing and Hunting | 10   | 10         | None            |
| 221000 U         | Jtilities                                  | 61   | 71         | None            |
| 236000           | Construction of Buildings                  | 761  | 793        | None            |
| 237000 H         | Heavy and Civil Engineering Construction   | 168  | 114        | None            |
| 238000 5         | Specialty Trade Contractors                | 575  | 587        | None            |
| 311000 F         | ood Manufacturing                          | 66   | 66         | None            |
| 312000 E         | Beverage and Tobacco Product Manufacturing | 235  | 250        | None            |
| 314000 1         | Textile Product Mills                      | 5    | 5          | None            |

Figure 2: The imported ICT data is displayed

## Edit an ICT Record

1. **Right click** the record to be edited.

☞ Sort the data (A-Z or 1-100) by clicking on the heading of the column. Clicking the column a second time sorts the data in reverse (Z-A or 100-1).

| Select Area:         Freedonia           Select Timeframe:         2016 -> 2018 |  |        |      |            |                 |
|---|--|--------|------|------------|-----------------|
|   |  |        |      |            |                 |
| NAICS   | Title  | *      | Base | Projection | Confidentiality |
| 721000  | Accommodation, including Hotels and Motels   |        | 3673 | 3694       | None            |
| 561000  | Administrative and Support Services          |        | 1805 | 1817       | None            |
| 110000  | Agriculture, Forestry, Fishing and Hunting   |        | 10   | 10         | None            |
| 481000  | Air Transportation                           | Add    | 165  | 162        | None            |
| 621000  | Ambulatory Health Care Services              | Delete | 1081 | 1209       | None            |
| 713000  | Amusement, Gambling, and Recreation Industri |        | 645  | 646        | None            |
| 312000  | Beverage and Tobacco Product Manufacturing   |        | 235  | 250        | None            |
| 515000  | Broadcasting (except Internet)               |        | 24   | 20         | None            |

Figure 3: Add, Edit, and Delete context menu

2. Select the Edit option and make the desired changes.

#### Add an ICT Record

1. **Right click** and select **Add** from the contextual menu. The **Create New ICT** dialog box will appear.

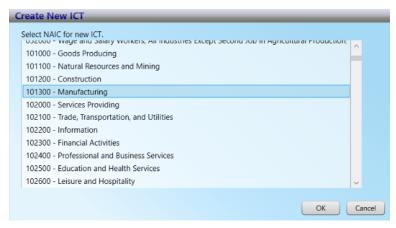


Figure 4: The Create New ICT dialog box

2. Select a NAICS code for the new ICT entry and click OK.

| elect Area:                      | Freedonia  |   |      |            |                 |
|----------------------------------|--|---|------|------------|-----------------|
| Select Timeframe: 2016 -> 2018 v |  |   |      |            | Y Delete A      |
| NAICS                            | Title  | * | Base | Projection | Confidentiality |
| 551000                           | Management of Companies and Enterprises            |   | 156  | 112        | None            |
| 101300                           | Manufacturing                                      |   | -    |            | None            |
| 424000                           | Verchant Wholesalers, Nondurable Goods             |   | 685  | 673        | None            |
| 339000                           | Miscellaneous Manufacturing                        |   | 50   | 51         | None            |
| 453000                           | Miscellaneous Store Retailers                      |   | 297  | 271        | None            |
| 441000                           | Motor Vehicle and Parts Dealers                    |   | 397  | 392        | None            |
| 712000                           | Museums, Historical Sites, and Similar Institution |   | 180  | 192        | None            |
| 327000                           | Nonmetallic Mineral Product Manufacturing          |   | 145  | 149        | None            |

Figure 5: The ICT industry Manufacturing is added to the selected area

3. Type the **Base**, **Projection**, and **Confidentiality** values in their fields.

| elect Area:    | Freedonia  |   |      |            |                 |
|----------------|--|---|------|------------|-----------------|
| elect Timefram | e: 2016 -> 2018                                    |   |      |            | * Delete        |
| NAICS          | Title  | • | Base | Projection | Confidentiality |
| 551000         | Management of Companies and Enterprises            |   | 156  | 112        | None            |
| 101300         | Manufacturing                                      | - | 1356 | 1378       | None            |
| 424000         | Merchant Wholesalers, Nondurable Goods             |   | 685  | 673        | None            |
| 339000         | Miscellaneous Manufacturing                        |   | 50   | 51         | None            |
| 453000         | Miscellaneous Store Retailers                      |   | 297  | 271        | None            |
| 441000         | Motor Vehicle and Parts Dealers                    |   | 397  | 392        | None            |
| 712000         | Museums, Historical Sites, and Similar Institution |   | 180  | 192        | None            |
| 327000         | Nonmetallic Mineral Product Manufacturing          |   | 145  | 149        | None            |

Figure 6: Base, Projection, and Confidentiality values added

4. Press Enter, or click on any other record to save the changes.

#### **Edit an ICT Record**

1. **Right click** the industry and select the **Edit** option from the contextual menu that displays.

2. Type the new values (or select the desired classification from the Confidentiality drop-down menu) in the field's **Base**, **Projection**, and **Confidentiality** fields.

3. Press Enter, or click on any other record to save the changes.

| Select Area:                  | elect Area: Freedonia               |   |               |        |            |            |          | ~  |
|-------------------------------|-------------------------------------|---|---------------|--------|------------|------------|----------|----|
| elect Timeframe: 2016 -> 2018 |                                     |   |               |        | ~          | Y Delete A |          |    |
| NAICS                         | Title                               |   |               | Base   | Projection | Confider   | ntiality | 12 |
| 721000                        | Acco                                | ommodation, including Hotels and Motels     |               | 3673   | 3694       | None       |          | l  |
| 561000                        | Administrative and Support Services |   |               | 1805   | 5 1817 N   |            |          |    |
| 110000                        | Agri                                | culture, Forestry, Fishing and Hunting      | $\rightarrow$ | 10     | 12         | Secon      | dary ~   |    |
| 481000                        | Air T                               | ransportation                               |               | 165    | 162        | None       |          |    |
| 621000                        | Amb                                 | ulatory Health Care Services                |               | 1081   | 1209       | None       |          |    |
| 713000                        | Amu                                 | sement, Gambling, and Recreation Industries |               | 645    | 646        | None       |          |    |
| 312000                        | Beve                                | rage and Tobacco Product Manufacturing      |               | 235    | 250        | None       |          |    |
| 515000                        | Broa                                | dcasting (except Internet)                  |               | 24     | 20         | None       |          |    |
|                               |                                     |   |               | 36,535 | 36,477     |            |          | ١. |

Figure 7: Editing an ICT industry

## Delete an ICT Record

1. **Right click** the industry to delete.

2. Select **Delete** from the context menu. The **Delete Record** dialog box will be displayed.

3. Click **Yes** to delete the record. Click **No** to keep the record.

Delete multiple records by using the Shift and Ctrl keys. For more information on selecting multiple items, click <u>here</u>.

## Delete All ICT Records for an Area and Time Frame

- 1. Select an area and time frame from the drop-down menus.
- 2. Click the **Delete All** button. A **Delete Records** dialog box will be displayed.
- 3. Click Yes to confirm the deletion. Click No to keep the records.

#### **Export ICT Records**

1. Click the **Export** icon on the Active Module Toolbar. A Save As window will be displayed.

- 2. Name and select a location for the file.
- 3. Click the **Save** button.

## **Related Content**

- Import ICT
- ICT Export
- ICT Spreadsheet Format

## **Edit Staffing Pattern**

Once you have staffing pattern data in the system, the **Edit Staffing Pattern** module facilitates staffing pattern maintenance activities. You can add, edit, or delete data.

The **Staffing File Maintenance tab** displays the industries that have staffing patterns and the occupational employment totals for each industry. The **Staffing Pattern Maintenance tab** displays all the occupations that comprise an industry staffing pattern.

## **Screen Controls**

- Select an Area drop-down menu
- Select a Timeframe drop-down menu
- Select an Industry drop-down menu
- Staffing File Maintenance tab
- Staffing Pattern Maintenance tab
- Delete All Industries button

| Short Term           | Long Term   | ✓ Occupational               | Report Manager Local Review  | Settings | Exit                  |
|----------------------|-------------|------------------------------|------------------------------|----------|-----------------------|
| 36-                  | 120         | Staffing Pattern Maintenance | e (OP)                       |          | + î ×                 |
| Occupational Data    |             | 🖡 🛹 🖉 💡                      | Ŧ                            |          |                       |
| Manage Areas         |             | Select an Area:              |                              |          | Ŷ                     |
| Industry Directory   |             | Select a Timeframe:          |                              |          | v                     |
| Occupation Directory | VIC.        | Select an Industry:          |                              |          |                       |
| Import ICT           |             | Staffing File Maintenance    | Staffing Pattern Maintenance |          |                       |
| Import Staffing Pat  | tern        |                              |                              |          | Delete All Industries |
| Edit ICT             |             |                              |                              |          |                       |
| Edit Staffing Patter | n           |                              |                              |          |                       |
| Edit Change Factor   | 5           |                              |                              |          |                       |
| Edit Self Employed   | Ratios      |                              |                              |          |                       |
| Edit Separation Rat  | tes         |                              |                              |          |                       |
| Edit Occupational A  | Assignments |                              |                              |          |                       |
| Opp                  | ions e      |                              |                              |          |                       |

Figure 1: Edit Staffing Pattern module

## **View Staffing Patterns**

1. Select an Area from the drop-down menu.

2. **Select a Timeframe** from the drop-down menu. The data from the selected Area and time frame will be displayed. The **Staffing File Maintenance** tab allows deleting of industries within the selected area and time frame.

The Pattern Total column is calculated by summing up all of the occupations that make up that industry.

#### **Delete an Industry**

1. **Right click** the unnecessary industry. A **Delete** menu item will display.

| Staffing Pattern Mair | ntenance (OP)                           |     |               | + ¤ ×      |
|-----------------------|---|-----|---------------|------------|
| 📕 🛹 🗐 🌘               | 2                                       |     |               |            |
| Select an Area:       | Freedonia                               |     |               | Ŷ          |
| Select a Timeframe:   | 2017 -> 2019                            |     |               | Ŷ          |
| Select an Industry:   | 453000 - Miscellaneous Store Retailers  |     |               | 0          |
| Staffing File Main    | stenance Staffing Pattern Maintenance   |     |               |            |
|                       |   |     | Delete All    | Industries |
| NAICS T               | itle                                    | - 1 | Pattern Total | ^          |
| ► 453000 N            | liscellaneous Store Retailers           |     | 298.50        |            |
| 441000 N              | lotor Vehicle and Parts Dealers         |     | 392.40        |            |
| 212300 N              | onmetallic Mineral Mining and Quarrying |     | 18.00         | ~          |

Figure 2: Deleting an industry from the Staffing File Maintenance tab

2. Click **Delete**. The **Delete Record** dialog box will be displayed.

3. Click **Yes** to delete the record from the selected area and time frame. Click **No** to keep the industry record.

Delete multiple records by using the Shift and Ctrl keys. For more information on selecting multiple items, click <u>here</u>.

#### **Delete All Industries for a Selected Area and Time Frame**

1. From the **Staffing File Maintenance** tab, click the **Delete All Industries** button. A confirmation dialog will be displayed.

2. Select **Yes** to delete the staffing patterns. Click **No** to keep the staffing patterns.

## **Staffing Pattern Maintenance**

1. Select the **Staffing Pattern Maintenance** tab. The **Staffing Pattern Maintenance** screen will be displayed and the **Select an Industry** drop-down menu will unlock.

| Staffing Pattern | Maintenance | (OP)                              |                     | τ ¤ ×          |
|------------------|-------------|-----------------------------------|---------------------|----------------|
|                  | 1 🕐 🕴       | -                                 |                     |                |
| Select an Area:  | Freedo      | onia                              |                     | ~              |
| Select a Timefra | ame: 2017 - | > 2019                            |                     | v              |
| Select an Indus  | try:        |                                   |                     | ~              |
| Staffing File N  | Aaintenance | Staffing Pattern Maintenance      | -                   |                |
| SOC              | Title       |                                   | Survey Level        | Staffing Ratio |
|                  |             |                                   |                     |                |
|                  |             |                                   |                     |                |
|                  |             |                                   |                     |                |
|                  |             |                                   | 0                   | 0              |
| Industry Total   | 291.00      | Staffing pattern total does not e | qual industry total |                |

Figure 3: Staffing Pattern Maintenance tab

2. **Select an Industry** from the drop-down menu. Selecting an Industry will display the **SOC**, **Title**, **Survey Level**, and **Staffing Ratio** for each associated profession within the industry:

| Sel                              | ect an Area:          | Freedo      | onia  |              |       |                |   |
|----------------------------------|-----------------------|-------------|---|--------------|-------|----------------|---|
| Select a Timeframe: 2017 -> 2019 |                       |             |   |              |       |                |   |
| Sel                              | ect an Indust         | ry: 23600   | 0 - Construction of Buildings                                 |              |       |                |   |
| S                                | taffing File M        | laintenance | Staffing Pattern Maintenance                                  |              |       |                |   |
|                                  | SOC                   | Title       |   | Survey Level |       | Staffing Ratio |   |
|                                  | 11-1021               | General ar  | nd Operations Managers  |              | 43.10 | 0.05525641     | ļ |
|                                  | 11-3011               | Administra  | ative Services Managers                                       |              | 1.90  | 0.00243590     |   |
|                                  | 11-3031               | Financial M | Financial Managers  |              | 3.40  | 0.00435897     |   |
|                                  | 11-306 <mark>1</mark> | Purchasing  | g Managers  |              | 4.60  | 0.00589744     |   |
|                                  | 11-9021               | Constructi  | on Managers   |              | 26.70 | 0.03423077     |   |
|                                  | 13-1023               | Purchasing  | urchasing Agents, Except Wholesale, Retail, and Farm Products |              | 5.40  | 0.00692308     |   |
|                                  | 17-2051               | Civil Engin | eers  |              | 0.80  | 0.00102564     |   |
|                                  |                       | _           |   | 780          |       | 1              |   |

Figure 4: Associated staffing pattern data for the selected industry

3. **Right click** to display a contextual menu to **Add**, **Edit**, or **Delete** staffing pattern data. The Staffing Ratio (the percentage of employment that each occupation comprises from the total industry employment) is what is used in the calculation. Whenever you add, edit, or delete a staffing pattern, make sure the ratio seems reasonable.

The Survey Level is the employment value this occupation has in this industry.

## **Export Staffing Pattern**

1. Click the Export icon in the Active Module Toolbar. A Save As window will be displayed.

- 2. Name and select a location for the file.
- 3. Click the **Save** button.

#### **Related Content**

Import Staffing Pattern

## **Edit Change Factors**

The **Edit Change Factors** section of Projections Suite enables the display of the national change factor data in the system. **Edit Change Factors** facilitates adding, editing, and deleting of the change factor for specific occupations.

Change Factors can be explained through the definition of a few key terms. Staffing patterns are a distribution of employment within an industry (or rather, a set of ratios). Ratio analysis is the process of projecting changes in staffing pattern within industries. A **Change Factor** is the projected change in staffing pattern ratios, which is always accompanied by a rationale or reasons for the underlying Change Factor. Analysts use occupational expertise and empirical evidence to make decisions about how occupational utilization may change over the projections period.

A Change Factor equal to 1 indicates no change in the proportion of the occupation within the industry. A factor less than 1 indicates a declining proportion of the occupation within the industry. A factor greater than 1 indicates an increasing proportion of the occupation within an industry.

| Change<br>Factor<br>Magnitude | Description            |
|-------------------------------|------------------------|
| 0.50                          | Very large<br>decrease |
| 0.65                          | Large decrease         |
| 0.80                          | Moderate<br>decrease   |
| 0.90                          | Small decrease         |
| 1.00                          | No change              |
| 1.10                          | Small increase         |
| 1.20                          | Moderate<br>increase   |
| 1.35                          | Large increase         |
| 1.50                          | Very large<br>increase |

## **Screen Controls**

• Select an Area drop-down menu

- Select an Industry drop-down menu
- Right click contextual menu
  - **Add**
  - o **Edit**
  - o **Delete**

| Short Term              | Long Term | ✓ Occupation        | ional Report Manager Local Review | Settings | Exit         |
|-------------------------|-----------|---------------------|-----------------------------------|----------|--------------|
| 3                       |           | Edit Change Factors | (OP)                              |          | <u>≁</u> ‡ × |
| Occupational Data       |           | 📕 🥪 🔊 🌘             | <b>D</b> , , ,                    |          |              |
| Manage Areas            |           | Select an Area:     | United States                     |          | Ť            |
| Industry Directory      |           | Select an Industry: |                                   |          | ÷            |
| Occupation Directory    | (°        |                     |                                   |          |              |
| Import ICT              |           |                     |                                   |          |              |
| Import Staffing Patte   | m         |                     |                                   |          |              |
| Edit ICT                |           |                     |                                   |          |              |
| Edit Staffing Pattern   |           |                     |                                   |          |              |
| Edit Change Factors     |           |                     |                                   |          |              |
| Edit Self Employed R    | atios     |                     |                                   |          |              |
| Edit Separation Rates   | 5         |                     |                                   |          |              |
| Edit Occupational As    | signments |                     |                                   |          |              |
| Occupational Projection | rs        |                     |                                   |          |              |

Figure 1: Edit Change Factors module

#### **View Change Factors**

1. Select an Area.

2. **Select an Industry**. The occupations contained within the selected industry are displayed.

| Select an Area:  | United States  |               |  |
|------------------|--|---------------|--|
| Select an Indust | ry: 113000 - Forestry and Logging                              |               |  |
| SOC              | Title  | Change Factor |  |
| 11-1021          | General and Operations Managers                                | 0.99844       |  |
| 11-3051          | Industrial Production Managers                                 | 0.91283       |  |
| 11-9013          | Farmers, Ranchers, and Other Agricultural Managers             | 1.28776       |  |
| 11-9199          | Managers, All Other  | 0.91283       |  |
| 13-1021          | Buyers and Purchasing Agents, Farm Products                    | 0.82154       |  |
| 13-1023          | Purchasing Agents, Except Wholesale, Retail, and Farm Products | 0.82154       |  |

Figure 2: Titles and Change Factors within the Industry

## Add a New Occupation Title and Change Factor

1. **Right click** on any occupation.

| Select an Area:     | United States             |                           |            |               |   |
|---------------------|---------------------------|---------------------------|------------|---------------|---|
| Select an Industry: | 113000 - Forestry and L   | ogging                    |            |               | ` |
| SOC                 | Title                     |                           |            | Change Factor | 1 |
| 11-1021             | General and Operations N  | lanagers                  |            | 0.99844       |   |
| 11-3051             | Industrial Production Mar | aders                     |            | 0.91283       |   |
| 11-9013             | Farmers, Ranchers, and    | Add                       |            | 1.28776       |   |
| 11-9199             | Managers, All Other       | Edit                      |            | 0.91283       |   |
| 13-1021             | Buyers and Purchasing Ag  |                           |            | 0.82154       |   |
| 13-1023             | Purchasing Agents, Excep  | Wholesale, Retail, and Fa | m Products | 0.82154       |   |

Figure 3: Adding a new Title

2. Click the **Add** option. The **Create New Change Factor** dialog box will be displayed:

| C | Create New ChangeFactor  |    | _     |
|---|--|----|-------|
|   | Select SOC for new ChangeFactor.   |    |       |
|   | 11-3021 Computer and Information Systems Managers                        | ^  |       |
|   | 11-3031 Financial Managers   |    |       |
|   | 11-3061 Purchasing Managers  |    |       |
|   | 11-3071 Transportation, Storage, and Distribution Managers               |    |       |
|   | 11-3111 Compensation and Benefits Managers                               |    |       |
|   | 11-3121 Human Resources Managers   |    |       |
|   | 11-3131 Training and Development Managers                                |    |       |
|   | 11-9000 Other Management Occupations                                     |    |       |
|   | 11-9021 Construction Managers  |    |       |
|   | 11-9031 Education Administrators, Preschool and Childcare Center/Program |    |       |
|   | 11-9032 Education Administrators, Elementary and Secondary School        |    |       |
|   | 44 0000 Full-statis Administration Destation dest                        | ~  |       |
|   |  | 6  |       |
|   | OK   | Ca | incel |

Figure 4: Create New Change Factor dialog box

3. Select the SOC to be added. Click **OK**.

| Sele | ect an Area:     | United States                                      |               |
|------|------------------|--|---------------|
| Sele | ect an Industry: | 113000 - Forestry and Logging                      |               |
|      | SOC              | Title  | Change Factor |
|      | 11-1021          | General and Operations Managers                    | 0.99844       |
|      | 11-3051          | Industrial Production Managers                     | 0.91283       |
| ×    | 11-3061          | Purchasing Managers                                | 1.24565       |
|      | 11-9013          | Farmers, Ranchers, and Other Agricultural Managers | 1.28776       |
|      | 11-9199          | Managers, All Other                                | 0.91283       |
|      | 13-1021          | Buyers and Purchasing Agents, Farm Products        | 0.82154       |

Figure 5: Adding a new occupation and its Change Factor

- 4. Type the **Change Factor** for the new occupation.
- 5. Press **Enter**, or click any other title to accept the value.

#### Edit an Occupation's Change Factor

- 1. **Right click** the occupation to modify its Change Factor.
- 2. Click Edit. The Change Factor field can now be modified.
- 3. Enter the new Change Factor value.

|     | Change Factors   | ; (OP)   | • I           |
|-----|------------------|--|---------------|
| Sel | ect an Area:     | United States                                      |               |
| Sel | ect an Industry: | 113000 - Forestry and Logging                      |               |
|     | SOC              | Title  | Change Factor |
|     | 11-1021          | General and Operations Managers                    | 0.99844       |
| ۲   | 11-3051          | Industrial Production Managers                     | 0.91283       |
|     | 11-3061          | Purchasing Managers                                | 1.24565       |
|     | 11-9013          | Farmers, Ranchers, and Other Agricultural Managers | 1.28776       |
|     | 11-9199          | Managers, All Other                                | 0.91283       |
|     | 13-1021          | Buyers and Purchasing Agents, Farm Products        | 0.82154       |

Figure 6: Modifications can be made to the Change Factor

4. Press Enter, or click any other occupation to accept the change.

## **Delete an Occupation**

1. **Right click** the occupation to be deleted.

2. Select **Delete** from the contextual menu. A Delete Record confirmation dialog box will be displayed.

3. Click **Yes** to delete the record. Click **No** to keep the record.

## **Export Change Factors**

1. **Select an Area** and **Select an Industry** from the drop-down menus to select the industry information you want to export.

2. Click the **Export** icon in the Active Module Toolbar. A Save As window will be displayed.

- 3. Name and select a location for the file.
- 4. Click Save.

## **Related Content**

<u>Calculate Projections</u>

# **Edit Self Employed Ratios**

The **Edit Self Employed Ratios** module allows the changing of SE (Self Employed) ratios.

For additional information on the self employed calculations, visit this link.

#### **Screen Controls**

- Select Area drop-down menu
- Right Click Menu
  - **Add**
  - o Edit
  - o **Delete**

| Short Term Long Ter           |              | cupational Report Manager Local Review             | Settings | Exit       |            |
|-------------------------------|--------------|--|----------|------------|------------|
|                               | Edit Self Em | ployed Ratios (OP)                                 |          | •          | <b>ņ</b> ; |
| Occupational Data             | 1 🕒 🖉        | a 🕄 🔋 🖕  |          |            |            |
| Manage Areas                  | Select Area  | United States                                      |          |            |            |
| Industry Directory            | SOC          | Title  | SE-Base  | SE-10 Year | 12         |
| Occupation Directory          | > 11-101     | 1 Chief Executives                                 | 0.29600  | 0.33460    |            |
|                               | - 11-1021    | 1 General and Operations Managers                  | 0.00650  | 0.00610    |            |
| Import ICT                    | 11-1031      | 1 Legislators                                      | 0.00000  | 0.00000    |            |
| Import Staffing Pattern       | - 11-2011    | Advertising and Promotions Managers                | 0.05520  | 0.05270    |            |
| Edit ICT                      | 11-2021      | Marketing Managers                                 | 0.03650  | 0.03690    |            |
| Edit Staffing Pattern         | 11-2022      | 2 Sales Managers                                   | 0.03720  | 0.03850    |            |
| Edit Change Factors           | 11-2031      | Public Relations and Fundraising Managers          | 0.00000  | 0.00000    |            |
| Edit Self Employed Ratios     | 11-301       | 1 Administrative Services Managers                 | 0.00210  | 0.00240    |            |
| Edit Separation Rates         | 11-3021      | 1 Computer and Information Systems Managers        | 0.00840  | 0.00910    |            |
| Edit Occupational Assignments | 11-3031      | 1 Financial Managers                               | 0.02700  | 0.02480    |            |
| 9                             | 11-305       | 1 Industrial Production Managers                   | 0.01450  | 0.01240    |            |
| on                            | 11-3061      | 1 Purchasing Managers                              | 0.01280  | 0.01190    |            |
|                               | 11-3071      | Transportation, Storage, and Distribution Managers | 0.01120  | 0.01160    |            |
| Occupational Projections      |              |  |          |            |            |

Figure 1: Edit Self Employed Ratios module

#### Add a New Record

- 1. Select an area from the **Select Area** drop-down box.
- 2. Right click on any record. A contextual menu will be displayed.

| Select Area: | United States              |                 |         |            |  |
|--------------|----------------------------|-----------------|---------|------------|--|
| SOC          | Title                      |                 | SE-Base | SE-10 Year |  |
| 11-1011      | Chief Executives           |                 | 0.29600 | 0.33460    |  |
| 11-1021      | General and Operations M   | anagers         | 0.00650 | 0.00610    |  |
| 11-1031      | Legislators                |                 | 0.00000 | 0.00000    |  |
| 11-2011      | Advertising an Add         |                 | 0.05520 | 0.05270    |  |
| 11-2021      | Marketing Mar              |                 | 0.03650 | 0.03690    |  |
| 11-2022      | Sales Managers             | te              | 0.03720 | 0.03850    |  |
| 11-2031      | Public Relations and Fundr | aising Managers | 0.00000 | 0.00000    |  |
| 11-3011      | Administrative Services Ma | anagers         | 0.00210 | 0.00240    |  |

Figure 2: Click add from the contextual menu

3. Click the **Add** option. The **Create New Self Employment Ratio** dialog box will be displayed.

| • | reate New SelfEmploymentRatio  | _  |        |
|---|--|----|--------|
|   | Select SOC for new SelfEmploymentRatio.                                      |    |        |
|   | 27-4000 Media and Communication Equipment Workers                            |    | ^      |
|   | 29-0000 Healthcare Practitioners and Technical Occupations                   |    |        |
|   | 29-1000 Health Diagnosing and Treating Practitioners                         |    |        |
|   | 29-1111 Registered Nurses (OES 2010)   |    |        |
|   | 29-2000 Health Technologists and Technicians                                 |    |        |
|   | 29-2037 Radiologic Technologists and Technicians (OES 2010)                  |    |        |
|   | 29-2799 Health Technologists and Technicians, All Other (OES 2010)           |    |        |
|   | 29-9000 Other Healthcare Practitioners and Technical Occupations             |    |        |
|   | 29-9799 Healthcare Practitioners and Technical Workers, All Other (OES 2010) |    |        |
|   | 31-0000 Healthcare Support Occupations                                       |    |        |
|   | 31-1000 Nursing, Psychiatric, and Home Health Aides                          |    | ~      |
|   |  |    |        |
|   |  | ОК | Cancel |

Figure 3: Create New Self Employment Ratio dialog box

4. Select the desired **Standard Occupational Classification (SOC)** code and click **OK**. The new record will be displayed in its numerical order, in the Title listing.

5. Enter the values for the **SE - Base** and **SE - 10 Year** for the new record.

| elect Area: | United States                      |         |            |
|-------------|------------------------------------|---------|------------|
| SOC         | Title                              | SE-Base | SE-10 Year |
| 29-1065     | Pediatricians, General             | 0.08150 | 0.05210    |
| 29-1066     | Psychiatrists                      | 0.06450 | 0.04310    |
| 29-1067     | Surgeons                           | 0.08190 | 0.05290    |
| 29-1069     | Physicians and Surgeons, All Other | 0.06640 | 0.04440    |
| 29-1071     | Physician Assistants               | 0.00110 | 0.00060    |
| 29-1081     | Podiatrists                        | 0.08040 | 0.08510    |
| 29-1111     | Registered Nurses (OES 2010)       | 0.00145 | 0.00240    |
| 29-1122     | Occupational Therapists            | 0.07000 | 0.08410    |

Figure 4: The Registered Nurses record is displayed

6. Press Enter, or click on any other record to save the new record.

## Edit a Record

- 1. **Right click** a record to select it for editing.
- 2. Select the Edit option.

| elect Area: | United States                             |         |            |
|-------------|---|---------|------------|
| SOC         | Title                                     | SE-Base | SE-10 Year |
| 11-1011     | Chief Executives                          | 0.29600 | 0.33460    |
| 11-1021     | General and Operations Managers           | 0.0065  | 0.00610    |
| 11-1031     | Legislators                               | 0.00000 | 0.00000    |
| 11-2011     | Advertising and Promotions Managers       | 0.05520 | 0.05270    |
| 11-2021     | Marketing Managers                        | 0.03650 | 0.03690    |
| 11-2022     | Sales Managers                            | 0.03720 | 0.03850    |
| 11-2031     | Public Relations and Fundraising Managers | 0.00000 | 0.00000    |
| 11-3011     | Administrative Services Managers          | 0.00210 | 0.00240    |

Figure 5: Edit a Self Employed Ratio record

- 3. Type the new values for the **SE Base** and **SE 10 Year**.
- 4. Press Enter, or click on any other record to save the changes.

## Delete a Record

- 1. **Right click** on the record to delete.
- 2. Select **Delete**. A confirmation dialog box will be displayed.
- 3. Click **Yes** to delete the record. Click **No** to keep the record.

## **Related Content**

• <u>Calculate Self Employed</u> (Statistical and Technical Terms)

## **Edit Separation Rates**

The **Edit Separation Rates** module was updated from the Replacement Rates methodology in 2017 to reflect differences between workers changing careers and retiring. Separation Rates uses two sets of calculations to determine Occupational Transfers (migrations to new careers) and Labor Force Exits (traditional retirements). The new methodology is more dynamic in capturing the nuances of the "gig economy" and provides more precise projections.

Additional information from BLS on the New Occupational Separations Methodology can be found by clicking <u>here</u>. Separations Communications from Projections Central can be found <u>here</u>.

For additional information on the process used to calculate occupational separations, visit this link.

The **Edit Separation Rates** menu allows editing of existing records and adding of new records.

## **Screen Controls**

- Select Area drop-down menu
- Right Click context menu
  - **Add**
  - o **Edit**
  - o Delete

| ihort Term Long Term          | • √ Occ        | upational Report Manager Local Review              | Getting Started | Setti         | ings Exi  | t .                    |
|-------------------------------|----------------|--|-----------------|---------------|-----------|------------------------|
|                               | Edit Separatio | on Rates (OP)                                      |                 |               |           | <b>→</b> <sup>II</sup> |
| Occupational Data             |                | a) 😮 📮 📮   |                 |               |           |                        |
| Manage Areas                  | Select Area:   | United States                                      |                 |               |           |                        |
| Industry Directory            | SOC            | Title  |                 | Transfer Rate | Exit Rate |                        |
| Occupation Directory          | 11-1011        | Chief Executives                                   |                 | 0.04103       | 0.02888   |                        |
|                               | 11-1021        | General and Operations Managers                    |                 | 0.05965       | 0.02073   |                        |
| Import ICT                    | 11-1031        | Legislators  |                 | 0.04196       | 0.02705   |                        |
| Import Staffing Pattern       | 11-2011        | Advertising and Promotions Managers                |                 | 0.07453       | 0.02634   |                        |
| Edit ICT                      | 11-2021        | Marketing Managers                                 |                 | 0.06070       | 0.02272   |                        |
| Edit Staffing Pattern         | 11-2022        | Sales Managers                                     |                 | 0.06070       | 0.02272   |                        |
| Edit Change Factors           | 11-2031        | Public Relations and Fundraising Managers          |                 | 0.05697       | 0.02209   |                        |
| Edit Self Employed Ratios     | 11-3011        | Administrative Services Managers                   |                 | 0.04890       | 0.02996   |                        |
| Edit Separation Rates         | 11-3021        | Computer and Information Systems Managers          |                 | 0.05450       | 0.01760   |                        |
| Edit Occupational Assignments | 11-3031        | Financial Managers                                 |                 | 0.04949       | 0.02299   |                        |
| 9                             | 11-3051        | Industrial Production Managers                     |                 | 0.04567       | 0.02330   |                        |
| on                            | 11-3061        | Purchasing Managers                                |                 | 0.04905       | 0.02912   |                        |
|                               | 11-3071        | Transportation, Storage, and Distribution Managers |                 | 0.05196       | 0.02276   |                        |

Figure 1: Edit Separation Rates module

#### Add a New Record

- 1. Select an area from the **Select Area** drop-down box.
- 2. Right click on any record. A contextual menu will appear.
- 3. Click Add. The Create New Separation Rate dialog box will be displayed.

| C | reate New SeparationRate   |        |      |
|---|--|--------|------|
|   | Select SOC for new SeparationRate.   |        |      |
|   | 17-0000 Architecture and Engineering Occupations                                     | $\sim$ |      |
|   | 17-1000 Architects, Surveyors, and Cartographers                                     |        |      |
|   | 17-2000 Engineers  |        |      |
|   | 17-2061 Computer Hardware Engineers  |        |      |
|   | 17-3000 Drafters, Engineering Technicians, and Mapping Technicians                   |        |      |
|   | 19-0000 Life, Physical, and Social Science Occupations                               |        |      |
|   | 19-1000 Life Scientists  |        |      |
|   | 19-2000 Physical Scientists  |        |      |
|   | 19-3000 Social Scientists and Related Workers  |        |      |
|   | 19-4000 Life, Physical, and Social Science Technicians                               |        |      |
|   | 21-0000 Community and Social Service Occupations                                     |        |      |
|   | 21-1000 Counselors Social Workers and Other Community and Social Service Specialists | ~      |      |
|   | ОК   | Can    | icel |

Figure 2: Add occupation

- 4. Select the SOC to add to the Separation Rates data and click OK.
- 5. Enter the Transfer and Exit Rates for the new record.

| Select Area: | United States   |               |           |   |
|--------------|---|---------------|-----------|---|
| SOC          | Title   | Transfer Rate | Exit Rate | 1 |
| 13-1041      | Compliance Officers   | 0.05040       | 0.02802   |   |
| 15-1111      | Computer and Information Research Scientists                          | 0.05151       | 0.01419   |   |
| 11-3021      | Computer and Information Systems Managers                             | 0.05450       | 0.01760   |   |
| 17-2061      | Computer Hardware Engineers   | 0.04234       | 0.01955   |   |
| 15-1143      | Computer Network Architects   | 0.04922       | 0.01408   |   |
| 15-1152      | Computer Network Support Specialists                                  | 0.05147       | 0.02032   |   |
| 51-4012      | Computer Numerically Controlled Machine Tool Programmers, Metal and P | 0.07013       | 0.02761   |   |

Figure 3: Entering the Transfer Rate and Exit Rate

6. Press Enter, or use the Tab key to save the values for the new record.

#### **Edit Separation Rate Values**

- 1. Select an area using the **Select Area** drop-down box.
- 2. Right click a record and select Edit.

To sort the information in the module, click the Title column to sort the titles.

3. Edit the Transfer Rate and Exit Rate fields.

| Select Area | : United States                             |               |           |
|-------------|---|---------------|-----------|
| SOC         | Title                                       | Transfer Rate | Exit Rate |
| 11-101      | 1 Chief Executives                          | 0.04103       | 0.02888   |
| 11-102      | 1 General and Operations Managers           | 0.05965       | 0.02073   |
| 11-103      | 1 Legislators                               | 0.04196       | 0.02705   |
| 11-201      | 1 Advertising and Promotions Managers       | 0.07453       | 0.02634   |
| 11-202      | 1 Marketing Managers                        | 0.06070       | 0.02272   |
| 11-202      | 2 Sales Managers                            | 0.06070       | 0.02272   |
| 11-203      | 1 Public Relations and Fundraising Managers | 0.05697       | 0.02209   |
| 11-301      | 1 Administrative Services Managers          | 0.04890       | 0.02996   |

Figure 4: Editing the Transfer and Exit Rate fields

#### **Delete a Record**

1. Select an area from the **Select Area** drop-down menu.

2. **Right click** the desired record and select **Delete** from the context menu. The **Delete Record** confirmation dialog box will be displayed.

3. Click **Yes** to delete the record. Click **No** to keep the record.

#### **Related Content**

- Openings
- <u>Occupational Separations</u> (Statistical and Technical Terms)

## **Edit Occupational Assignments**

The **Edit Occupational Assignments** module indicates the education, work experience, and job training requirements for specific occupations. It also allows the adding and editing of occupational positions and records by <u>SOC</u> (Standard Occupational Classification).

#### **Screen Controls**

- Select Area drop-down menu
- Right Click context menu
  - o Add
  - o Edit
  - o Delete

|                               | Edit Occupatio | onal Assignments (OP)                              |                                   |                   | • I         |
|-------------------------------|----------------|--|-----------------------------------|-------------------|-------------|
| Occupational Data             |                | 🔊 😨 🖕 🖕  |                                   |                   |             |
| Manage Areas                  | Select Area:   | United States                                      |                                   |                   |             |
| Industry Directory            | SOC            | Title  | Education                         | Work Experience   | JobTraining |
| Occupation Directory          | 11-1011        | Chief Executives                                   | Bachelor's degree                 | 5 years or more   | None        |
|                               | 11-1021        | General and Operations Managers                    | Bachelor's degree                 | 5 years or more   | None        |
| Import ICT                    | 11-1031        | Legislators  | Bachelor's degree                 | Less than 5 years | None        |
| Import Staffing Pattern       | 11-2011        | Advertising and Promotions Managers                | Bachelor's degree                 | Less than 5 years | None        |
| Edit ICT                      | 11-2021        | Marketing Managers                                 | Bachelor's degree                 | 5 years or more   | None        |
| Edit Staffing Pattern         | 11-2022        | Sales Managers                                     | Bachelor's degree                 | Less than 5 years | None        |
| Edit Change Factors           | 11-2031        | Public Relations and Fundraising Managers          | Bachelor's degree                 | 5 years or more   | None        |
| Edit Self Employed Ratios     | 11-3011        | Administrative Services Managers                   | Bachelor's degree                 | Less than 5 years | None        |
| Edit Separation Rates         | 11-3021        | Computer and Information Systems Managers          | Bachelor's degree                 | 5 years or more   | None        |
| Edit Occupational Assignments | 11-3031        | Financial Managers                                 | Bachelor's degree                 | 5 years or more   | None        |
| 0                             | 11-3051        | Industrial Production Managers                     | Bachelor's degree                 | 5 years or more   | None        |
|                               | 11-3061        | Purchasing Managers                                | Bachelor's degree                 | 5 years or more   | None        |
| <b>OD</b>                     | 11-3071        | Transportation, Storage, and Distribution Managers | High school diploma or equivalent | 5 years or more   | None        |
|                               | <              |  |                                   |                   | >           |

Figure 1: Edit Occupational Assignments module

#### Add Occupational Assignment

1. Select an area from the **Select Area** drop-down menu.

2. **Right click** on any record and select the **Add** option. The **Create New Occupational Assignment** dialog box will be displayed.

| C | reate New Occupational Assignment                                  |          |  |
|---|--|----------|--|
|   | Select SOC for new Occupational Assignment.                        |          |  |
|   | 27-0000 Arts, Design, Entertainment, Sports, and Media Occupations | <u>^</u> |  |
|   | 27-1000 Art and Design Workers                                     |          |  |
|   | 27-2000 Entertainers and Performers, Sports and Related Workers    |          |  |
|   | 27-3000 Media and Communication Workers                            |          |  |
|   | 27-3044 SharePoint Developer                                       |          |  |
|   | 27-4000 Media and Communication Equipment Workers                  |          |  |
|   | 29-0000 Healthcare Practitioners and Technical Occupations         |          |  |
|   | 29-1000 Health Diagnosing and Treating Practitioners               |          |  |
|   | 29-1111 Registered Nurses (OES 2010)                               |          |  |
|   | 29-2000 Health Technologists and Technicians                       |          |  |
|   | 29-2037 Radiologic Technologists and Technicians (OES 2010)        | ~        |  |
|   |  |          |  |
|   | ОК   | Cancel   |  |

Figure 2: Create New Occupational Assignment dialog box

3. Select the SOC code to add and click **OK**. This will return you to the **Edit Occupational Assignments** window.

4. Click the **Education** category drop-down menu and select the desired **Education** category.

| Sele | ct Area: | United States                              |   |                   |  |
|------|----------|--|---|-------------------|--|
| 1    | SOC      | Title                                      | Education   | Work Experience   |  |
| 1    | 27-3022  | Reporters and Correspondents               | Bachelor's degree   | None              |  |
| 2    | 27-3031  | Public Relations Specialists               | Bachelor's degree   | None              |  |
|      | 27-3041  | Editors                                    | Bachelor's degree   | Less than 5 years |  |
| 2    | 27-3042  | Technical Writers                          | Bachelor's degree   | Less than 5 years |  |
| 1    | 27-3043  | Writers and Authors                        | Bachelor's degree   | None              |  |
| - 2  | 27-3044  | SharePoint Developer                       | ~   | 5 years or more   |  |
|      | 27-3091  | Interpreters and Translators               | Doctoral or professional degree                                       | None              |  |
| 2    | 27-3099  | Media and Communication Workers, All Other | Master's degree   | None              |  |
|      | 7-4011   | Audio and Video Equipment Technicians      | Bachelor's degree<br>Associate's degree                               | None              |  |
| 2    | 27-4012  | Broadcast Technicians                      | Postsecondary non-degree award  | None              |  |
| 1    | 27-4013  | Radio Operators                            | Some college, no degree   | None              |  |
| 2    | 7-4014   | Sound Engineering Technicians              | High school diploma or equivalent<br>No formal educational credential | None              |  |
|      | 27-4021  | Photographers                              | High school diploma or equivalent                                     | None              |  |

Figure 3: The occupation is added and assigned an Education category

5. Select an appropriate Education level and Job Training requirements.

#### **Edit an Occupational Assignment**

1. **Right click** on the record and select **Edit** from the context menu. The **Education** category drop-down menu will be activated.

- 2. Select a new level of **Education** to replace the old one.
- 3. Click or Tab into the Work Experience column to edit it.
- 4. Click or Tab into the **Job Training** column to edit its value.
- 5. Press **Enter** or click another occupation to save the changes to the record.

#### **Delete an Occupational Assignment**

1. **Right click** the record and select **Delete** from the context menu. A **Delete Record** confirmation dialog box will be displayed.

2. Click **Yes** to delete the record. Click **No** to keep the record.

#### **Related Content**

Occupation Directory

### **Occupational Analysis Menu Items**

### **Occupational Analysis Introduction**

The **Occupational Analysis** section of Projections Suite enables matching, copying, rollup, and quality checking of occupational data. Use these analysis tools to review data or to create/edit data in preparation for processing projections.



Figure 1: Occupational Projections Analysis group menu

The Occupational Analysis group menu contains the following selections:

- ICT / Staffing Pattern Match
- Copy Staffing Patterns
- Rollup Staffing Patterns
- Data Quality Check

### **ICT/Staffing Pattern Match**

The **ICT/Staffing Pattern Match** module compares the industries in the ICT data with those in the staffing pattern data. The purpose of this module is to identify holes in the data before calculating Occupational Projections.

Missing data can be handled using the <u>Copy Staffing Patterns</u>, <u>Rollup Staffing Pattern</u>, <u>Edit ICT</u>, or <u>Edit Staffing Pattern</u> modules.

#### **Screen Controls**

- Select an Area drop-down menu
- Select a Timeframe drop-down menu
- Filter drop-down menu



Figure 1: ICT/Staffing Pattern Match module

#### View the ICT/Staffing Pattern Matches

- 1. Select an Area from the drop-down menu.
- 2. Select a Timeframe.

3. Select a **Filter** (if any) from the **Filter** drop-down menu. The **ICT/Staffing Pattern Match** data will be displayed.

Selecting a filter is optional. You can select **None** (the default) or **No Matches Only**.

| Se   | lect an Are | a:      | Freedonia                    |      |        |  |           |             |
|------|-------------|---------|------------------------------|------|--------|--|-----------|-------------|
| Sel  | lect a Time | frame:  | 2014 -> 2024                 |      |        |  |           |             |
| Filt | ter:        |         | None                         |      |        |  |           |             |
|      | Ind         | ustry C | Control Totals               |      |        | Staffing Pattern Totals                  |           |             |
|      | NAICS       | Title   |                              | Base | NAICS  | Title                                    | Survey    | Base        |
|      | 236000      | Cons    | truction of Buildings        | 654  | 236000 | Construction of Buildings                | 588.5     | 651.0475785 |
|      | 237000      | Heav    | y and Civil Engineering Cons | 239  | 237000 | Heavy and Civil Engineering Construction | 242.8     | 240.4353377 |
|      | 238000      | Speci   | ialty Trade Contractors      | 531  | 238000 | Specialty Trade Contractors              | 533.8     | 534.2530910 |
|      | 312000      | Beve    | rage and Tobacco Product M   | 222  | 312000 | Beverage and Tobacco Product Manufactur  | 224.6     | 223.5654496 |
|      | 424000      | Merc    | hant Wholesalers, Nondurab   | 699  | 424000 | Merchant Wholesalers, Nondurable Goods   | 711.19999 | 703.2620922 |
|      | 441000      | Moto    | or Vehicle and Parts Dealers | 407  | 441000 | Motor Vehicle and Parts Dealers          | 414.20000 | 404.7117334 |
|      | 444000      | Build   | ing Material and Garden Equ  | 581  | 444000 | Building Material and Garden Equipment a | 593.40000 | 582.4873609 |
|      | 445000      | Food    | and Beverage Stores          | 1254 | 445000 | Food and Beverage Stores                 | 1224.3999 | 1251.225416 |

Figure 2: Data matching the selected criteria is displayed

The sure the correct geographic area and time frame were selected. If staffing patterns were not imported yet, the right half of the screen will be blank. If the ICT data has not been imported, the left half of the screen will be blank.

When you first import the OES staffing patterns, there will be non-matches because the OES does not survey all industries. The following industries in the ICT file will not have staffing patterns:

| 3-digit | 4-digit |
|---------|---------|
| 111     | 1131    |
| 112     | 1132    |
| 113     | 1141    |
| 114     | 1142    |
| 115     | 1153    |
| 482     | 4821    |
| 814     | 8141    |

To correct these non-matches, staffing patterns must be added to the OES staffing patterns. The best source is National staffing patterns. Review the National staffing patterns.

**Projections Suite** 

#### **Related Content**

- Import ICT
- Import Staffing Pattern
  Edit ICT

- Edit Staffing Pattern
  Rollup Staffing Pattern

# **Copy Staffing Patterns**

There may be areas that have staffing patterns which need to be copied to an area, so that data can be worked with without time-intensive manual replication. **Copy Staffing Patterns** facilitates the copying of these patterns from one area to another, or for the same area but within a different time frame.

Select the source you want to copy the data from, then select the target state and Area definition for that state where you want to copy it to. You cannot copy over any industry you already have data for. To replace it, delete the data that already exists using the <u>Edit Staffing Pattern</u> module first. Once it's deleted, you can copy the staffing pattern. No data is actually copied until you click **Save Staffing Patterns**.

The same staffing pattern file can be used for your Long and Short Term Projections. You can import the file twice, entering the respective time frame values. Or, import the file only once and use the Copy Staffing Pattern module to copy it to the same area, within a different time frame.

#### **Screen Controls**

- (Source) Area drop-down menu
- (Source) Timeframe drop-down menu
- (Target) State drop-down menu
- (Target) Area drop-down menu
- Base Year field
- Projected Year field
- Save Staffing Patterns button
- Move right and Move left buttons
- Move all right and Move all left buttons

#### **Projections Suite**

| Short Term              | Long Term                             | √ Occ  | upational  | Report Manager | Loca | l Review  | Settings  | E               | xit           |
|-------------------------|---------------------------------------|--|--|----------------|------|-----------|-----------|-----------------|---------------|
| 364                     |                                       | Copy Staffing  |  |                |      |           |           |                 | <b>*</b> ₫ ×  |
| Occupational Analy      | ysis                                  |  | -  |                |      |           |           |                 |               |
| ICT / Staffing Pattern  | n Match                               |  | S  | ource          |      |           | _         | Target          |               |
| Copy Staffing Patter    | ns                                    | Area:  | United State   | s              | ~    | State     | Freedonia |                 | 2             |
| Rollup Staffing Patte   | ern                                   | Timeframe:   | 2016 -> 202  | 6              | Ŷ    | Area:     |           |                 | ~             |
| Data Quality Check      |                                       |  |  |                |      | Base Year |           | Projected Year: |               |
|                         |                                       |  |  |                |      |           |           | Save Staf       | fing Patterns |
| ор                      | e e e e e e e e e e e e e e e e e e e | 110000 - Ag<br>111000 - Cr<br>112000 - Ar<br>113000 - Fo<br>113132 - Fo<br>113300 - Lo | griculture, Fore<br>op Production<br>nimal Production<br>prestry and Log<br>prestry<br>gging | ion            | - N  | × ×       |           |                 |               |
| Occupational Projection | ons                                   |  |  |                |      |           |           |                 |               |

Figure 1: Copy Staffing Patterns module

#### Copy Staffing Patterns:

1. Click the area to copy from, from the (Source) Area drop-down menu.

The **source** is the data you want to **copy from**. The **Target** is where you want to **copy to**.

2. Select the **Timeframe** from the drop-down menu. Industries with staffing patterns for the selected **(Source) Area** and **Timeframe** will automatically populate.

- 3. Select the State to copy to, from the State (Target) drop-down menu.
- 4. Select the Area to copy to, from the (Target) Area drop-down menu.
- 5. Enter a value in the **Base Year** field.
- 6. Enter a value in the **Projected Year** field.

|  | Source   |   |           |           | Target             |         |
|--|--|---|-----------|-----------|--------------------|---------|
| Area:                                    | United States                                      | ~ | State     | Freedonia |                    |         |
| Timeframe:                               | 2016 -> 2026                                       | ~ | Area:     | Freedonia | (000080)           |         |
|  |  |   | Base Year | 2016      | Projected Year: 20 | 26      |
|  |  |   |           |           | Save Staffing      | Pattern |
| 006010 - Se                              | elf Employed Workers, All Jobs                     | ^ | _         |           |                    |         |
| 110000 4                                 | griculture, Forestry, Fishing and Hunting          |   | > 1       |           |                    |         |
| 110000 - A                               |  |   |           |           |                    |         |
|  | rop Production                                     | 6 |           |           |                    |         |
| 111000 - C                               | rop Production<br>nimal Production                 |   | ~>        |           |                    |         |
| 111000 - Ci<br>112000 - A                |  |   |           |           |                    |         |
| 111000 - Ci<br>112000 - A                | nimal Production<br>orestry and Logging            |   | *         |           |                    |         |
| 111000 - Co<br>112000 - A<br>113000 - Fo | nimal Production<br>prestry and Logging<br>prestry |   |           |           |                    |         |

Figure 2: Data entered into the (Source) Area, Timeframe, (Target) State, (Target) Area, Base Year, and Projected Year fields

7. **Tab** out of the **Projected Year** field. The Target industries will populate if there are any in the database.

|  | Source   |   |                        |   | Target                    |         |
|--|--|---|------------------------|---|---------------------------|---------|
| Area:                                  | United States  | ~ | State                  | Freedonia                               |                           |         |
| Timeframe:                             | 2016 -> 2026   | ~ | Area:                  | Freedonia                               | (000080)                  | 1       |
|  |  |   | Base Year              | 2016                                    | Projected Year: 202       | 6       |
|  |  |   |                        |   | Save Staffing F           | atterns |
| 517100 - W                             | /ired Telecommunications Carriers  | _ | 006010 -               | Self Employ                             | ed Workers, All Jobs      |         |
|  | elf Employed Workers, All Jobs   | 2 | 110000 -               | Agriculture,                            | Forestry, Fishing and Hun | ting    |
| 006010 - S                             |  |   |                        |   |                           |         |
|  | griculture, Forestry, Fishing and Hunting  |   | 111000 -               | Crop Produ                              | ction                     |         |
| 110000 - A                             |  |   | >                      | Crop Produ<br>Animal Prod               |                           |         |
| 110000 - A<br>111000 - C               | griculture, Forestry, Fishing and Hunting  |   | 112000 -               |   | luction                   |         |
| 110000 - A<br>111000 - C<br>112000 - A | griculture, Forestry, Fishing and Hunting<br>rop Production  |   | 112000 -               | Animal Proc<br>Forestry and             | luction                   |         |
| 110000 - A<br>111000 - C<br>112000 - A | griculture, Forestry, Fishing and Hunting<br>rop Production<br>nimal Production<br>orestry and Logging | < | > 112000 -<br>113000 - | Animal Proc<br>Forestry and<br>Forestry | luction                   |         |

Figure 3: Staffing patterns for the selected (Target) Area will automatically populate

The industry list in the Source Area has both active (dark font) and non-active (grayed font) industries. The active industries are not listed in the Target Area

list. If either Area has a matching staffing pattern, both are non-active (grayedout), and it will not be possible to copy the pattern for that industry from the Source Area to the Target Area.

8. Click an industry in the **Source** list with the desired staffing pattern to copy to the **Target** list.

|  | -  |      |                                      |   |                       |               |       |
|--|--|------|--------------------------------------|---|-----------------------|---------------|-------|
|  | Source   |      |                                      |   | Target                |               |       |
| Area:                                  | United States  | ÷    | State                                | Freedonia   |                       |               | 2     |
| limeframe:                             | 2016 -> 2026   | ÷    | Area:                                | Freedonia   | (000080)              |               | 10.00 |
|  |  |      | Base Year                            | 2016  | Projected Year:       | 2026          |       |
|  |  |      |                                      |   | Save Sta              | ffing Pattern | ms    |
| 517100 - W                             | /ired Telecommunications Carriers  | ^    | 006010 -                             | Self Employ   | ed Workers, All Jobs  |               |       |
|  |  | 1000 |                                      | Aminultura  | Forestry, Fishing and | 111           |       |
| 006010 - Se                            | elf Employed Workers, All Jobs   |      | > 110000 -                           | Agriculture,  | rolesuy, rishing and  | Hunting       | 1     |
|  | elf Employed Workers, All Jobs<br>griculture, Forestry, Fishing and Hunting                            | 4    | 111000                               | Crop Produ  |                       | Hunting       | ĺ     |
| 110000 - A                             |  | 4    | >> 111000 -                          | -   | ction                 | Hunting       |       |
| 110000 - A<br>111000 - Ci              | griculture, Forestry, Fishing and Hunting  | C    | >> 111000 -<br>112000 -              | Crop Produ  | ction<br>duction      | I Hunting     |       |
| 110000 - A<br>111000 - C<br>112000 - A | griculture, Forestry, Fishing and Hunting<br>rop Production  | C    | >> 111000 -<br>112000 -              | Crop Produ<br>Animal Proc<br>Forestry and             | ction<br>duction      | I Hunting     |       |
| 110000 - A<br>111000 - C<br>112000 - A | griculture, Forestry, Fishing and Hunting<br>rop Production<br>nimal Production<br>orestry and Logging | C    | >>> 111000 -<br>112000 -<br>113000 - | Crop Produ<br>Animal Proc<br>Forestry and<br>Forestry | ction<br>duction      | I Hunting     |       |

Figure 4: Click an industry in the Source Area to copy it to the Target Area

9. Click the **Move** button (the example in Figure 5 uses the move button). Alternatively, click the **Move All** button to move all available industries to the **Target** list.

In the Source Area, upon right-clicking, the menu options Add Selected, Select All, and Unselect All become available. The Remove Selected, Select All, and Unselect All options become available in the Target Area, by rightclicking.

|             | Source                               |        |            |               | Target   |     |
|-------------|--------------------------------------|--------|------------|---------------|--|-----|
| Area:       | United States                        | ~      | State      | Freedonia     |  |     |
| Timeframe:  | 2016 -> 2026                         | ~      | Area:      | Freedonia     | (000080)   |     |
|             |                                      |        | Base Year  | 2016          | Projected Year: 2026   | _   |
|             |                                      |        |            |               | Save Staffing Patte  | m   |
| 006010 - S  | elf Employed Workers, All Jobs       | ^      | 813400 -   | Civic and So  | cial Organizations   |     |
| 110000 - A  | griculture, Forestry, Fishing and Hu | unting | 813900 -   | Business, Pro | ofessional, Labor, Political, and                            | d : |
| 111000 - C  | rop Production                       | 6      | > 814100 - | Private Hous  | seholds  |     |
|             | nimal Production                     | C      | 999100 -   | Federal Gov   | ernment, Excluding Post Offic                                | e   |
| 112000 - A  |                                      |        |            |               |  |     |
|             | orestry and Logging                  | 6      | 999200 -   | State Govern  | nment, Excluding Education a                                 | nc  |
|             |                                      | -      | <          |               | nment, Excluding Education a<br>nment, Excluding Education a |     |
| 113000 - Fe | orestry                              | <      | 999300 -   | Local Gover   |  |     |

Figure 5: The 517100 industry is moved from the Source list to the Target list

Clicking the **Move** button copies industry 517100 to the Area of Freedonia (000080) for the 2016 to 2026 time frame.

Provide the copied industry is at the bottom of the area. Later, it will be automatically sorted into alphabetical order.

10. Click **Save Staffing Patterns** to save the staffing pattern(s) to the new area and time frame. The staffing patterns will be saved to the Target area:

|             | Source                                    |   |             |                | Target                |                |
|-------------|---|---|-------------|----------------|-----------------------|----------------|
| Area:       | United States                             | ~ | State       | Freedonia      | k.                    |                |
| Timeframe:  | 2016 -> 2026                              | ~ | Area:       | Freedonia      | (000080)              |                |
|             |   |   | Base Year   | 2016           | Projected Year:       | 2026           |
|             |   |   |             |                | Save Sta              | ffing Patterns |
| 006010 - Se | elf Employed Workers, All Jobs            | ~ | 512200 -    | Sound Reco     | rding Industries      | 2              |
| 110000 - A  | griculture, Forestry, Fishing and Hunting |   | > 515100 -  | Radio and T    | elevision Broadcastin | g              |
| 111000 - C  | rop Production                            | 1 | >> 515200 - | Cable and C    | ther Subscription Pro | ogramming      |
| 112000 - A  | nimal Production                          | U | 517100 -    | Wired Telec    | ommunications Carrie  | ers            |
| 113000 - Fo | prestry and Logging                       | 1 | << 517200 - | Wireless Tel   | ecommunications Ca    | rriers (exce   |
| 113132 - Fe | prestry                                   | 4 | 517400 -    | Satellite Tele | ecommunications       |                |
| 113300 - Lo | ogging                                    |   | < 517900 -  | Other Teleo    | ommunications         |                |
|             | shing, Hunting and Trapping               |   | 1           |                |                       |                |

Figure 6: The industry's staffing pattern has been copied and sorted into the Target area

**Projections Suite** 

#### **Related Content**

- Import Staffing Pattern
- Edit Staffing Pattern

# **Rollup Staffing Pattern**

Use the **Rollup Staffing Pattern** module to combine multiple staffing patterns into an ICT industry or to re-code, or re-name, a single staffing pattern to match the ICT data.

The rollup will only let you select an industry for which there isn't already a match. If you already have the ICT data and the staffing pattern data for an industry, the industry will not be displayed in the list; only non-matches are displayed. One possible use of the rollup is changing the staffing pattern's industry code to match the ICT data. Another use is combining multiple staffing patterns into a single staffing pattern to match the ICT data. You can select multiple staffing pattern industries, but only a single ICT industry.

#### **Screen Controls**

- Patterns to Rollup tab
  - Area drop-down menu
  - Timeframe drop-down menu
- Industry Rollup Code tab
- Process tab
  - o Rollup button

| Short Term                                    | Long Term | ✓ Occupationa              | Report        | Manager       | Local Review | Exit         |
|---|-----------|----------------------------|---------------|---------------|--------------|--------------|
| Occupational Anal                             |           | ollup Staffing Pattern (Ol | 2)            |               |              | <b>+</b> ¶ × |
| ICT / Staffing Patter<br>Copy Staffing Patter |           | 1. Patterns To Rollup      | 2. Industry   | / Rollup Code | 3. Process   |              |
| Rollup Staffing Patte                         | ern       | Identify the industries y  | ou want to i  | roll up:      |              |              |
| Data Quality Check                            |           | Area:                      |               |               |              |              |
|   |           | Freedonia                  | *             | 2012 -> 20    | 122 ~        |              |
|   |           | Available industries from  | n Staffing Pa | attern:       |              |              |
| [   | 0         | 212300 - Nonmetallic       | Aineral Mini  | ng and Quarr  | ying         | ~            |
| 00  |           | 213100 - Support Activ     |               | -             |              |              |
|   |           | 221300 - Water, Sewag      |               |               |              |              |
|   |           | 236100 - Residential Bu    | liaing Cons   | truction      |              | ×            |
| Occupational Projecti                         | ions      |                            |               |               |              |              |

Figure 1: Rollup Staffing Pattern module

#### **Rollup Staffing Patterns**

1. Under the **Patterns to Rollup** tab, select an **Area** from the drop-down menu.

**Projections Suite** 

2. Select the **Timeframe** from the drop-down menu.

3. **Select the industry** whose staffing pattern is to be rolled up into another industry.

| . Patterns To Rollup      | 2. Industry | Rollup Code  | 3. Process |  |
|---------------------------|-------------|--------------|------------|--|
| Area:                     |             | Timeframe:   |            |  |
| Freedonia                 | ~           | 2017 -> 201  | 9 ~        |  |
| Available industries from |             |              |            |  |
| 221300 - Water, Sewag     |             | and an and a |            |  |

Figure 2: Area and time frame choices selected

4. Click the **Industry Rollup Code** tab. On this tab is a list of all ICT industries for which there is not a corresponding staffing pattern.

| Rollup Staffing Pattern (OP)                              | × |
|---|---|
| 1. Patterns To Rollup 2. Industry Rollup Code 3. Process  |   |
| Identify the industries you want to roll up:              |   |
| Available Industries from ICT:                            |   |
| 230000 - Construction                                     |   |
| 453000 - Miscellaneous Store Retailers                    |   |
| 530000 - Real Estate and Rental and Leasing               |   |
| 540000 - Professional, Scientific, and Technical Services |   |
| 550000 - Management of Companies and Enterprises          |   |
| 610000 - Educational Services                             |   |
| 720000 - Accommodation and Food Services                  |   |

Figure 3: Selection from Industry Rollup Code tab

5. Select the industry from the **Available industries from ICT** list. These are the industries that do not have a corresponding staffing pattern match. You can only select one available industry.

6. Click the **Process** tab and review your selections.

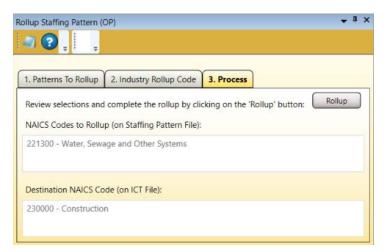


Figure 4: The selected industries are displayed under the Process tab

7. If your selections are correct, click **Rollup**. The Process tab will be cleared after processing the staffing pattern into the designated industry, because they now have a corresponding match. The **NAICS Codes to Rollup (on Staffing Pattern File)** and **Destination NAICS Code (on ICT File)** areas of the screen will empty to reflect completion of the rollup process.

| Rollup Staffing Pattern ( | OP)                          |                  | <b>~</b> <sup>0</sup> |
|---------------------------|------------------------------|------------------|-----------------------|
| Rollup v                  | was successful.              |                  |                       |
|                           | <b>T</b>                     |                  |                       |
| 1. Patterns To Rollup     | 2. Industry Rollup Code      | 3. Process       |                       |
| Review selections and     | complete the rollup by cl    | icking on the 'R | allun' button: Rollup |
|                           |                              |                  |                       |
| NAICS Codes to Rollu      | p (on Staffing Pattern File) |                  |                       |
|                           |                              |                  |                       |
|                           |                              |                  |                       |
| Destination NAICS Co      | de (on ICT File):            |                  |                       |
|                           |                              |                  |                       |
|                           |                              |                  |                       |
|                           |                              |                  |                       |

Figure 5: The staffing pattern rollup was successful

#### **Related Content**

- Edit ICT
- Edit Staffing Pattern

## **Data Quality Check**

The **Data Quality Check** module looks for data problems in the database that will result in invalid results if not resolved. If industries or occupations are listed on the screen, you need to ensure they are removed. If not, they will be included twice, which will result in an over-count of projections data when it is aggregated.

#### **Screen Controls**

- Select an Area drop-down menu
- Select a Timeframe drop-down menu
- Occupation tab
- Industry tab

| Short Term   | Long Term | ✓ Occupat   | tional Report N                      | anager Local Re        | view Settings                   | Exit          |
|--|-----------|---|--------------------------------------|------------------------|---------------------------------|---------------|
| Occupational Ana   | lysis     | Data Quality Check                                  | II (OP)                              |                        |                                 | + ¤ ×         |
| ICT / Staffing Patter<br>Copy Staffing Patte<br>Rollup Staffing Patt | rns       | Select an Area:<br>Select a Timeframe<br>Occupation | Freedonia<br>2014 -> 2024<br>adustry |                        |                                 | ×             |
| Data Quality Check   |           | These occupation                                    | s have survey level an               | d aggregate data which | n will lead to invalid results. |               |
|  |           | SOC   | SOC Title                            |                        | NAIC                            | S NAICS Title |
| op   | Cons.     | ٢   |                                      |                        |                                 | »             |

Figure 1: Data Quality Check module

#### Check the Quality of the Data

- 1. Select an Area from the drop-down menu.
- 2. Select a Timeframe. After searching the database, the results are displayed.
- 3. If there are no errors under the **Occupation** tab, select the **Industry** tab.

|                           | eck II (OP)   |                      | • i |
|---------------------------|---|----------------------|-----|
| 🔒 🥌 🌡                     |   |                      |     |
| Select an Area:           | Freedonia   |                      |     |
| elect a Timefra           | ame: 2017 -> 2019   |                      |     |
| Occupation                | Industry  |                      |     |
|                           |   |                      |     |
| These industri            | ies have survey level and appregate data which will lead to inva- | lid results          |     |
|                           | ies have survey level and aggregate data which will lead to inva  |                      |     |
| NAICS                     | NAICS Title   | Source               |     |
| NAICS                     |   |                      |     |
| NAICS<br>900000           | NAICS Title   | Source               |     |
| NAICS<br>900000<br>910000 | NAICS Title<br>Government   | Source               |     |
| NAICS<br>900000<br>910000 | NAICS Title<br>Government<br>Total Federal Government Employment  | Source<br>ICT<br>ICT |     |

Figure 2: Industries found requiring corrective active

Occupational data with errors will display under the **Occupation** tab. If there were industries found with errors, they will be listed under the **Industry** tab. Data with errors will lead to invalid results. The **Source** column lists where the error is occurring. Depending on the source of the data with errors, use the <u>Edit ICT</u> or <u>Edit Staffing Pattern</u> modules to correct the errors.

## **Occupational Projections Menu Items**

### **Occupational Projections Menu Introduction**

Use the **Occupational Projections** group menu to calculate projections and selfemployed staffing patterns, reconcile, aggregate, process openings, and modify confidentiality.

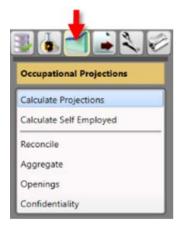


Figure 1: Occupational Projections group menu

The Occupational Projections group menu contains the following selections:

- Calculate Projections
- <u>Calculate Self Employed</u>
- <u>Reconcile</u>
- <u>Aggregate</u>
- Openings
- <u>Confidentiality</u>

### **Calculate Projections**

Use the **Calculate Projections** module to calculate industry and occupation totals. ICT and staffing pattern data for each industry must be in the Occupational Projections system before calculating projections.

For additional information on the process used to calculate projections, visit this link.

#### **Screen Controls**

- Select an Area drop-down menu
- Select a Timeframe drop-down menu
- Industry Totals tab
- Occupations Within Industry tab
  - o **Industry** drop-down menu
  - Change Factor field
- View Industries radio button
- View Occupations radio button
  - Occupation Totals tab
  - o Industries Within Occupation tab
- Calculate Projections button



Figure 1: Calculate Projections module

View the Industry or Occupation Totals

- 1. Select an Area.
- 2. Select a Timeframe.
- 3. Select either **View Industries** or **Occupations** radio buttons.

If you select View Occupations radio button, the occupations roll up and display on the Occupation Totals tab without clicking Calculate
 Projections. Selecting the View Occupations button disables the Calculate
 Projections button.

4. Click **Calculate Projections**. A Calculate Projections dialog box will be displayed.

5. By selecting **Yes**, the data will be calculated and displayed. Select **No** to cancel the process.

#### Industries

The Industry Totals tab displays the industry:

- Estimate
- Estimate Value Rounded (Est (RD))
- Projection
- Projection Value Rounded (Proj (RD))

The **Industry Totals** tab calculates projections from the industries view. On the tab, projections are calculated for all occupations within all industries.

FAII fields are sortable by clicking on a column header. For example, to sort by industry, click on the **Industry** column header.

| elect an Area:<br>elect a Timeframe: | Freedonia<br>2017 -> 2019                  |                |          |                           | Industries O Occupation |
|--------------------------------------|--|----------------|----------|---------------------------|-------------------------|
| Industry Totals                      | Occupations Within Industry                |                |          |                           | Calculate Projections   |
| Industry                             |  | Estimate       | Est (RD) | Projection                | Proj (RD)               |
| 212300 - Nonn                        | netallic Mineral Mining and Quarrying      | 0.00000000     | 0        | 0.000000                  | 00 0                    |
| 221300 - Wate                        | r, Sewage and Other Systems                | 0.00000000     | 0        | 0.000000                  | 00 00                   |
| 236000 - Cons                        | truction of Buildings                      | 795.03974359   | 794      | 887.818877                | 72 887                  |
| 237000 - Heav                        | y and Civil Engineering Construction       | 453.00238663   | 456      | 545.196302                | 18 541                  |
| 238000 - Speci                       | alty Trade Contractors                     | 479.53879388   | 482      | 478.085670                | 18 480                  |
| 310000 - Manu                        | facturing                                  | 0.00000000     | 0        | 459.000000                | 00 459                  |
| 312000 - Bever                       | age and Tobacco Product Manufacturing      | 283.00000000   | 283      | 288.000000                | 00 288                  |
| 327000 - Nonn                        | netallic Mineral Product Manufacturing     | 155.97378004   | 158      | 151.467325                | 95 151                  |
| 334000 - Comp                        | outer and Electronic Product Manufacturing | 19.06896552    | 20       | 19.131264                 | 74 20                   |
| 420000 - Whol                        | esale Trade                                | 0.00000000     | 0        | 763.000000                | 00 763                  |
| 424000 - Merc                        | hant Wholesalers, Nondurable Goods         | 757.05128205   | 755      | 763.94 <mark>1</mark> 024 | 63 763                  |
|                                      |  | 36424.70163841 | 36446    | 51125.49970               | 160 51130               |

Figure 2: View Industries radio button and Industry Total tab selected

On the **Occupations Within Industry** tab, select an **Industry** from the drop-down to view the individual occupations that make up that industry. You can view the individual occupations' specific:

- Estimate
- Est (RD)
- Projection
- Proj (RD)

Select an individual **Industry** from the drop-down to calculate projections for all occupations within a single industry.

| elect an Area:<br>elect a Timefra | Freedonia<br>me: 2017 -> 2019                     |             |          | v<br>v  |             | ndustries O Oco |     |
|-----------------------------------|---|-------------|----------|---------|-------------|-----------------|-----|
| Industry Totals                   | Occupations Within Industry                       |             |          |         |             |                 |     |
| Industry: 23                      | 8000 - Specialty Trade Contractors                |             |          |         |             | ÷               |     |
| Occupatio                         | n   | Estimate    | Est (RD) | Project | ion         | Proj (RD)       | ^   |
| 11-1011 C                         | hief Executives                                   | 1.56183618  | 2        |         | 1.50629051  | Ľ               | 2   |
| 11-1021 G                         | eneral and Operations Managers                    | 55.18487849 | 55       | 5       | 54.91956985 | i               | 55  |
| 11-9021 C                         | onstruction Managers                              | 7.28856886  | 7        |         | 7.24383931  |                 | 7   |
| 13-1051 C                         | ost Estimators                                    | 1.12799280  | 1        |         | 1.12021993  | 3               | 1   |
| 17-3011 A                         | rchitectural and Civil Drafters                   | 0.86768677  | 1        |         | 0.86655031  | ĺ.              | 1   |
| 17-3023 E                         | lectrical and Electronics Engineering Technicians | 2.51629163  | 3        |         | 2.49872251  | Ú               | 2   |
| 17-3027 N                         | Aechanical Engineering Technicians                | 0.86768677  | 1        |         | 0.87071986  | 5               | 1   |
| 41-1011 F                         | irst-Line Supervisors of Retail Sales Workers     | 3.90459046  | 4        |         | 3.88582637  | 1               | 4   |
|                                   |   | 482.0000000 | ) 485    | 4       | 80.000000   | D               | 482 |

Figure 3: Industry selected under the Occupations Within Industry tab

Select an **Occupation** in the table to display the **Change Factor** for that occupation. The change factor can be edited and the projection for the select occupation re-calculated. If you go back to the **Industry Totals** tab and click the **Calculate Projections** button, the changes you made are overridden.

#### Occupations

By selecting the **View Occupations** radio button, the occupation rollups will load and the **Occupation Totals** and **Industries Within Occupation** tabs will become available. The **Calculate Projections** button will become unavailable in the Occupations view.

**Projections Suite** 

The Occupation Totals tab displays each occupation's:

- Estimate
- Estimate Value Rounded (Est (RD))
- Projection
- Projection Value Rounded (Proj (RD))

On the **Industries Within Occupation** tab, select an occupation to view the industry-specific:

- Estimate
- Est (RD)
- Projection
- Proj (RD)

Select the occupation you want to view from the **Occupation** drop-down menu. The data will change to show each instance of where that occupation is employed within an industry.

#### **Related Content**

• <u>Calculate Projections</u> (Statistical and Technical Terms)

## **Calculate Self Employed**

Use the **Calculate Self Employed** module to generate self-employed staffing patterns. Once projections are calculated for all industries using the Calculate Projections module, the number of self-employed workers needs to be calculated using the national ratios.

For additional information on the self employed calculations, visit this link.

#### **Screen Controls**

- Select Area drop-down
- Select Timeframe drop-down
- Create ICT records check box
- Process button



Figure 1: Calculate Self Employed Staffing Patterns module

#### **Generate Self Employed Staffing Patterns**

- 1. Select an area from the Select Area drop-down menu.
- 2. Select a time frame from the Select Timeframe drop-down menu.

3. If ICT values for the selected area and time frame do not exist or if you want to overwrite the current values, click the **Create ICT records** check box.

@ If ICT values already exist, a message displays to Check the Create ICT
records check box to overwrite.

4. Click **Process**. When processing is complete, the Creating Self Employed ICT records dialog box will be displayed.

If the Process button is unavailable, navigate to the <u>Update Database</u> module under the Occupational Utilities group menu and press the Update National Data Files button.

Use the <u>Edit Staffing Pattern</u> module to view the calculated values and the occupations included in the self-employed industry. If you selected the **Create ICT records** option, use the <u>Edit ICT</u> module to view the calculated values.

**Related Content** 

• <u>Calculate Self Employed</u> (Statistical and Technical Terms)

### Reconcile

Use the **Reconcile** module to ensure the occupational projection totals for each industry match the ICT values. Whenever any projections data are changed, make sure the projections are re-reconciled to reflect the changes.

#### **Screen Controls**

- Area drop-down menu
- **Timeframe** drop-down menu
- **Reconcile** button

Reconcile the Difference Between ICT Values and Rounded (RD) Values

- 1. Select an **Area** from the drop-down menu.
- 2. Select a Timeframe.

| Short Term              | Long Term | √ Occ         | upational         | Report Manager         | Local Revie | ew Setti  | ngs        | Exit                          |   |
|-------------------------|-----------|---------------|-------------------|------------------------|-------------|-----------|------------|-------------------------------|---|
| 36 📹 🖬                  |           | Reconcile (OP | - I.              |                        |             |           |            | ¥ 1                           | 1 |
| Occupational Project    | tions     | Area:         | Freedonia         | ÷                      |             |           |            |                               |   |
| Calculate Self Employ   | ed        | Timeframe:    | 2010 -> 2020      |                        |             |           |            | <ul> <li>Reconcile</li> </ul> | e |
| Reconcile               |           | Industry      |                   |                        | Base [ICT]  | Base (RD) | Proj [ICT] | Proj (RD)                     | 1 |
| Aggregate               |           | 000671 -      | - Total Self Emp  | loyed and Unpaid Farr  | 288,003     | 288,009   | 293,815    | 293,824                       |   |
| Openings                |           | 006010 -      | - Self Employed   | Workers, All Jobs      | 414,579     | 414,582   | 450,911    | 450,910                       |   |
| Confidentiality         | _         | 110000 -      | - Agriculture, Fo | restry, Fishing and Hu | 79,912      | 79,919    | 77,547     | 77,557                        |   |
|                         |           | 210000 -      | - Mining          |                        | 9,161       | 9,160     | 9,506      | 9,506                         |   |
|                         | g         | 220000 -      | - Utilities       |                        | 23,165      | 23,170    | 17,166     | 17,161                        |   |
| on                      |           | 236000 -      | - Construction o  | of Buildings           | 45,252      | 45,251    | 48,633     | 48,630                        |   |
|                         |           |               |                   |                        | 6,406,941   | 6,406,927 | 6,960,375  | 6,960,306                     | 1 |
| Occupational Projection | 6         |               |                   |                        |             |           |            |                               |   |

Figure 1: Differences in the ICT values and the calculated RD values

3. Click the **Reconcile** button. After the data is reconciled, the Industries, their Base ICT, Base Value Rounded (RD), Projection (ICT), and Projection (RD) will be displayed.

# Aggregate

Use the **Aggregate** module to aggregate the Industry and Occupation sub-categories into the parent category and to compute the confidentiality value.

#### **Screen Controls**

- Area drop-down menu
- **Timeframe** drop-down menu
- Industry Subtotal Level drop-down menu
- Occupation Subtotal Level drop-down menu
- **Process** button

| Short Term Long Term     | n 🗸 Oc       | upational      | Report Manager Loca                   | I Review          | Getting Started |        | Settings       |   | 1 | Exit    |     |
|--------------------------|--------------|----------------|---------------------------------------|-------------------|-----------------|--------|----------------|---|---|---------|-----|
|                          |              | ojections (OP) | 2                                     |                   |                 | -      |                |   | - | •       | л × |
| Occupational Projections |              | 2.             |                                       |                   |                 |        |                |   |   |         |     |
| Calculate Projections    | Area:        | Freedonia      |                                       |                   |                 |        |                |   |   |         | Ŷ   |
| Calculate Self Employed  | Timeframe:   | 2010 -> 2020   | i i i i i i i i i i i i i i i i i i i |                   |                 |        |                |   |   | Process |     |
| Reconcile                | Industry Sub | total Level:   | II ~ Occupatio                        | n Subtotal Level: | All Y           |        |                |   |   |         |     |
| Aggregate                | NAICS        | SOC            | SOC Title                             | Estimate (RD)     | Projection (RD) | Change | % Change       | 1 | 0 | Conf    | -   |
| Openings                 | 000000       | 00-000         | Total, All Occupations                | 5992362           | 6509464         | 517102 | 8.63           | 1 | 1 | 0       |     |
| Confidentiality          | 000000       | 11-0000        | Management Occupations                | 428648            | 438773          | 10125  | 2.36           | 1 | 2 | 0       |     |
|                          | 000000       | 11-1000        | Top Executives                        | 106578            | 104302          | -2276  | -2.14          | 1 | 3 | 0       |     |
| 9                        | 000000       | 11-1011        | Chief Executives                      | 23838             | 23272           | -566   | -2.37          | 1 | 4 | 0       |     |
| on                       | 000000       | 11-1021        | General and Operations Ma             | 78370             | 76710           | -1660  | -2.12          | 1 | 4 | 0       |     |
|                          | 000000       | 11-1031        | Legislators                           | 4370              | 4320            | -50    | - <b>1</b> .14 | 1 | 4 | 0       | Y   |
| Occupational Projections |              |                |                                       |                   |                 |        |                |   |   |         |     |

Figure 1: The Aggregate module

#### Aggregate the Sub-categories to Parent Categories

- 1. Select an **Area** from the drop-down menu.
- 2. Select a Timeframe.

3. Click the **Process** button. When complete, the calculations will be displayed, aggregated (from Freedonia, in this example) during the 2017 - 2019 time frame:

| Are | ea:        | Freedonia    |                   |                    |                     |            |          |   |   |         |  |
|-----|------------|--------------|-------------------|--------------------|---------------------|------------|----------|---|---|---------|--|
| Tim | neframe:   | 2017 -> 2019 | 9                 |                    |                     |            |          | 8 | - | Process |  |
| Ind | lustry Sub | total Level: | 5 *               | Occupation Subtota | I Level: 3          | ~          |          |   |   |         |  |
|     | NAICS      | SOC          | SOC Title         | Estimat            | e (RD) Projection ( | RD) Change | % Change | 1 | 0 | Conf    |  |
|     | 006010     | 11-1000      | Top Executives    | 40                 | 50                  | 10         | 25       | 6 | 3 | 0       |  |
|     | 006010     | 11-2000      | Advertising, Mar  | keting, Pron 4     | 4                   | 0          | 0        | 6 | 3 | 0       |  |
|     | 006010     | 11-3000      | Operations Spec   | ialties Mana 7     | 7                   | 0          | 0        | 6 | 3 | 0       |  |
|     | 006010     | 11-9000      | Other Managem     | ent Occupal 246    | 306                 | 60         | 24.39    | 6 | 3 | 0       |  |
|     | 006010     | 13-1000      | Business Operat   | ons Speciali 16    | 17                  | 1          | 6.25     | 6 | 3 | 0       |  |
|     | 006010     | 13-2000      | Financial Special | ists 48            | 63                  | 15         | 31.25    | б | 3 | 0       |  |

Figure 2: Aggregated data is displayed

To edit the confidentiality flag, **right click** the occupation, then select **Edit Confidentiality**. You can select or de-select any of the values. Click **Save**. If you click **Process** again, the original confidentiality flag is used.

Filter the displayed information by selecting the **Industry Subtotal Level** and the **Occupation Subtotal Level** drop-down boxes.

# Openings

Use the **Openings** module to calculate the number of job openings based on transfers, exits, and employment changes for specific occupations.

For additional information on the openings calculations, visit this link.

#### **Screen Controls**

- Select an Area drop-down menu
- Select a Timeframe drop-down menu
- **Show** drop-down menu
- **Process** button

| Short Term             | Long Term                                | ~       | Occupati   | onal Report Manager Local Review 🕜 Getting S                      | Started   | Se    | ettings |         | Exit    |       |
|------------------------|--|---------|------------|---|-----------|-------|---------|---------|---------|-------|
|                        | 2 🖉 🖉                                    |         | ions (OP)  |   |           |       |         |         |         | , ņ ; |
| Occupational Projec    | tions                                    |         | # 🗐 🌘      |   |           |       |         |         |         |       |
| Calculate Projections  |  | elect a | n Area:    | Freedonia   |           |       |         |         |         |       |
| Calculate Self Employ  | C 10 10 10 10 10 10 10 10 10 10 10 10 10 | elect a | Timeframe: | 2010 -> 2020  |           | *     | Show:   | All     | * Proc  | ess   |
| Reconcile              |  | Lvl     | SOC        | Title   | Transfers | Exits | Cha     | nge     | Total   |       |
| Aggregate              |  | 1       | 00-000     | Total, All Occupations  | 10,179    | 10,1  | 19      | 553,379 | 573,677 |       |
| Openings               |  | 2       | 11-0000    | Management Occupations  | 148       | 1     | 47      | 39,847  | 40,142  |       |
| Confidentiality        |  | 3       | 11-1000    | Top Executives  | 0         |       | 0       | 8,661   | 8,661   |       |
|                        | 10                                       | 4       | 11-1011    | Chief Executives  | 0         |       | 0       | 1,998   | 1,998   |       |
|                        | Ĭ  | 4       | 11-1021    | General and Operations Managers                                   | 0         |       | 0       | 6,394   | 6,394   |       |
| OD                     |  | 4       | 11-1031    | Legislators   | 0         |       | 0       | 269     | 269     |       |
|                        | 2  | 3       | 11-2000    | Advertising, Marketing, Promotions, Public Relations, and Sales M | 0         |       | 0       | 2,897   | 2,897   |       |
| Occupational Projectio | ns i                                     |         |            |   |           |       |         |         |         |       |

Figure 1: Openings module

#### **Calculate Openings**

- 1. Select an Area from the drop-down menu.
- 2. Select a Timeframe.

3. Click the **Process** button. When the creation and saving of records is complete, a list of openings for the selected area and time frame will be displayed:

#### Openings

| elect ar | Area:      | Freedonia   |           |        |     |        |           |
|----------|------------|---|-----------|--------|-----|--------|-----------|
| elect a  | Timeframe: | 2017 -> 2019  |           | Y Show |     | All    | * Process |
| Lvl      | SOC        | Title   | Transfers | Exits  | Ch  | lange  | Total     |
| 1        | 00-0000    | Total, All Occupations  | 5,996     | 4,     | 434 | 15,532 | 25,962    |
| 2        | 11-0000    | Management Occupations  | 468       |        | 192 | 1,564  | 2,224     |
| 3        | 11-1000    | Top Executives  | 305       |        | 110 | 1,226  | 1,641     |
| 4        | 11-1011    | Chief Executives  | 10        |        | 7   | 12     | 29        |
| 4        | 11-1021    | General and Operations Managers   | 293       |        | 102 | 1,215  | 1,610     |
| 4        | 11-1031    | Legislators   | 2         |        | 1   | -1     | 2         |
| 3        | 11-2000    | Advertising, Marketing, Promotions, Public Relations, and Sales $\mathbbm{N}$ | 15        |        | 5   | 0      | 20        |
| 4        | 11-2011    | Advertising and Promotions Managers   | 1         |        | 0   | 0      | 1         |

Figure 2: List of openings associated with the selected parameters

4. In the Show field, select the SOC level to display (Level 1 - Level 5, or all).

#### **Related Content**

- Edit Separation Rates
- Occupational Separations (Statistical and Technical Terms)

# Confidentiality

The **Confidentiality** module updates confidentiality values based on a threshold specified by the user. This causes the flagging of any base or projected employment cell that is less than the threshold value.

#### **Screen Controls**

- Select Area drop-down menu
- Select Timeframe drop-down menu
- Threshold for confidentiality spinner
- Process button

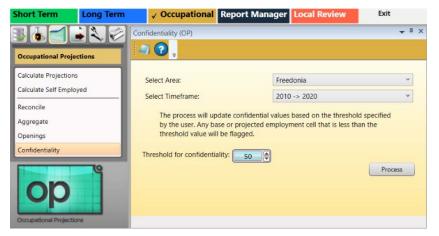


Figure 1: Confidentiality module

#### Update the Confidentiality Threshold

- 1. Select an area from the Select Area drop-down menu.
- 2. Select a time frame from the Select Timeframe drop-down menu.

3. Use the **Threshold for confidentiality** spinner to select the desired threshold parameter.

The threshold is a minimum employment value. All employment cells less than the value are flagged as confidential. The value is determined by each state.

4. Click the **Process** button. An **Updating Confidentiality Records** dialog box will be displayed.

5. Click **OK** to return to the Confidentiality screen.

## **Occupational Output Menu Items**

### **Occupational Output Introduction**

The **Occupational Output** group menu enables the reporting of occupational projections data for a specific area and time frame.

| Occupational Output       |         |
|---------------------------|---------|
| Diagnostic Exports        |         |
| WID Extract Version 2.4   |         |
| WID Extract Version 2.5   |         |
| WID Extract Version 2.6   |         |
| WID Extract Version 2.7   |         |
| Export Occupational Proje | ections |

Figure 1: Occupational Output group menu

The Occupational Output group menu contains the following selections:

- Diagnostic Exports
- WID Extract Version 2.4
- WID Extract Version 2.5
- WID Extract Version 2.6
- WID Extract Version 2.7
- Export Occupational Projections
- Sum of Areas Comparison

## **Diagnostic Exports**

Use the **Diagnostic Exports** module to generate a Mega Matrix and/or a Growth and Education file. Both of these files are used to determine if any adjustments need to be done prior to doing any final exports.

#### **Screen Controls**

- Select an Area drop-down menu
- Timeframe drop-down menu
- Mega Matrix File field
- Growth & Education File field
- ... button

To use the module, projections and openings need to be calculated and aggregated first.

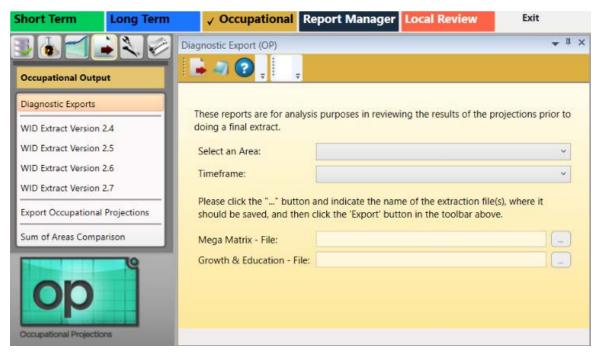


Figure 1: Diagnostic Exports module

#### **Data Not Ready for Exporting**

Clicking the **Diagnostic Exports** screen may produce the following dialog box:

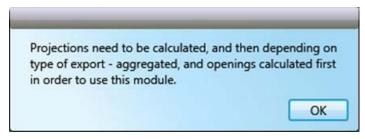


Figure 2: Processes to complete before Diagnostic Exports will process

This dialog box indicates there are necessary data processes that are not complete. These processes create the data required for all the sections in Occupational Output. To proceed with data exports, **complete all projections in the Occupational Projections group menu**.

#### **Data Prepared for Exporting**

If the dialog box (in Figure 2) does not display, proceed with the data export. To process the Occupational Output items:

- 1. Select an Area from the drop-down menu.
- 2. Select a **Timeframe**.

3. Type a location to save the **Mega Matrix File**. Browse to a location by pressing the ... button.

4. Type a location to save the **Growth & Education File**. Browse to a location by pressing the ... button.

|  |  | • 4  |
|--|--|------|
| 🗼 🥥 💽 💄  | ÷  |      |
|  | *  |      |
|  |  |      |
| These reports are for analysi                        | s purposes in reviewing the results of the projections prior to doing a final extract                | τ.   |
| Select an Area:                                      | Freedonia (000078)   | Ŷ    |
| Timeframe:   | 2017 -> 2019   | ~    |
| the 'Export' button in the to                        | and indicate the name of the extraction file(s), where it should be saved, and then<br>polbar above. | LICK |
|  |  |      |
| the 'Export' button in the to<br>Mega Matrix - File: | polbar above.  |      |
| the 'Export' button in the to<br>Mega Matrix - File: | volbar above.<br>\Documents\Occupational Projections\MegaMatrix - Freedonia - 2019.xlsx              |      |
| the 'Export' button in the to<br>Mega Matrix - File: | volbar above.<br>\Documents\Occupational Projections\MegaMatrix - Freedonia - 2019.xlsx              |      |
| the 'Export' button in the to<br>Mega Matrix - File: | volbar above.<br>\Documents\Occupational Projections\MegaMatrix - Freedonia - 2019.xlsx              |      |
| the 'Export' button in the to<br>Mega Matrix - File: | volbar above.<br>\Documents\Occupational Projections\MegaMatrix - Freedonia - 2019.xlsx              |      |

Figure 3: Required information has been entered into the Diagnostic Exports fields

5. Click the **Export** icon in the Active Module Toolbar when the fields have been filled in. This will export the **Diagnostic Reports** to the selected location(s). A dialog box will be displayed to indicate the export is complete.

6. Click **OK** to return to the Diagnostic Exports module.

### **WID Extract Version 2.4**

Use the **Workforce Information Database (WID) Extract Version 2.4** module to create the files needed by your state WID database administrator for publication of projection results on your state website.

#### **Screen Controls**

- Select Area drop-down
- Select Timeframe drop-down
- Period ID field
- Save Option drop-down
  - o Single File
  - Separate Files
  - Auto-Named Files
- Directory & Crosswalk Files tab
  - o inddir (Industry Directory) check box
  - o occdir (Occupation Directory) check box
  - o matxnaic (Matrix Industry Code to NAICS Crosswalk) check box
  - o matxsoc (Matrix Occupation Code to SOC Crosswalk) check box
- Data Files tab
  - o indprj (Industry Projections) check box
  - o occprj (Occupation Projections) check box
  - o iomatrix (Industry/Occupation Matrix) check box
- Multiple Areas tab
  - Combine geographic areas check box



Figure 1: WID Extract Version 2.4 module

## Extract Files for Your State's Website Using the WID Extract Version 2.4 Module

1. Select an area from the **Select Area** drop-down menu.

To select more than one area, use the Multiple Areas tab then export the files.

2. Select a time frame from the **Select Timeframe** drop-down menu.

3. Enter a **Period ID**. The Period ID is a state-specific, 2-digit indicator for target year and base year. The state database administrator can provide this value.

#### 4. Select a **Save Option**.

You can select to create:

- Single File if creating a single file, it can be saved as an .xls or .xlsx file
- Separate Files if creating separate files, they can be saved as an .xls, .xlsx, or .csv file
- Auto-Named Files auto-named files are saved as .csv files

## Directory & Crosswalk Files Tab

- 1. On the Directory & Crosswalk Files tab, select the files to create.
- Industry Directory
- Occupation Directory
- Matrix Industry Code to NAICS Crosswalk
- Matrix Occupation Code to SOC Crosswalk
- 2. Click the **Export** icon in the Active Module Toolbar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click Save or OK.

# **Data Files Tab**

The actual projections data.

- 1. On the Data Files tab, select the files to create.
- Industry Projections detail as well as summary level data
- Occupation Projections detail as well as summary level data
- Industry/Occupation Matrix detail or summary level
- 2. Click the **Export** icon in the tool bar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click Save or OK.

# **Multiple Areas Tab**

Two or more areas must be selected.

- 1. On the Multiple Areas tab, select the areas to include.
  - 1. Select the area in the **Available Areas** box.
  - 2. Click the > button to add the area to the **Selected Areas** box.

Or

- 1. Right-click in the **Available Areas** box.
- 2. Select Add Selected, Select All, or Unselect All.

2. Select **Combine geographic areas** to create one file combining all selected areas.

3. Click the **Export** icon in the Active Module Toolbar.

4. On the pop up window, select the location to save the file and enter a file name.

5. Click **Save** or **OK**.

# **WID Extract Version 2.5**

Use the **Workforce Information Database (WID) Extract Version 2.5** module to create the files needed by your state WID database administrator for publication of projection results on your state website.

### **Screen Controls**

- Select Area drop-down
- Select Timeframe drop-down
- Period ID field
- Save Option drop-down
  - o Single File
  - Separate Files
  - Auto-Named Files
- Directory & Crosswalk Files tab
  - o inddir (Industry Directory) check box
  - o occdir (Occupation Directory) check box
  - o matxnaic (Matrix Industry Code to NAICS Crosswalk) check box
  - o matxsoc (Matrix Occupation Code to SOC Crosswalk) check box
- Data Files tab
  - o indprj (Industry Projections) check box
  - o occprj (Occupation Projections) check box
  - o iomatrix (Industry/Occupation Matrix) check box
- Multiple Areas tab
  - Combine geographic areas check box

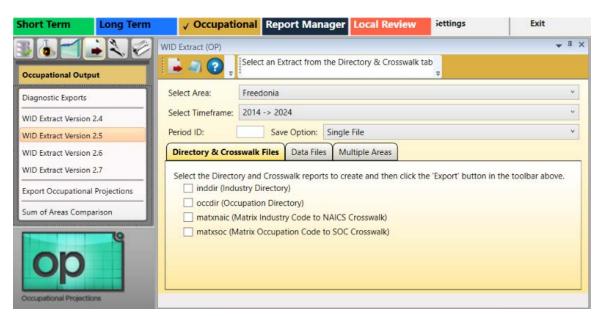


Figure 1: WID Extract Version 2.5 module

# Extract Files for Your State's Website Using the WID Extract Version 2.5 Module

1. Select an area from the **Select Area** drop-down menu.

To select more than one area use the Multiple Areas tab then export the files.

2. Select a time frame from the **Select Timeframe** drop-down menu.

3. Enter a **Period ID**. The Period ID is a state-specific, 2-digit indicator for target year and base year. The state database administrator can provide this value.

#### 4. Select a Save Option.

You can select to create:

- Single File if creating a single file, it can be saved as an .xls or .xlsx file
- Separate Files if creating separate files, they can be saved as an .xls, .xlsx, or .csv file
- Auto-Named Files auto-named files are saved as .csv files

# Directory & Crosswalk Files Tab

- 1. On the Directory & Crosswalk Files tab, select the files to create.
- Industry Directory
- Occupation Directory
- Matrix Industry Code to NAICS Crosswalk
- Matrix Occupation Code to SOC Crosswalk
- 2. Click the **Export** icon in the Active Module Toolbar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click Save or OK.

# **Data Files Tab**

The actual projections data.

- 1. On the Data Files tab, select the files to create.
- Industry Projections detail as well as summary level data
- Occupation Projections detail as well as summary level data
- Industry/Occupation Matrix detail or summary level
- 2. Click the **Export** icon in the Active Module Toolbar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click Save or OK.

# **Multiple Areas Tab**

Two or more areas must be selected.

- 1. On the Multiple Areas tab, select the areas to include.
  - 1. Select the area in the **Available Areas** box.
  - 2. Click the > button to add the area to the **Selected Areas** box.

Or

- 1. Right-click in the **Available Areas** box.
- 2. Select Add Selected, Select All, or Unselect All.

2. Select **Combine geographic areas** to create one file combining all selected areas.

3. Click the **Export** icon in the tool bar.

4. On the pop up window, select the location to save the file and enter a name, if wanted.

5. Click **Save** or **OK**.

# **WID Extract Version 2.6**

Use the **Workforce Information Database (WID) Extract Version 2.6** module to create the files needed by your state WID database administrator for publication of projection results on your state website.

#### **Screen Controls**

- Select Area drop-down
- Select Timeframe drop-down
- Period ID field
- Save Option drop-down
  - Single File
  - Separate Files
  - Auto-Named Files
- Directory & Crosswalk Files tab
  - o inddir (Industry Directory) check box
  - o occdir (Occupation Directory) check box
  - o matxind (Matrix Industry Code to NAICS Crosswalk) check box
  - o matxocc (Matrix Occupation Code to SOC Crosswalk) check box
- Data Files tab
  - o iomatrix (Industry/Occupation Matrix) check box
- Multiple Areas tab
  - Combine geographic areas check box

| WID Extract (OP)   Diagnostic Exports   WID Extract Version 2.4   WID Extract Version 2.5   WID Extract Version 2.6   WID Extract Version 2.7   Export Occupational Projections   Sum of Areas Comparison     Select Area:   Freedonia   Select Area:   Freedonia   Select Timeframe:   2014 -> 2024   Period ID:   Save Option:   Single File   Directory & Crosswalk Files   Data Files   Multiple Areas   Select the Directory and Crosswalk reports to create and then click the 'Export' button in the toolbar above.   indidir (Industry Directory)   occupation Directory)   matxind (Matrix Industry Code to NAICS Crosswalk)   matxocc (Matrix Occupation Code to SOC Crosswalk) | Short Term   | Long Term | ✓ Occupation   | onal Report Ma         | nager Local Rev       | view settings           | Exit                     |
|---|--|-----------|--|------------------------|-----------------------|-------------------------|--------------------------|
| Diagnostic Exports         WID Extract Version 2.4         WID Extract Version 2.5         WID Extract Version 2.6         WID Extract Version 2.7         Export Occupational Projections         Sum of Areas Comparison  | Occupational Out   | put       | And and a second se | Select an Extract fror | n the Directory & Cro | sswalk tab              | + ¤ ×                    |
| WID Extract Version 2.5       Period ID:       Save Option:       Single File         WID Extract Version 2.6       Directory & Crosswalk Files       Data Files       Multiple Areas         WID Extract Version 2.7       Export Occupational Projections       Select the Directory and Crosswalk reports to create and then click the 'Export' button in the toolbar above.       inddir (Industry Directory)         Sum of Areas Comparison       occdir (Occupation Directory)       matxind (Matrix Industry Code to NAICS Crosswalk)   |  |           |  |                        |                       |                         | *<br>*                   |
| WID Extract Version 2.7       Export Occupational Projections         Sum of Areas Comparison       Select the Directory and Crosswalk reports to create and then click the 'Export' button in the toolbar above.         Inddir (Industry Directory)       occdir (Occupation Directory)         Imatxind (Matrix Industry Code to NAICS Crosswalk)  | and the second | Sec. 1    |  |                        |                       |                         | *                        |
| Export Occupational Projections          inddir (Industry Directory)         occdir (Occupation Directory)         occdir (Occupation Directory)         matxind (Matrix Industry Code to NAICS Crosswalk)  | -  |           |  |                        |                       | click the 'Export' butt | on in the toolbar above. |
| matxind (Matrix Industry Code to NAICS Crosswalk)   |  |           | =  |                        |                       |                         |                          |
| Occupational Projections  | ор   |           | matxind (M   | atrix Industry Code to |                       |                         |                          |

Figure 1: WID Extract Version 2.6 module

## Extract Files for Your State's Website Using the WID Extract Version 2.6 Module

1. Select an area from the **Select Area** drop-down menu.

To select more than one area use the Multiple Areas tab then export the files.

2. Select a time frame from the **Select Timeframe** drop-down menu.

3. Enter a **Period ID**. The Period ID is a state-specific, 2-digit indicator for target year and base year. The state database administrator can provide this value.

#### 4. Select a **Save Option**.

You can select to create:

- Single File if creating a single file, it can be saved as an .xls or .xlsx file
- Separate Files if creating separate files, they can be saved as an .xls, .xlsx, or .csv file
- Auto-Named Files auto-named files are saved as .csv files

## Directory & Crosswalk Files Tab

- 1. On the Directory & Crosswalk Files tab, select the files to create.
- Industry Directory
- Occupation Directory
- Matrix Industry Code to NAICS Crosswalk
- Matrix Occupation Code to SOC Crosswalk
- 2. Click the **Export** icon in the Active Module Toolbar.

3. On the pop up window, select the location to save the file and enter a file name.

4. Click Save or OK.

# **Data Files Tab**

The actual projections data.

- 1. On the Data Files tab, select Industry/Occupation Matrix.
- 2. Click the **Export** icon in the tool bar.
- 3. On the pop up window, select the location to save the file and enter a file name.
- 4. Click Save or OK.

# **Multiple Areas Tab**

Two or more areas must be selected.

- 1. On the Multiple Areas tab, select the areas to include.
  - 1. Select the area in the Available Areas box.
  - 2. Click the > button to add the area to the **Selected Areas** box.

Or

- 1. Right-click in the Available Areas box.
- 2. Select Add Selected, Select All, or Unselect All.

2. Select **Combine geographic areas** to create one file combining all selected areas.

3. Click the **Export** icon in the Active Module Toolbar.

4. On the pop up window, select the location to save the file and enter a name, if wanted.

5. Click Save or OK.

# **WID Extract Version 2.7**

Use the **Workforce Information Database (WID) Extract Version 2.7** module to create the files needed by your state WID database administrator for publication of projection results on your state website. For additional information on the WID version 2.7 database structure, click <u>here</u>.

## **Screen Controls**

- Select Area drop-down
- Select Timeframe drop-down
- Period ID field
- Save Option drop-down
  - Single File
  - Separate Files
  - Auto-Named Files
- Directory & Crosswalk Files tab
  - o inddir (Industry Directory) check box
  - o occdir (Occupation Directory) check box
  - o matxind (Matrix Industry Code to NAICS Crosswalk) check box
  - o matxocc (Matrix Occupation Code to SOC Crosswalk) check box
- Data Files tab
  - o iomatrix (Industry/Occupation Matrix) check box
- Multiple Areas tab
  - Combine geographic areas check box

| Short Term          | Long Term     | ✓ Occupati         | onal Report Ma         | nager Local Review            | Exit                   |
|---------------------|---------------|--------------------|------------------------|-------------------------------|------------------------|
| 31-1                |               | VID Extract (OP)   |                        |                               | <b>→</b> # ×           |
| Occupational Outp   | out           | 🖡 🖉 😨 .            | Select an Extract from | n the Directory & Crosswal    | k tab<br>⊋             |
| Diagnostic Exports  |               | Select Area:       | Freedonia              |                               | v                      |
| WID Extract Version | 2.4           | Select Timeframe:  | 2010 -> 2020           |                               | v                      |
| WID Extract Version |               | Period ID:         | Save Option:           | Single File                   | v                      |
| WID Extract Version | 2.6           | Directory & Cros   | swalk Files Data File  | les Multiple Areas            |                        |
| WID Extract Version | 2.7           | Select the Directo | ry and Crosswalk repo  | orts to create and then click | the 'Export' button in |
| Export Occupationa  | I Projections | the toolbar above  |                        |                               |                        |
| Sum of Areas Comp   | parison       |                    | upation Directory)     |                               |                        |
| E                   | - 10          | matxind (M         | atrix Industry Code to | NAICS Crosswalk)              |                        |
|                     |               | matxocc (N         | latrix Occupation Code | e to SOC Crosswalk)           |                        |

Figure 1: WID Extract Version 2.7 module

## Extract Files for Your State's Website Using the WID Extract Version 2.7 Module

1. Select an area from the **Select Area** drop-down menu.

To select more than one area, use the Multiple Areas tab.

2. Select a time frame from the Select Timeframe drop-down menu.

3. Enter a **Period ID**. The Period ID is a state-specific, 2-digit indicator for target year and base year. The state database administrator can provide this value.

4. Select the desired option from the **Save Option** drop-down menu. You can create:

- Single File if creating a single file, it can be saved as an .xls or .xlsx file
- Separate Files if creating separate files, they can be saved as an .xls, .xlsx, or .csv file
- Auto-Named Files auto-named files are saved as .csv files

| Select Area:                   | Freedonia                               |        |  |  |
|--------------------------------|---|--------|--|--|
| Select Timeframe: 2008 -> 2018 |   |        |  |  |
| Period ID:                     | Save Op                                 | otion: | Single File  |  |
|                                | ory and Crosswall                       |        | Single File<br>Separate Files<br>Auto-Named Files<br>ts to create and then click the 'Export' button |  |
| in the toolbar ab              | ove.<br>Istry Directory)                |        |  |  |
| and the second second          | nation Directory                        | 101    |  |  |
| 🔽 ocdir (Occu                  | pation Directory)<br>Aatrix Industry Co |        | NAICS Crosswalk)   |  |

Figure 2: Make a selection from the Save Option drop-down menu

#### **Directory & Crosswalk Files Tab**

- 1. Click the Directory & Crosswalk Files tab.
- 2. Select the check box(es) for the report(s) to create.

# **Projections Suite**

| elect Area:                                       | Freedonia  | Freedonia                   |  |                 |  |  |  |
|---|--|-----------------------------|--|-----------------|--|--|--|
| elect Timeframe:                                  | ne: 2008 -> 2018   |                             |  |                 |  |  |  |
| Period ID:  | Sav  | -                           |  |                 |  |  |  |
|   |  |                             |  |                 |  |  |  |
| -   | and the second sec | Data Files                  | Multiple Areas   |                 |  |  |  |
| in the toolbar abo<br>inddir (Indu<br>ocdir (Occu | ory and Cross<br>ove.<br>Istry Director<br>pation Direct   | walk reports<br>y)<br>cory) | Multiple Areas<br>to create and then click the<br>JCS Crosswalk) | 'Export' button |  |  |  |

Figure 3: Directory & Crosswalk Files tab

3. Click the **Export** icon in the Active Module Toolbar. The selected report(s) will be exported.

#### **Data Files Tab**

- 1. Click the Data Files tab.
- 2. Select the check box(es) for the report(s) to create.



Figure 4: Data Files tab

3. Click the **Export** icon. The selected report(s) will be exported.

#### **Multiple Areas Tab**

- 1. Click the Multiple Areas tab.
- 2. Select the Combine geographical areas check box, if desired.
- 3. Select one of the Areas to combine from the Available Areas section.

| elect Area:   | Freedonia  |      |                |                |  |  |
|---|--|------|----------------|----------------|--|--|
| elect Timeframe:  | 2008 ->  | 2018 |                |                |  |  |
| eriod ID:   | Save Option:                                     |      | Single File    |                |  |  |
|   |  |      | Y              | )              |  |  |
| Directory & Cross                                       |  |      | Multiple Areas |                |  |  |
| Combine geo   |  | eas  | Multiple Areas | Selected Areas |  |  |
| Combine geo<br>Avail<br>Freedonia (00008                | graphic ar<br>able Area<br>30)                   | eas  | Multiple Areas | Selected Areas |  |  |
| Combine geo<br>Avail<br>Freedonia (00008<br>Freedonia V | graphic ar<br>able Area<br>30)<br>VIA 2          | eas  | Multiple Areas | Selected Areas |  |  |
| Combine geo<br>Avail<br>Freedonia (00008                | graphic ar<br>able Area<br>30)<br>VIA 2<br>VIA 3 | eas  |                | Selected Areas |  |  |

Figure 5: Multiple Areas tab

4. Click the **Add** button to move the selected Area to the **Selected Areas** section.

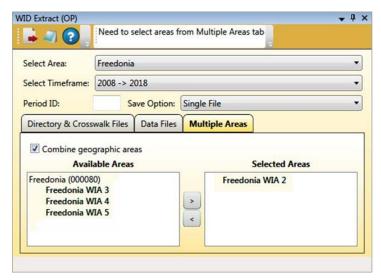


Figure 6: Freedonia WIA 2 added to the Selected Areas section

5. Repeat steps 3 and 4 for each additional area to combine. Or, use the context menu choices (by right-clicking): Add Selected, Select All, or Unselect All.

*©* Selecting more than one choice at a time is possible using the Shift or Ctrl keys. For more information on selecting multiple items, click <u>here</u>.

Two or more areas must be selected.

| elect Area:                   | Freedonia     |           |                |                |  |
|-------------------------------|---------------|-----------|----------------|----------------|--|
| elect Timeframe: 2008 -> 2018 |               |           |                |                |  |
| eriod ID:                     | Save          |           |                |                |  |
| Directory & Cross             | walk Files D  | ata Files | Multiple Areas |                |  |
| - · ·                         | graphic areas |           |                |                |  |
| Combine geo                   | able Areas    |           |                | Selected Areas |  |

Figure 7: Freedonia WIA 2 and WIA 4 are combined

6. Click the **Export** icon on the Active Module Toolbar. The export combines the selected areas.

# **Export Occupational Projections**

The **Export Occupational Projections** module enables the export of Occupational Directory data to Report Manager.

# **Screen Controls**

- Source Area(s) drop-down
- Source Timeframe drop-down

| Short Term  | Long Term | ✓ Occupationa           | Report Manager   | Local Review | Exit         |
|---|-----------|-------------------------|--|--------------|--------------|
| Occupational Output   |           | port Occupational Proje | ections For Report Manage                                  | er           | <b>↓</b> I × |
| Diagnostic Exports<br>WID Extract Version 2                             | c         |                         | o transfer occupation projo<br>above after selecting the d |              |              |
| WID Extract Version 2<br>WID Extract Version 2<br>WID Extract Version 2 | 2.6       | Source Area(s):         |  | v            |              |
| Export Occupational<br>Sum of Areas Compa                               |           |                         |  |              |              |
|   | rs        |                         |  |              |              |

Figure 1: Export Occupational Projections module

# **Export Occupational Projections Data**

To export to Report Manager, log into Report Manager through the Projections Suite.

- 1. Select an area from the **Source Area(s)** drop-down menu.
- 2. Select a time frame from the **Source Timeframe** drop-down menu.
- 3. Click the **Export** button in the Active Module Toolbar.

The Be sure to run the Data Quality Check from the Occupational Analysis group menu before exporting the data into Report Manager.

# **Related Content**

Report Manager

# **Sum of Areas Comparison**

The **Sum of Areas Comparison** module facilitates comparison of sum of areas occupational estimates to state occupational estimates.

For each occupational line, the report shows the state estimate, the sum of areas estimate, the absolute difference, and the percent difference. To highlight potential outliers, the percent deviation of regional occupational estimates from state occupational estimates is also displayed.

This measure of deviation compares each regional occupational estimate as a percent of the regional total, to the state occupational estimate, as a percent of the state total. The analysis is provided separately for base year estimates and projected year estimates. Sort the output on absolute differences to review the largest state to sum of area differences. Review region percent deviations to identify potential estimate adjustments. While a base year analysis is provided, a review of projected estimates is the focus of the analysis.

# **Screen Controls**

- Select an Area Group drop-down menu
- Select Timeframe drop-down menu
- Process button



Figure 1: Sum of Areas Comparison module

# Perform a Sum of Areas Comparison

- 1. Select an Area Group from the drop-down menu.
- 2. Select a time frame with the **Select Timeframe** drop-down menu.
- 3. Click the **Process** button.

4. When processing is complete, the Area Comparison Complete dialog box will be displayed. Click **OK**.

5. Click the **Export** button in the Active Module Toolbar. A **Save as** window will be displayed.

6. Name the file and select an export location. Click **Save**.

7. A **Finished** dialog box will be displayed. Click **OK**.

# **Occupational Compare Menu Items**

# **Occupational Compare Introduction**

Use the **Occupational Compare** group menu to configure an Upload Area account, upload data, and create geographic comparisons.

| ، ا        |                         |
|------------|-------------------------|
| Occupati   | onal Compare            |
| Upload A   | rea Connection          |
| Validation | 1                       |
| Short Terr | m Geographic Comparison |
| Long Terr  | n Geographic Comparison |
| State Self | Publish                 |

Figure 1: Occupational Compare group menu

The Occupational Compare group menu contains the following selections:

- Upload Area Connection
- Validation
- Short Term Geographic Comparison
- Long Term Geographic Comparison
- State Self Publish

# **Upload Area Connection**

Use the **Upload Area Connection** module to configure an Upload Area account. Contact the Utah Projections Help Desk for help with setting up an Upload Area account. There should be only one registered analyst per state.

This module is available in the Short Term, Long Term, and Occupational Projections applications. The Notebook is not available in the Long Term Upload Area Connection module.

## **Screen Controls**

- Service URL field
- Email field
- Password field
- **Connect** button

| Short Term           | Long Term        | ✓ Occuj        | pational  | Report Ma         | nager Local I           | Review       | Settings                 | Exit                    |
|----------------------|------------------|----------------|-----------|-------------------|-------------------------|--------------|--------------------------|-------------------------|
| 361                  |                  | Staging Area C | onnection |                   |                         |              |                          | <b>▼</b> <sup>1</sup> × |
| Occupational Con     | npare            | - 🕐 💭 -        |           |                   |                         |              |                          |                         |
| Upload Area Conn     | ection           |                |           |                   | the first sector of the |              | count Setup              |                         |
| Validation           |                  |                |           | t Site email and  |                         | r connecting | g to the Upload Area. To | o access, please enter  |
| Short Term Geogra    | aphic Comparison | Service URL:   | https://m | atrixservices.pro | jectionscentral.com     | /            |                          |                         |
| Long Term Geogra     | phic Comparison  | Email:         |           |                   |                         |              |                          |                         |
| State Self Publish   |                  | Password:      |           |                   |                         |              |                          |                         |
|                      |                  |                |           |                   |                         |              |                          |                         |
|                      |                  |                |           |                   |                         |              |                          |                         |
| on                   | e                |                |           |                   | Co                      | nnect        |                          |                         |
| Occupational Project |                  |                |           |                   |                         |              |                          |                         |

Figure 1: Upload Area Connection module

#### Login to Geographic Comparison Upload Area Account

- 1. Enter your Projections Support Site email address in the Email field.
- 2. Enter your **Projections Support Site password** in the **Password** field.

3. Click **Connect**. A Finished dialog box will be displayed if the connection is successful.

4. Click **OK** to return to the **Upload Area Connection** module.

*The connection is unsuccessful, the following message will be displayed:* 

Email / Password combination failed. It's possible your account has not yet been approved. Please check to make sure you entered eveything correctly. If you have any questions, you can contact Brett Judd at bdjudd@utah.gov

Figure 2: Connection failure dialog

5. Check your email address and password combination and try again. If multiple failures occur, contact the Utah Projections Help Desk for assistance.

#### **Related Content**

- Validation
- State Self Publish

# Validation

Use the **Validation** module to validate and submit your **Employment and Training Administration** (ETA) deliverable data. Projections that were done using Projections Suite, Occupational Projections modules, or imported data can be validated and uploaded.

# **Screen Controls**

- Projection Suite Data radio button
  - State drop-down menu
  - o Timeframe drop-down menu
  - Export To Upload Area radio button
  - Export To File radio button
    - File field
    - ... button
  - Send ETA button
- Import File radio button
  - o Select file to import field
  - Detected File Type field
  - o Browse button
  - o **Import** button

| Short Term         | Long Term       | ✓ Occupational           | Report Manager Local Review                   | Settings | Exit         |
|--------------------|-----------------|--------------------------|---|----------|--------------|
| 361                |                 | ETA Validation           | Click the State dropdown to select your State |          | <b>↓</b> ‡ × |
| Occupational Com   | pare            | . 3                      | chek the state diopuolin to select your state |          |              |
| Upload Area Conne  | ection          | Select the source of you | r ETA data for validation.                    |          |              |
| Validation         |                 | Projection Suite Dat     | a 🔿 Import File                               |          |              |
| Short Term Geograp | phic Comparison | State:                   | [   |          | Y            |
| Long Term Geograp  | ohic Comparison | Timeframe:               |   |          | <b>~</b>     |
| State Self Publish |                 |                          | la -  |          |              |
|                    |                 |                          |   |          |              |

Figure 1: Validation module

# **ETA Data Source Selection**

- 1. Select the source of your ETA data for validation. Select either the:
- Projection Suite Data radio button

• Import File radio button

#### Validate ETA Data and Export to a File

- 1. Select the Projection Suite Data radio button.
- 2. Select a state from the **State** drop-down menu.

3. Select a **Timeframe** from the drop-down menu. If there are any errors, they will be displayed in the validation error box near the bottom of the screen (check the source of your data and try again). If there are no errors in the data, the message "Validation: Successful" will be displayed.

| ETA Validation |                 |                                | ▲ ġ ×                                   |
|----------------|-----------------|--------------------------------|---|
|                | 🥥 🕐 🗐           | Processing Finished.<br>Ţ      |   |
| Select the     | source of your  | ETA data for validation.       |   |
| Project        | tion Suite Data | O Import File                  |   |
| State:         |                 | Freedonia (000078)             | <b>*</b>                                |
| Timeframe      |                 | 2014 -> 2024                   | ~                                       |
| O Export T     | o Upload Area   | Export To File                 |   |
| Please cli     | ck the "" butte | on and indicate the name of th | e extraction file, where it should be s |
| File:          |                 |                                |   |
|                |                 |                                |   |
|                |                 |                                |   |
| Roy            | w # Message     | •                              |   |
|                | 1 Validation    | n: Successful                  |   |
|                |                 |                                |   |
|                |                 |                                |   |

Figure 2: Export validated data to file

- 4. When the data displays, click the **Export to File** radio button.
- 5. Click the ... button, then select the location to save the file to.

6. Click the **Export** icon on the tool bar. Export the file to correct any errors or make changes. When the file is exported, a **Finished Extract Data** message will be displayed.

7. Click **OK**.

Exporting data to a file is not a required step in validation, but is an available option if you require the data in an external file.

# **Export Validated ETA**

1. Click Export to Upload Area.

2. Click **Send ETA**. When data is successfully submitted, a message will be displayed and a confirmation email will be sent.

## Import a File for Upload

- 1. Click Import File.
- 2. Click Browse to Select file to import.

3. Select the file. Projections Suite will check the file type. If it is not a valid ETA format, or if the file still contains invalid data, an error will be displayed.

- 4. When the data displays, click **Import**.
- 5. Click Export to Upload Area.
- 6. Click Send ETA.
- If the data needs to be updated, use the **Validation** module again. The previous projections data is deleted and the new data is stored.

## **Non-Projections Suite Data**

For **states that do not use Projections Suite** to do projections, their projections data can be sent to the Upload Area by using the Validation module and importing an Excel file. The columns needed in the file format can be viewed by visiting the <u>Validation of Section of the ETA File Format</u> topic.

# **Short Term Geographic Comparison**

Use the **Short Term Geographic Comparison** module to create comparisons. You can create comparisons for:

- Compare to States
- Region Compare
- Workforce Compare
- Services Compare
- Goods Compare

Data is stored in the Upload Area for all states which have submitted data. Short Term Geographic Comparison requires data from at least three states.

The Short Term Geographic Comparison module is available in the Short Term and Occupational Projections applications. It is important to make the distinction: the Short Term Geographic Comparison module compares *industry* data; the Short Term Geographic Comparison module in the Occupational Compare group menu utilizes *occupational* data.

If you do not have an Upload Area account, an error message displays. You are unable to make comparisons until you have the account set up. Reference the <u>Upload Area Connection</u> module for information on creating an account.

# **Screen Controls**

- Select the base state drop-down menu
- Geographic Comparison button
- Compare to States radio button
  - Available States table
  - Selected States table
- **Region Compare** radio button
- Workforce Compare radio button
- Services Compare radio button
- Goods Compare radio button
- Available States screen
- Selected States screen
- Move buttons

# **Projections Suite**

| Short Term Long Term  | Occupational Report Manager Local Review  | Getting Started | Settings        | Exit                    |
|---|---|-----------------|-----------------|-------------------------|
| D Ccupational Compare   | Short Term Geographic Comparison  |                 |                 | ¥ 1                     |
| Upload Area Connection<br>Validation<br>Short Term Geographic Comparison<br>Long Term Geographic Comparison<br>State Self Publish | Select the base state for the review. Then select at least 3 states as th Utah - 2/27/2018 2:20:04 PM    Compare to States   Region Compare    Workforce Compare    Compare to States   Compare                   | Geo             | ith the last upload dat |
|   | Available States  |                 | Selected States |                         |
| Op State  | Alabama - 2/26/2018 3:14:57 PM<br>Alaska - 2/27/2018 4:31:55 PM<br>Arizona - 3/27/2018 5:08:13 PM<br>Arkansas - 2/16/2018 8:47:07 AM<br>California - 3/5/2018 9:27:35 AM<br>Colorado - 2/12/2018 1:07:27 PM<br>Connecticut - 2/23/2018 11:01:24 AM  | × ×             |                 |                         |

Figure 1: Short Term Geographic Comparison module

To generate comparisons from the Short Term Geographic Comparison module, select the type of comparison using the radio buttons. Submitted data includes the state name and submittal date and time. The date and time is used to ensure the compared data is the latest, most updated data.

#### **Compare to States**

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.

2. Select the states from the **Available States** box and move them to the **Selected States** box. Click the state, then click the arrow button. Or, click the double arrow button to move all **Available States** to the **Selected States** box.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### **Region Compare**

1. Select the base State. The base state defaults to your state. You can select any state from the list as the base state for the comparison.

2. Select the Region for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### Workforce Compare

- 1. Select the base State.
- 2. Select the Workforce Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### Service Compare

- 1. Select the base State.
- 2. Select the Services Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### **Goods Compare**

- 1. Select the base State.
- 2. Select the Goods Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click **OK**.
- 5. Click the **Export** icon in the tool bar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

# **Related Content**

Geographic Comparison File Format

# Long Term Geographic Comparison

Use the **Long Term Geographic Comparison** module to compare geographic data. You can create comparisons for:

- Compare to States
- Region Compare
- Workforce Compare
- Services Compare
- Goods Compare
- Compare to Nation

Data is stored in the Upload Area for all states which have submitted data. Long Term Geographic Comparison requires data from at least three states.

This module is available in the Long Term and Occupational Projections applications. It is important to make the distinction: the Long Term Geographic Comparison module under the Long Term application compares *industry* data; the Long Term Geographic Comparison module in the Occupational Compare group menu utilizes *occupational* data. The Notebook is not available in the Long Term Upload module.

If you do not have an Upload Area account, an error message displays. You are unable to make comparisons until you have the account set up. Reference the <u>Upload Area Connection</u> module for information on creating an account.

# **Screen Controls**

- Select the base state drop-down menu
- Geographic Comparison button
- Compare to States radio button
- Region Compare radio button
- Workforce Compare radio button
- Services Compare radio button
- Goods Compare radio button
- Compare to Nation radio button
- Available States screen
- Selected States screen
- Move Right button
- Move Left button
- All Right button
- All Left button

# **Projections Suite**

| Short Term Long Term   | Occupational Report Manager Local Review   | Getting Started   | Settings        | Exit   |
|--|--|---|-----------------|--|
| Occupational Compare   | Long Term Geographic Comparison  |   |                 | * 1  |
| Upload Area Connection<br>Validation<br>Short Term Geographic Comparison | Select the base state for the review. Then select at least 3 states as the co<br>Freedonia - 4/3/2018 2:39:27 PM   | mparison group and click Geographic Compa   | -               | vith the last upload date<br>ographic Comparison |
| Long Term Geographic Comparison<br>State Self Publish                    | Compare to States         O Region Compare         O Workforce Compa   | re O Services Compare O Goods I   | Compare 🔿 Com   | pare to Nation                                   |
|  | Available States   |   | Selected States |  |
| op   | Colorado - 6/4/2018 8:04:20 AM<br>District of Columbia - 6/5/2018 7:27:04 AM<br>Missouri - 6/5/2018 9:49:59 AM<br>Montana - 9/6/2017 4:12:23 PM<br>South Carolina - 5/23/2018 1:01:34 PM | <ul> <li></li> <li><td></td><td></td></li></ul> |                 |  |
| Decupational Projections   |  |   |                 |  |

Figure 1: Long Term Geographic Comparison module

To generate comparisons from the Long Term Geographic Compare module, select the type of comparison using the radio buttons. Submitted data includes the state name and submittal date and time. The date and time is used to ensure data compared is the latest, most updated data.

#### **Compare to States**

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.

2. Select the states from the **Available States** box and move them to the **Selected States** box. Click the state then click the arrow button. Or, click the double arrow button to move all **Available States** to the **Selected States** box.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### **Region Compare**

1. Select the base state. The base state defaults to your state. You can select any state from the list as the base state for the comparison.

#### 2. Select the Region for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

## Workforce Compare

- 1. Select the base state.
- 2. Select the Workforce Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

## Service Compare

- 1. Select the base state.
- 2. Select the Services Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click **OK**.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

#### **Goods Compare**

- 1. Select the base state.
- 2. Select the Goods Quartile for the comparison.

3. Click **Geographic Comparison**. When the comparison is complete, a message displays.

- 4. Click OK.
- 5. Click the **Export** icon in the Active Module Toolbar.

6. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

**Projections Suite** 

# **Compare to Nation**

1. Select the base state.

2. Click **Geographic Comparison**. When the comparison is complete, a message displays.

3. Click OK.

4. Click the **Export** icon in the Active Module Toolbar.

5. In the **Save As** pop up window, select the location, enter a **File Name**, select the **Save as type** then click **Save**.

# **Related Content**

Geographic Comparison File Format

# **State Self Publish**

The **State Self Publish** module enables publication of projections data to the public website. You must have a connection to the Upload Area to publish the projections. Reference the <u>Upload Area Connection</u> module for information on creating an account.

When the data is published successfully, a message displays and a confirmation email is sent. If the public website is not ready to accept data for the selected time frame, a **Can't Publish** message displays.

The previously stored data with the new data.

## **Screen Controls**

- Short Term Projections radio button
- Long Term Projections radio button
- Publish button



Figure 1: State Self Publish module

# **Publish Short Term Projections**

- 1. Select the Short Term Projections radio button.
- 2. Click the **Publish** button.

Projections Suite

# Publish Long Term Projections

- 1. Select the Long Term Projections radio button.
- 2. Click the **Publish** button.

# **Occupational Utilities Menu Items**

# **Occupational Utilities Introduction**

Use the **Occupational Utilities** group menu to manage and export the notebook and perform miscellaneous administrative functions.

| Occupational Utilities |  |  |  |  |
|------------------------|--|--|--|--|
| Notebook               |  |  |  |  |
| Export Notebook        |  |  |  |  |
| Backup Database        |  |  |  |  |
| View System Log        |  |  |  |  |
| Check For Updates      |  |  |  |  |
| Update Database        |  |  |  |  |
| Add Separations Tables |  |  |  |  |

Figure 1: Occupational Utilities group menu

The Occupational Utilities group menu contains the following selections:

- <u>Notebook</u>
- Export Notebook
- Backup Database
- <u>View System Log</u>
- <u>Check for Updates</u>
- Update Database
- Add Separations Tables

# Notebook

Use the **Notebook** module to record user and statistical notes for each area and time frame. The Notebook can be helpful during the analysis and projections process. It can also be used to keep historical records for industries, which can be helpful when state analysts leave and new analysts begin using the application.

You can access the Notebook in all but a few Short Term Industry and Occupational Projections modules. The Long Term application does not have access to the Notebook.

## **Screen Controls**

- Area drop-down menu
- Timeframe drop-down menu
- Save button
- Reload button
- Delete All Notes button

## **Record or Modify Notes**

1. Click the **Notebook** module from the group menu. The **Notebook screen** will be displayed in its own undocked window:

| Area    | Freedonia (000078) |     |      |        |                  |  |
|---------|--------------------|-----|------|--------|------------------|--|
| neframe | 2017 -> 2019       | ~ [ | Save | Reload | Delete All Notes |  |
| otes    |                    |     | Save | Reload | Delete All Notes |  |
| s       |                    |     |      |        |                  |  |
|         |                    |     |      |        |                  |  |
|         |                    |     |      |        |                  |  |
|         |                    |     |      |        |                  |  |
|         |                    |     |      |        |                  |  |
|         |                    |     |      |        |                  |  |

Figure 1: Notebook module

2. Select an area to record/modify notes about, with the Area drop-down menu.

3. Select a time frame to record/modify notes for, by clicking the **Timeframe** drop-down menu.

- 4. **Type the notes** for the selected area and time frame.
- 5. Click the Save button.

## **Export Notes**

1. Click the **Export** button in the Active Module Toolbar. A **Save As** dialog box will be displayed.

- 2. Select a name and location for the notebook file to be exported to.
- 3. Click the **Save** button.

# **Printing the Notes**

1. Click the **Print** button in the Active Module Toolbar. The **Print Preview dialog box** will be displayed. The **Print Preview dialog box** contains seven icons to assist with the printing/confirmation process. From left to right, they are the:

- **Print** <u>icon</u> used to send the notebook to the printer.
- Zoom In and Zoom Out cons are used to make the text larger and smaller.
- View at 100% [III] icon used to view the Notebook at 100% of its size.
- View at Page Width icon used to view the notebook so it fills the width of the page.
- View Whole Page icon used to view the entire Notebook page.
- View Two Pages icon used to view two pages of the Notebook at the same time.

2. Click the **Print** icon after making all of the needed entries and adjustments. The Notebook data will print.

## **Export Notebook**

The **Export Notebook** menu enables the export of all notes for specific areas and export of *all* notebook data.

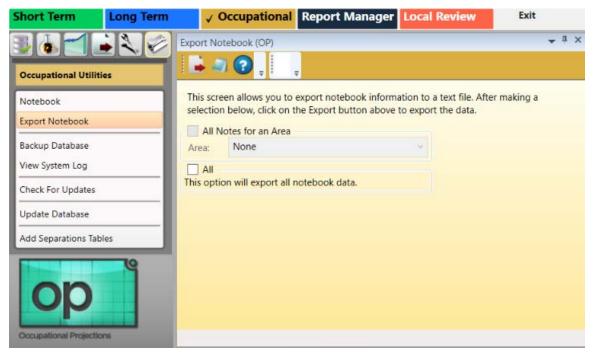


Figure 1: Export Notebook module

#### Export/Save All Notes from a Specific Area

1. Select the **All Notes for an Area** check box to save and export a single Area's notes.

2. Select an area for export from the Area drop-down menu.

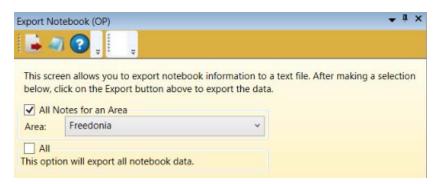


Figure 2: Export notes for an area

3. Click the **Export** icon in the Active Module Toolbar. A **Save As** dialog box will be displayed.

- 4. Navigate to the desired folder and enter a name for the file.
- 5. Click the **Save** button. This will save the notes for the designated area.

#### Save All Notes from All Areas and Time Frames

1. Click the **All** check box.

|       | een allows you to export notebo<br>ion below, click on the Export b |    |  |
|-------|---|----|--|
|       | otes for an Area  |    |  |
| Area: | Freedonia   | *  |  |
|       |   |    |  |
|       | on will export all notebook data                                    | a. |  |

Figure 3: Exporting all notes from every Area and time frame

- 2. Click the **Export** button. A **Save As** dialog box will display.
- 3. Select a name and location for the exported file.
- 4. Click the **Save** button.

## **Backup Database**

Use the **Backup Database** module to create a copy or archive the existing data in the database so the information can be restored if needed.

#### **Backup Changes in the Database**

1. Click the **Backup Database** menu choice from the **Occupational Utilities** group menu. The backup process will begin immediately. When the backup is complete, the following screen will be displayed:

| Backup Database (OP)           |  |
|--------------------------------|--|
| Backup complete                |  |
| Click OK to close this window. |  |
| ОК                             |  |

Figure 1: Backup Database dialog box

2. Click OK.

If there is an issue with the backup process, a Backup error dialog displays. Read the error information and click OK to close the window. Correct any errors and select the Backup Database module to try again.

#### Set a Backup Location

If there is no backup directory selected in the <u>DB Setup Tool</u>, an error will be displayed. To select a backup folder:

1. Double-click the Projections Suite Database Tool icon on your desktop, or navigate to it through the Start menu.

#### **Backup Database**

| Database Setup   | Diagnostics        |  |  |   |                 |
|--|--------------------|--|--|---|-----------------|
| Credentials<br>Server Inform   | ation              |  |  | Tasks<br>Required Steps:  | Optional Steps: |
| Server Name: SEDTS-L1LF-4GNH\SQLEXPRESS v Port: 1433 Server Administrator Username: PS Application User Username: Password: Password: Password: Vise Windows Login V Use Windows Login |                    | Connect                                      | <ol> <li>Create Database</li> <li>2. Create User</li> <li>3. Add Required Data</li> <li>4. Save Configuration</li> </ol> | <ul> <li>Add Demo Data</li> <li>Restore Database</li> <li>Delete Database</li> <li>Uninstall FoxPro driver</li> </ul> |                 |
| Database Nan<br>ProjectionsS<br>Database Back<br>Location: C/U   | uite<br>kup Folder | 9  |  |   | Help            |
|  | Please click Help  | or read the Setup manual for instructions on | configuring these option   | 15.   |                 |
| Progress Informa<br>Overall Progress<br>File Progress  | :                  |  |  |   |                 |
| Ready  | y Time             | Process Status Descri                        | ption  | Info  |                 |

Figure 2: Projections Suite Database Tool, browse and select a database backup location highlighted

- 2. Click the **backup folder icon** in the DB Setup Tool.
- 3. Select a location for your database backup folder.
- 4. Click OK.
- 5. Click the (Step 4) Save Configuration button.
- 6. Exit the database tool.

#### **Related Content**

Projections Suite Database Setup Tool

## **View System Log**

The **View System Log** module is used in the event Projections Suite is not functioning properly. A copy of the System Log may be required to troubleshoot your Projections Suite environment. This module is available in Short Term, Long Term, and Occupational Projections.

#### View the System Log

- 1. Click the View System Log menu choice. Two dialog boxes will be displayed:
  - View System Log instructions dialog box, containing this message:



If you have been asked to provide your log to Projections Suite support personnel, please save the log displayed in Notepad to your desktop and then attach it to an email addressed to your support contact. You can then close this window.

Figure 1: Instructions for sending the System Log to a support contact

• Notepad log file containing the log information:

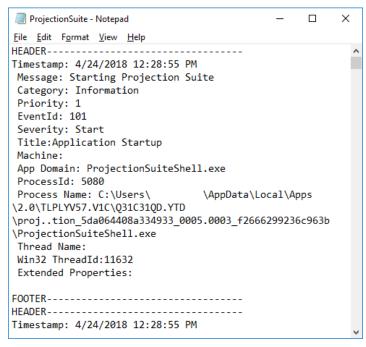


Figure 2: Projections Suite Log

## **Check for Updates**

The **Check for Updates** module is available in Short Term, Long Term, and Occupational Projections. To check for updates to the Projections Suite application:

1. Select the **Check For Updates** option from the **Utilities** group menu.

2. Select the **Click here to check for updates** button. If the application is up to date, the following message will be displayed:

| rojections Suite     | wessage                  | _  |
|----------------------|--------------------------|----|
| No update available. | Proceed with projecting! |    |
|                      |                          | OK |

Figure 1: Projections Suite Message dialog box

## **Update Database**

The **Update Database** module facilitates the updating of the Industry Directory, Occupational Directory, and National Data Files. To update the databases:

1. Select the **Update Database** menu option from the **Occupational Utilities** group menu. The Update Database module will be displayed:

| Jpdate Database (OP | 2)        |                               |                            | <b>→</b> ₫ × |
|---------------------|-----------|-------------------------------|----------------------------|--------------|
| 📕 🛹 🥥 🔇             |           |                               |                            |              |
| Update Industry     | Directory | Update Occupational Directory | Update National Data Files |              |
| Update Title        |           |                               |                            |              |
| Action              | Messa     | ge                            |                            |              |
|                     |           |                               |                            |              |
|                     |           |                               |                            |              |
|                     |           |                               |                            |              |
|                     |           |                               |                            |              |
|                     |           |                               |                            |              |
|                     |           |                               |                            |              |
|                     |           |                               |                            |              |
|                     |           |                               |                            |              |
|                     |           |                               |                            |              |

Figure 1: Update Database module

From here, select one of the following three options:

#### Update the Industry Directory

1. Select the **Update Industry Directory** button to update the directory. If there are no updates to complete, the following message will be displayed:

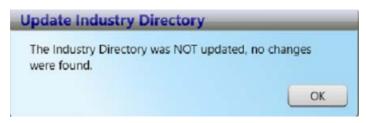


Figure 2: Update Industry Directory dialog box

#### Update the Occupational Directory

1. Select the **Update Occupational Directory** button to update the occupational directory. If there are no updates to complete, the following message will be displayed:

| updated, no changes |
|---------------------|
| upuated, no changes |
| -                   |
|                     |

Figure 3: Update Occupation Directory dialog box

#### **Update the National Data Files**

1. Select the **Update National Data Files** button to update the national data files. When the process is complete, the following dialog box will be display:

| Update                             | _  |
|------------------------------------|----|
| The national data has been updated |    |
|                                    | OK |

Figure 4: National Data Update dialog box

## **Add Separations Tables**

The latest release of Projections Suite uses Separations instead of Replacements in the calculation of Openings in Occupational Projections. This requires that Separations Tables be added to your database.

If you participated in the Separations Testing, the tables will have already been added. If not, the tables can be added using one of the three methods listed below. Only one of these methods is needed to add the tables; all three methods are not required.

Adding the tables to the database requires administrative rights (or at least, rights sufficient to add the tables). Assistance from your IT staff may be required.

#### First Method to Add Separations Tables

1. Update the Database Setup Tool to the latest version if this has not already been done.

2. Open the **Projections Suite Database Tool** by double-clicking it on the desktop, or selecting it from the Windows Start menu.



Figure 1: Projections Suite Database Setup Tool icons

3. When the Database Tool is open, click the **Connect** button. This will enable the third step's (**Add Required Data**) button under **Tasks**, in the **Required Steps** column:

|   | 1. Create Database   |
|---|----------------------|
| å | 2. Create User       |
| 2 | 3. Add Required Data |

Figure 2: Required Steps in the Projections Suite Database Setup Tool

4. Select step **3. Add Required Data** and the tables will be added to the database. If the table creation is successful, the following message will be displayed in the **Progress Information** dialog box:

| Progress I | nformati | ion         |  |      |   |
|------------|----------|-------------|--|------|---|
| Overall Pr | ogress:  |             |  |      |   |
| File Pr    | ogress:  |             |  |      |   |
|            | Ready    | Time        | Process Status Description                         | Info | * |
|            | -        | 7:56:23:044 | Required data added.                               |      |   |
|            | 1        | 7:56:21:601 | Running script 0034AddSeparationTables.sql.        |      |   |
|            | -        | 7:56:21:600 | Skipped 0033UpdateSOCTitles.sql, already ran.      |      | E |
|            | 1        | 7:56:21:599 | Skipped 0032Insert2010ETARollups.sql, already ran. |      |   |

Figure 3: Progress Information output dialog

#### Second Method to Add Separations Tables

The Projections Suite application can be used to add the tables, if you have sufficient rights to create tables in the database. To accomplish this:

1. Navigate to the **Occupational Utilities** group menu in Occupational Projections.

2. Select Add Separations Tables.

#### **Projections Suite**

| Occupational Utilities     |   |
|----------------------------|---|
| Notebook                   | 1 |
| Export Notebook            | I |
| Backup Database            | I |
| View System Log            | I |
| Check For Updates          | I |
| Update Database            |   |
| Add Separations Tables 🛛 🔸 |   |

Figure 4: Add Separations Tables menu selection

3. Click the **Create Separations Table** button to create the tables. If this method was successful, a **Create** dialog box will be displayed.

4. Click OK.

#### Third Method to Add Separations Tables

If preferred, the Utah Projections Help Desk can send a SQL script file to run directly in SQL Server Management Studio. Again, administrative rights are required to complete this operation.

Contact bdjudd@utah.gov for more information.

## **Report Manager**

**Report Manager Introduction** 



Report Manager is an application that uses output files transferred from Projection Suite applications (STIP, LTIP, and OP) or files imported from external sources (LEWIS) to generate projections-related analyses and reports. Within Report Manager, you can create descriptors (e.g., high-growth industries and low-growth industries), indexes (e.g., hot jobs based on occupational projections and occupational wages), or skills-based employment projections (e.g., green and non-green skill employment demand).

The Report Manager documentation contains the following sections:

- Getting Started with Report Manager
- Connect to Report Manager through Projections Suite
- Browse Data
- Import Wages
- Generate Reports
- <u>Transfer Data from Projection Suite to Report Manager</u>

## **Getting Started with Report Manager**

**Report Manager** enables you to quickly generate reports, including O\*NET-based reports, using data from the Projections Suite, and the Local Employment and Wage Information System (LEWIS). This guide is designed to help get you started with Report Manager. For more information about transferring data into Report Manager from Projections Suite, please see the <u>Transferring Data from Projections Suite to Report Manager</u> section of this guide.

The Report Manager is divided into three main areas: **Reports**, **Browse Data**, and **Import Wages**. This guide will cover each of these sections.

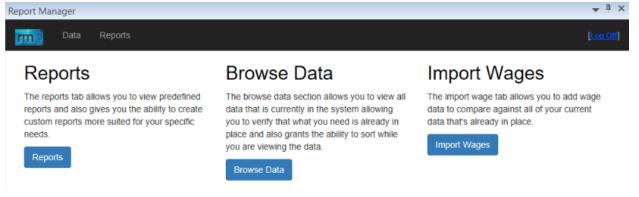


Figure 1: Report Manager's main menu

While the Report Manager menu is organized based on how frequently you will use items, this guide follows a sequence through the system designed to increase your overall familiarity with the functionality.

#### **Accessing Report Manager**

Report Manager can be accessed from within the Projections Suite by clicking on the Report Manager tab. You can also access Report Manager via an Internet browser (e.g., Internet Explorer, Chrome, etc.) by navigating to <a href="https://reportmanager.projectionscentral.com">https://reportmanager.projectionscentral.com</a>

#### **Login Credentials**

The Report Manager uses the same login credentials you use on the Projections Support web site. You may want to confirm that you have an account and remember your password by navigating to <u>https://support.projectionscentral.com</u> and logging into the system.

#### **Projections Suite**

- If you do not have a Projections Support/Forum account, you can set one up at: <a href="https://support.projectionscentral.com/Register">https://support.projectionscentral.com/Register</a>
- If you forgot your Projections Support account credentials, follow this link: <u>https://support.projectionscentral.com/Password/Forgot</u>

Please note, once you have logged in, the system will log you out after some time of inactivity.

## **Connect to Report Manager through Projections Suite**

Report Manager is a web-based application, but it can also be ported into the Projections Suite application. It is helpful to be logged into the application via Projections Suite when <u>exporting Occupational Projections</u>.

#### Login to Report Manager through Projections Suite

1. Click on the Report Manager tab at the top of the window.



Figure 1: Click on the Report Manager tab

2. Click the **Edit Settings** button. The Report Manager Account setup screen will be displayed:

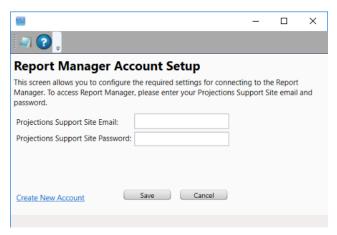


Figure 2: Report Manager Account setup screen

- 3. Enter your **Projections Support Site Email** address.
- 4. Enter your Projections Support Site Password.

FIF you need to sign up for a Projections account, click "Create New Account" on the Account Setup screen, or click <u>here</u>.

5. Click Save.

6. The **Finished** dialog box will be displayed. Click **OK**. You will be logged into Report Manager through the Projections application:

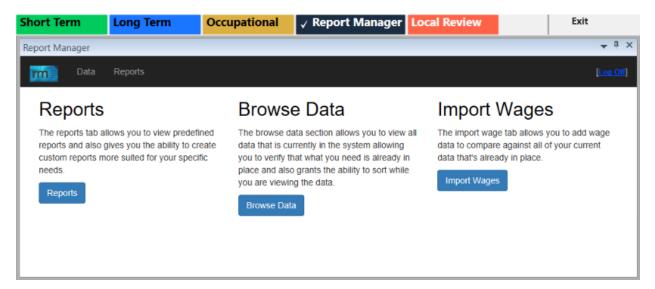


Figure 3: Logged into Report Manager through the Projections application

#### **Trouble Logging In**

If a login attempt fails, the following message will be displayed:

Email / Password combination failed. It's possible your account has not yet been approved. Please check to make sure you entered eveything correctly. If you have any questions, you can contact Mike Sylvester at msylves@utah.gov

Figure 4: Connection failure dialog

If repeated login attempts fail, contact the Projections Help Desk.

If you have forgotten your login credentials, click here.

## **Browse Data**

The Browse Data section allows you to view the data series transferred to Report Manager from the Projections Suite or imported from a LEWIS file. The data in this section are organized into four categories:

- **Occupation Projections** Data transferred from the Occupational Projections section of the Projections Suite.
- Industry Projections Data transferred from both the Long Term Industry Projections (LTIP) and Short Term Industry Projections (STIP) sections of the Projections Suite.
- Wages Data imported from a LEWIS file.
- Unmatched Projections Occupation-based data that has been transferred from the Projections Suite, but does not match an O\*NET SOC code. Consequently, this data will be ignored when producing any O\*NET-based report.

#### View the Individual Records in a Data Series

1. Select the **Browse** menu option or the **Browse Data** button. This will launch a window displaying the underlying records:

| Report Manager   |                        |                    |            |       |           |
|--|------------------------|--------------------|------------|-------|-----------|
| Data Reports   |                        |                    |            |       | [Log Off] |
| Home Browse Import Wages   |                        |                    |            |       |           |
| Category   | Geography              | Geography Type     | Time Frame | Count |           |
| All Data Series     Bocupation Projections     Docupation Projections     Docupation Projections     Docupations     Docupations     Docupations | Please select an optio | n from categories. |            |       |           |

Figure 1: Browse Data screen

2. To view data, expand one of the categories on the left of the screen (by clicking on a plus **[+]** symbol) and select a data series.

#### **Projections Suite**

| Category                    |  |  |  |  |  |
|-----------------------------|--|--|--|--|--|
| ⊢ All Data Series           |  |  |  |  |  |
| - Occupation Projections    |  |  |  |  |  |
| Base Year Employment        |  |  |  |  |  |
| - Projected Year Employment |  |  |  |  |  |
| - Growth Openings           |  |  |  |  |  |
| Replacements                |  |  |  |  |  |
| - Exits                     |  |  |  |  |  |
| Transfers                   |  |  |  |  |  |
| - Change                    |  |  |  |  |  |
| - Industry Projections      |  |  |  |  |  |
| Base Year Employment        |  |  |  |  |  |
| Projected Year Employment   |  |  |  |  |  |
| 🕂 Wages                     |  |  |  |  |  |
| - Median Annual Wage        |  |  |  |  |  |
| - Unmatched Projections     |  |  |  |  |  |
| Base Year Employment        |  |  |  |  |  |
| Projected Year Employment   |  |  |  |  |  |
| Growth Openings             |  |  |  |  |  |
| Replacements                |  |  |  |  |  |

Figure 2: Browse Data Categories expanded

3. Upon selecting a data series, a summary of the data available will appear in a window to the right.

| Category<br>All Data Series   | Geography       | Geography Type   | Time<br>Frame | Count |        |
|---|-----------------|------------------|---------------|-------|--------|
| <ul> <li>Occupation Projections</li> <li>Base Year Employment</li> <li>Projected Year Employment</li> </ul> | CACHE COUNTY    | County           | 2014-2024     | 621   | Browse |
| - Growth Openings<br>- Replacements<br>- Exits  | Central         | Balance of State | 2014-2024     | 533   | Browse |
| <ul> <li>Transfers</li> <li>Change</li> <li>Industry Projections</li> </ul>                                 | East            | Balance of State | 2014-2024     | 590   | Browse |
| <ul> <li>Base Year Employment</li> <li>Projected Year Employment</li> <li>Wages</li> </ul>                  | Freedonia       | Statewide        | 2014-2024     | 505   | Browse |
| Median Annual Wage     Unmatched Projections     Base Year Employment                                       | Freedonia       | Statewide        | 2017-2019     | 534   | Browse |
| Projected Year Employment<br>Growth Openings  | OgdenClearfield | MSA              | 2014-2024     | 735   | Browse |
| i- Replacements   | ProvoOrem       | MSA              | 2014-2024     | 730   | Browse |
|   | Salt Lake MSA   | MSA              | 2014-2024     | 772   | Browse |

Figure 3: Base Year Employment data series selected, summary of data displayed

4. Click on the data series' associated **Browse** button to view the data series:

| ACHE COUNTY                                  | County   | 2014-2024               | 584 Bro       | wse     |
|--|--|-------------------------|---------------|---------|
| (2014-2024)                                  |  |                         |               |         |
| Occupation Title                             | cupation Title   Occupation Code  Industry Tit |                         | Industry Code | Value • |
| Chief Executives                             | 11-1011  | Total All<br>Industries | 000000        | 154     |
| General and Operations Managers              | 11-1021  | Total All<br>Industries | 000000        | 1,069   |
| Legislators                                  | 11-1031  | Total All<br>Industries | 000000        | 30      |
| Advertising and Promotions Managers          | 11-2011  | Total All<br>Industries | 000000        | 2       |
| Marketing Managers                           | 11-2021  | Total All<br>Industries | 000000        | 26      |
| Sales Managers                               | 11-2022  | Total All<br>Industries | 000000        | 77      |
| Public Relations and Fundraising<br>Managers | 11-2031  | Total All<br>Industries | 000000        | 3       |

Figure 4: Clicking the Browse button will open the data series

When viewing the individual records, you can sort the data by the title, code, or data series value.

#### Sort Data

Report Manager utilizes the sorting features throughout the system. When a column is sorted, the system presents the - icon when it is sorted in ascending order and the icon when it is sorted in descending order.

When a column is sortable (but not sorted), the system displays the  $\overline{\phantom{aaa}}$  icon. Clicking

on the  $\checkmark$  icon once will sort the column in ascending order. Clicking on the  $\checkmark$  icon will sort the column in descending order. Clicking on the  $\checkmark$  icon will change the sort back to ascending order. You can only sort by one column at a time.

## **Import Wages**

Importing wages into Report Manager is not required, but it does enhance the reporting options available in the system.

#### Create the Import File from LEWIS

To import wages, you will need to access the LEWIS system or coordinate with the LEWIS user in your state. Then, follow the steps below:

#### 1. Be sure you have transferred occupation projections into Report Manager before importing wages.

2. In the LEWIS system, select the estimate type you would like to export (e.g., State of Ohio), right click, and select "Select for Export."

3. In the export options, select "LEWIS (EDS) wage table" and then choose the file format option of a pipe delimited text file (Report Manager only accepts pipe delimited | text files).

4. Export the file and locate it in the "edspub" folder.

#### Import LEWIS Files into Report Manager

Once you have the file from LEWIS, follow these steps to import your data into Report Manager:

- 1. Within Report Manager select the **Import Wages** button from the top menu.
- 2. Click Browse. Choose the saved LEWIS file when prompted.

3. Choose the time frames (from the Occupational Projections you transferred) that you want associated with these wages. Only the time frames from the occupation projections you transferred into Report Manager are shown.

| Import Wages from a LEWIS File   | Help |
|--|------|
|  |      |
| Please select the LEWIS wage file you would like to import:  |      |
| Browse   |      |
| Please indicate which occupational projections timeframe(s) should be associated with these wages.     |      |
| 2014-2016  |      |
| □2014-2024   |      |
| 2015-2017  |      |
| 2017-2019  |      |
|  |      |
| Continue >>  |      |
| You must first transfer occupational projections from the Projections Suite before importing<br>wages. |      |
|  |      |
|  | _    |

Figure 1: File and time frame selection

4. Click Continue>>.

5. Since the Projections Suite and LEWIS may use different area codes and area type codes for a geographic area, it is necessary to match Projections Suite codes with those of the LEWIS file you are importing. To match codes, select the corresponding area from the drop-down on the right. If you do not want to import a particular area from the LEWIS file, select "<< Ignore >>". Report Manager will remember these matches for future imports.

6. Click **Submit** to import the wage file. If successful, you will be told how many records were imported. If unsuccessful, please contact the Utah staff.

Click the **Help** button in the top right corner of the screen to access information on preparing the extract file from LEWIS for importation.

## **Generate Reports**

The core functionality of the Report Manager is to generate reports. To access this function, click on the **Reports** link on the top menu. The Reports Dashboard will be displayed:

| leport Mana | ager     |         |        |                 |                    |            |      |      |                                | <b>↓</b> <sup>Ⅱ</sup> × |
|-------------|----------|---------|--------|-----------------|--------------------|------------|------|------|--------------------------------|-------------------------|
| m           | Data     | Reports |        |                 |                    |            |      |      |                                |                         |
| Pivot Tab   | ble      | 2       |        |                 |                    |            |      |      |                                |                         |
| Ð           | ß        | 1       | ø      | Select a report | ~                  | <b>D</b> i | •    |      | D                              | ×                       |
| New         | Edit     | Rename  | Revert |                 |                    | Excel      | Text | Save | Save As                        | Delete                  |
| Report D    | escripti | on      |        |                 | Created<br>Created |            |      |      | Last Modified<br>Last Modified |                         |
|             |          |         |        |                 |                    |            |      |      |                                |                         |

Figure 1: Reports Dashboard

#### **Predefined Reports**

Report Manager has pre-loaded several reports for you, referred to as "Predefined" Reports. These reports are contained in the drop-down labeled "**Select a report...**" You can create and save your own predefined reports, and they will be found in this drop-down list as well.

| ivot Tab | Data                   | Reports     |                    |   |          |           |           |                          | Erm         |
|----------|------------------------|-------------|--------------------|---|----------|-----------|-----------|--------------------------|-------------|
| D<br>New | 12<br>Edit             | /<br>Rename | <b>S</b><br>Revert | Select a report<br>Skills-Based Projections<br>Education-Based Projections  | e<br>cel | n<br>Text | E<br>Save | D<br>Save As             | ×<br>Delete |
| eport De | New Edit Rename Revert |             |                    | Industry Change<br>O*NET Knowledge & Skills<br>Job Knowledge Currency Caic<br>Knowledge Area Needs<br>Knowledge Area Needs By Occupation<br>ONet by Education and Wages |          |           |           | Last Modif<br>Last Modif |             |

Figure 2: Select a Report drop-down menu

When you select a report, the system will automatically generate that report based on your data. You can sort the columns of this report by clicking on the arrows of a particular column. See the **Sorting Data** sub-section of the <u>Browse Data</u> section for more information on sorting.

#### **Export Reports**

You also have the option of exporting an Excel (.xlsx) or text (.txt) formatted report. To do so:

1. Click on the **Excel** or **Text** button:



Figure 3: Excel or Text format export options

2. A window will appear to prompt you to name the file. After entering the name, click **Save** to finish the export.

| Export Report to Excel | x |
|------------------------|---|
| Name:<br>Report Name   | × |
| Save Cancel            |   |

Figure 4: Export Report dialog box

#### **Saving Reports**

You cannot save a predefined report, but you can save a copy by clicking on the **Save As** button. This creates a copy you can further customize.



Figure 5: Save As button

You can also customize reports by clicking on the **Edit** button. Clicking the **Edit** button will open the **Edit Report** menu options (see Figure 6). Once you have customized a report by changing the default settings, you can **Save** that report (using the existing name) or use **Save As** to give the report a different name.

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#### **Edit Reports**

To change the columns, rows or data series selected, or to filter particular data or apply suppression, click on the **Edit** button in the top navigation bar.

|                                       | New       | 83<br>Edit | Ren                                      | ame         | 8<br>Revert               |              |           |
|---------------------------------------|-----------|------------|--|-------------|---------------------------|--------------|-----------|
| Select Row Grouping (at least one)    |           | t          | 3. Selec                                 | ct Data Ser | ries (At least one)       |              |           |
| Y ONET Skills                         | Options 🗸 |            | ø  | Occupation  | Base Year Employment      |              | Options   |
| T Education                           | Options + |            | ø  | Occupation  | Projected Year Employment |              | Options   |
|                                       |           |            | ø  | Occupation  | Growth Openings           |              | Options   |
| Add Row Grouping                      |           |            | ø  | Occupation  | Replacements              |              | Options   |
|                                       |           |            | ø  | Projected C | occ Emp Difference        |              | Options   |
| Select Column Grouping (at least one) |           |            | ,9 <b>5</b>                              | Median Ann  | nual Wage                 |              | Options   |
|                                       |           |            |  |             | Data Series Disp          | lay Position | -         |
| T Geography                           | Options + |            | Add Data Series Below Column Groupings ~ |             | ngs 🗸 🗸                   | Example      |           |
| Timeframe                             | Options + |            |  |             |                           |              | Linengrie |
| Add Column Grouping                   | Options + |            |  |             |                           |              |           |

Figure 6: Open Edit Report menu options

To add or change the rows or columns of a report, click on the **Add Row Grouping** or **Add Column Grouping** buttons. You can have a maximum of two row or column groupings.

| Ŧ | ONET Skills      | Options - |
|---|------------------|-----------|
| ۳ | Education        | Options • |
|   | add Row Grouping |           |
|   |                  | Options   |

Figure 7: Add Row Grouping, Add Column Grouping

If you are already using two groupings and want to change the groupings, you must first select the **Options** drop-down and select **Delete** to remove the unwanted grouping.

| Occupation | Opt       |
|------------|-----------|
| Education  | Delete    |
|            | Move down |

Figure 8: Delete unwanted grouping

To filter data, click on the **Filter** button to the left of either a column or row grouping. To remove a filter, click on a selected item.

|            | Filter By   | x  |
|------------|---|----|
| <b>T</b> — | ONET Skills  Reading Comprehension  Active Listening  Writing  Speaking  Mathematics  Science  Critical Thinking  Active Learning  Learning Strategies  Monitoring  Social Perceptiveness  Coordination  Persuesion | <  |
|            | Save Cano   | el |

Figure 9: Open Filter By options

If you would like to reorder the data series or the row or column groupings, click on the **Options** button and select **Move Up** or **Move Down**.

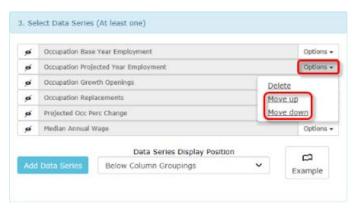


Figure 10: Move down or Move up

To see how the reports are structured, click the **Example** button which will show you a sample layout of the report.

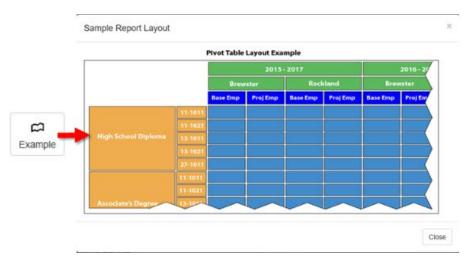


Figure 11: Example report layout

#### **Data Suppression**

If you would like to mask values that fall under a certain threshold, click the **suppression button** located to the left of each of the selected data series. Enter the threshold you want to use as the basis for suppression.

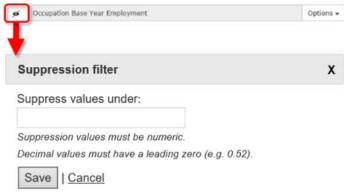


Figure 12: Open Suppression filter

When a suppression value is selected, the suppression icon will be darkened, indicating the value is suppressed:

Options -



Figure 13: Value suppressed

Any value less than that threshold will not be displayed. To remove this suppression, click the **Remove Suppression** button. You can have different levels of suppression for different data series.

|          | Supp   | ression filter       |               | x                  |
|----------|--------|----------------------|---------------|--------------------|
|          | Suppr  | ress values under    | r             |                    |
| 1        | 50     |                      | ×             |                    |
| <b>@</b> | Suppre | assion values must l | be numeric.   |                    |
|          | Decim  | al values must have  | a leading zer | ro (e.g. 0.52).    |
|          | Sav    | e   Cancel           |               | Remove Suppression |

Figure 14: Remove Suppression

#### **Reordering the Data Series in Reports**

By default, the data series is the inner-most column grouping. In some situations, you may want the data series grouped at a different level. To change this grouping, select the desired option in the **Position** drop-down located at the bottom of the **Select Data Series** section.

| Add | Data Series                          | Data Series Display Position Below Column Groupings Top of Column Groupings | Example   |  |
|-----|--------------------------------------|---|-----------|--|
| ø   | Median Annual 1                      |   | Options • |  |
| ø   | Projected Occ Perc Change            |   |           |  |
| ø   | Occupation Replacements              |   |           |  |
| ø   | Occupation Growth Openings           |   |           |  |
| ø   | Occupation Projected Year Employment |   |           |  |
| ø   | Occupation Base                      | e Year Employment   | Options • |  |

Figure 15: Data Series Display Position

#### **New Reports**

If you would like to start a new report from scratch, click the **New** button.

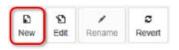


Figure 16: New button

**Projections Suite** 

This clears all values and lets you select the elements you would like. You can save these selections by clicking **Save** and naming the report.

#### **Reverting Changes**

If you would like to revert your changes to the last saved values, click the **Revert** button. Please note, any changes you have made to the last saved values will be lost.

| Ð   | 8    | 1      | 8      |  |  |
|-----|------|--------|--------|--|--|
| New | Edit | Rename | Revert |  |  |

Figure 17: Revert button

# Transfer Data from Projections Suite to Report Manager

You will need to transfer projections data from Projections Suite before creating reports with projections data. Both industry and occupational projections can be transferred.

#### **Transfer Occupational Projections**

1. Open Projections Suite and navigate to the **Occupational** menu and select the **Output** group menu (you can also hit F9).

#### 2. Select Export Occupational Projections.

3. On the screen that appears, select the geographic area and projections time frame you would like to transfer into Report Manager. If you would like to select all the areas, select the "All" area at the top of the list.

| Short Term  | Long Term | ✓ Occupatio                          | nal Report Manager   | Local Review | Exit         |
|---|-----------|--------------------------------------|--|--------------|--------------|
| Occupational Outp   |           | xport Occupational P                 | rojections For Report Manage                                     | ۲C)          | <b>↓</b> 1 × |
| Diagnostic Exports<br>WID Extract Version                         | 2.4       |                                      | u to transfer occupation proje<br>on above after selecting the d |              |              |
| WID Extract Version<br>WID Extract Version<br>WID Extract Version | 2.6       | Source Area(s):<br>Source Timeframe: | All<br>2017 -> 2019  | •<br>•       |              |
| Export Occupationa  |           |                                      |  |              |              |
| <b>Op</b>   | CTS       |                                      |  |              |              |

Figure 1: Exporting Occupational Projections into Report Manager

4. When you have made your selection, click the **Export** button on the toolbar above (the button will have a red arrow).

5. A notification window will pop up when the transfer has successfully completed. Please contact the Utah staff if you do not receive a success message.

6. Repeat this process for as many areas/time frames as you would like to use within the Report Manager.

#### **Transfer Industry Projections**

1. Open the Projections Suite and navigate to the **Short Term** or **Long Term** menu. Select the **Output** submenu (you can also hit F9).

#### 2. Select Export Industry Projections.

3. On the screen that appears, select the geographic area and projections time frame you would like to transfer into Report Manager.

4. Select the **Source Area(s)** you would like to transfer to Report Manager. If you would like to select all the areas, select the "All" areas at the top of the list.

5. Click the Transfer Data to Report Manager radio button.

6. When you have made your selection, click the **Export** button on the Active Module Toolbar above (the button will have a red arrow).

7. A notification window will pop up when the transfer has successfully completed. Please contact the Utah staff if you do not receive a success message.

8. Repeat this process for as many areas as you would like to use within the Report Manager.

#### Access Data Exported to Report Manager

To access your exported data, reference the **Browse Data** section.

## **Local Review**

#### **Local Review Introduction**



Local Review is used by state industry Projections analysts to obtain information about economic activity from local area experts, and recommend modifications to projected industry employment. Access Local Review in your preferred browser.

To access Local Review as a state analyst administrator, you will need to have an account set up. Contact Mike Sylvester (msylves@utah.gov) with the Utah Projections Help Desk for assistance.

State analysts with administrator rights will have menu items and screens available to them that reviewers will not see. Reviewers will only see the detail and summary views.

## **Local Review Menu**

### Local Review

| Home      |
|-----------|
| Data      |
| Reviewers |
| Review 🗸  |

Figure 1: Local Review Home menu

#### Home

Clicking the **Home** menu selection from anywhere in the Local Review application will take you back to the Home page. The Home page contains the following information about the menu selections:

#### Data

The Data menu item is used by state analysts to add and delete industry employment series and projections data for review by local experts. To ensure correct data formatting, obtain data from the Projection Suite output options: <u>Export Industry</u> <u>Projections</u> / <u>Export to Data File - Local Review Format</u>.

#### Reviewers

The Reviewers menu item is used by state analysts to add and delete local area reviewers of projections. Only analysts and administrators can add new reviewers, and reviewers will not be able to login until the state administrator adds them as a reviewer. Before reviewers are able to login and evaluate projections, the state analyst with administrator rights should do the following steps:

- Step 1 Import Projections data.
- Step 2 Add a new Reviewer.
- Step 3 Notify the Reviewer to sign up on the site.
- Step 4 After the Reviewer signs up, assign areas to the Reviewer.
- **Step 5** Reviewer can log in to review data.

#### **Projections Suite**

#### Review

The Review menu item allows state analysts to:

- View a Summary of all industry projections in an area with statistics.
- Review graphical detailed industry projection modifications by Reviewers.
- Display a Reviewer Summary to select detail by Reviewer.

#### **Edit Profile**

To edit your user profile, click the **Edit Profile** link in the top right corner of the screen. This allows you to modify your first name, last name, email address, phone number, and include user notes.

#### Edit Profile

Use the form below to edit profile.

| Profile         |   |
|-----------------|---|
| First Name      | 1 |
| Last Name       |   |
| Email Address   |   |
| Phone           |   |
| Notes           | ] |
|                 |   |
| Change Password |   |
| Save Cancel     |   |

Figure 2: Edit Profile screen

After updating your information, click the **Save** button to save the changes. Click the **Cancel** button to discard any changes.

To change your password, click the **Change Password** link below the notes field. A Change Password window will be displayed.

| Change Password 🗙  |
|--|
| Use the form below to change your password.<br>Account Information |
| Current Password   |
| I<br>New Password  |
| (Minimum & characters in-length)<br>Confirm Password               |
| Password Hint  |
| Save   |
|  |

Figure 3: Change Password window

Update your account information and click the **Save** button. Click the **X** in the top right corner to cancel the change password process.

**Projections Suite** 

## **Local Review Data**

The **Data** menu item contains a list of all available projections, by area and time frame.

|           | Delete<br>Delete |
|-----------|------------------|
| 2016-2026 | Delete           |
|           |                  |
|           |                  |
|           |                  |

Figure 1: Manage Data section of the Data menu

To add data to the repository, click the **Add** button. An **Add Data** window will be displayed:

| Add Data      |                | × |
|---------------|----------------|---|
| File to uploa | d              |   |
| Choose File   | No file chosen |   |
| Next Canc     | el             |   |

Figure 2: Add Data window

Click the **Choose File** button and select a file for upload. Click the **Next** button to proceed with the upload. Click the **Cancel** button to cancel the upload.

To delete data from the Manage Data screen, click the **Delete** button next to the data set.

#### **View Projections**

By selecting one of the available sets of projections from the list, you will be taken to the **Summary** screen.

| Code                 | Industry Title                  | Des | Base<br>Value | Analyst<br>Forecast | Reviewer<br>Min | Reviewer<br>Max | Reviewer<br>Median | Reviewer<br>Average | Modified<br>Forecast |
|----------------------|---------------------------------|-----|---------------|---------------------|-----------------|-----------------|--------------------|---------------------|----------------------|
| 00006 Self Employe   | ed Workers, All Jobs            |     | 271,738       | 272,233             |                 |                 |                    |                     |                      |
| 11000 Agriculture, I | Forestry, Fishing and Hunting   |     | 74,088        | 72,787              |                 |                 |                    |                     |                      |
| 23600 Construction   | of Buildings                    |     | 43,976        | 46,000              |                 |                 |                    |                     |                      |
| 23700 Heavy and C    | ivil Engineering Construction   |     | 28,558        | 30,000              |                 |                 |                    |                     |                      |
| 23800 Specialty Tra  | ide Contractors                 |     | 145,740       | 160,000             |                 |                 |                    |                     |                      |
| 31100 Food Manufa    | cturing                         |     | 80,620        | 83,774              |                 |                 |                    |                     |                      |
| 31200 Beverage an    | d Tobacco Product Manufacturing |     | 7,390         | 7,679               |                 |                 |                    |                     |                      |
| 31300 Textile Mills  |                                 |     | 1,050         | 1,032               |                 |                 |                    |                     |                      |
| 31400 Textile Produ  | ict Mills                       |     | 3,033         | 2,980               |                 | 1               |                    |                     |                      |
| 31500 Apparel Man    | ufacturing                      |     | 3,339         | 3,280               |                 |                 |                    |                     |                      |
| 31600 Leather and    | Allied Product Manufacturing    |     | 1,141         | 1,186               |                 |                 |                    |                     |                      |
| 32100 Wood Produc    | t Manufacturing                 |     | 6,305         | 6,194               |                 |                 |                    |                     |                      |
| 32200 Paper Manuf    | acturing                        |     | 19,082        | 18,747              |                 |                 |                    |                     |                      |
| 32300 Printing and   | Related Support Activities      |     | 27,045        | 26,570              |                 |                 |                    |                     |                      |
| 32400 Petroleum ar   | nd Coal Products Manufacturing  |     | 5,622         | 5,645               |                 |                 |                    |                     |                      |
| 32500 Chemical Ma    | nufacturing                     |     | 46,241        | 45,429              |                 |                 |                    |                     |                      |
| 32600 Plastics and   | Rubber Products Manufacturing   |     | 41,864        | 43,502              |                 |                 |                    |                     |                      |
| 32700 Nonmetallic    | Mineral Product Manufacturing   |     | 14,131        | 14,684              |                 |                 |                    |                     |                      |
| 33100 Primary Meta   | al Manufacturing                |     | 18,030        | 18,735              |                 |                 |                    |                     |                      |
| 33200 Fabricated M   | etal Product Manufacturing      |     | 89,574        | 88,001              |                 |                 |                    |                     |                      |

Figure 3: Summary screen

Click the arrow buttons or use the drop-down menu to review the listed projections. To view the associated projections, click on its associated NAICS code or Industry Title. Clicking on one of the links will take you to its Details screen.



Figure 4: Details screen

#### **Projections Suite**

The data grid on the left of the Details screen displays the Year/Quarter, the employment value, and the growth percentage. You can change the graph to view the data by employment level or by percent growth.

### **Local Review - Reviewers**

The **Reviewers** option displays a list of available Reviewers. It also enables the adding and deletion of Reviewers.

| Manage Reviewers<br>Reviewers Available | _      |
|---|--------|
| Name 🔶                                  | Add    |
| NewReviewer, Test                       | Delete |
| Reviewer, New                           | Delete |
| Test, Bob                               | Delete |
| Test, John                              | Delete |
|   |        |
|   | 10 🔻   |

Figure 1: Manage Reviewers screen

Clicking on a Reviewer's name navigates to the Reviewer Details screen where the Reviewer's contact information and profile details will be displayed.

| New  |       |        |   |   |
|--|-------|--------|---|---|
| Last Name  |       |        |   |   |
| Reviewer   |       |        |   |   |
| Email  |       |        |   |   |
| rev@gmail.com  |       |        |   |   |
| Phone  |       |        |   |   |
| (222) 222-2222   |       |        |   |   |
| Reviewer Details   |       |        |   |   |
| test   |       |        | /   |   |
| Analyst Comments   |       |        |   | 1 |
|  |       |        | /   | ; |
| Available  |       |        | Assigned  |   |
| Statewide (1)<br>Statewide-nc (1)<br>WIA 1 (15)<br>WIA 10 (15) | *<br> | →<br>+ | Illinois (01)<br>Illinois - Test (01)<br>Statewide (01) |   |

Figure 2: Reviewer Details screen

#### **Projections Suite**

Use the left and right arrows to move **Available** areas to the **Assigned** areas category.

Click **Save** to save changes to the Reviewer record. Click **Cancel** to return to the Manage Reviewers screen.

### **Local Review - Review**

The **Review** section has three options, accessed by hovering your mouse over the Review category.

| Review 🔻         |  |
|------------------|--|
| Summary          |  |
| Reviewer Summary |  |
| Details          |  |
|                  |  |

Figure 1: Review menu selections

#### Summary

Clicking on the summary option will take you to the Summary screen. Select an **Area** from the drop-down menu to view its associated data.

| Code  | Industry Title                             | Desc | Base<br>Value | Analyst<br>Forecast | Reviewer<br>Min | Reviewer<br>Max | Reviewer<br>Median | Reviewer<br>Average | Modified<br>Forecast |
|-------|--|------|---------------|---------------------|-----------------|-----------------|--------------------|---------------------|----------------------|
| 00006 | Self Employed Workers, All Jobs            |      | 271,738       | 272,233             |                 |                 |                    |                     |                      |
| 1000  | Agriculture, Forestry, Fishing and Hunting |      | 74,088        | 72,787              |                 |                 |                    |                     |                      |
| 23600 | Construction of Buildings                  |      | 43,976        | 46,002              | 46,001          | 46,001          | 46,001             | 46,001              | 46,001               |
| 23700 | Heavy and Civil Engineering Construction   |      | 28,558        | 30,002              | 30,001          | 30,001          | 30,001             | 30,001              | 30,001               |
| 3800  | Specialty Trade Contractors                |      | 145,740       | 160,002             |                 |                 |                    |                     |                      |
| 81100 | Food Manufacturing                         |      | 80,620        | 83,774              |                 |                 |                    |                     |                      |
| 31200 | Beverage and Tobacco Product Manufacturing |      | 7,390         | 7,679               |                 |                 |                    |                     |                      |
| 31300 | Textile Mills                              |      | 1,050         | 1,032               |                 |                 |                    |                     |                      |
| 1400  | Textile Product Mills                      |      | 3,033         | 2,980               |                 |                 |                    |                     |                      |
| 31500 | Apparel Manufacturing                      |      | 3,339         | 3,280               |                 |                 |                    |                     |                      |
| 1600  | Leather and Allied Product Manufacturing   |      | 1,141         | 1,186               |                 |                 |                    |                     |                      |
| 32100 | Wood Product Manufacturing                 |      | 6,305         | 6,194               |                 |                 |                    |                     |                      |
| 2200  | Paper Manufacturing                        |      | 19,082        | 18,747              |                 |                 |                    |                     |                      |
| 32300 | Printing and Related Support Activities    |      | 27,045        | 26,570              |                 |                 |                    |                     |                      |
| 2400  | Petroleum and Coal Products Manufacturing  |      | 5,622         | 5,645               |                 |                 |                    |                     |                      |
| 2500  | Chemical Manufacturing                     |      | 46,241        | 45,429              |                 |                 |                    |                     |                      |
| 2600  | Plastics and Rubber Products Manufacturing |      | 41,864        | 43,502              |                 |                 |                    |                     |                      |
| 2700  | Nonmetallic Mineral Product Manufacturing  |      | 14,131        | 14,684              |                 |                 |                    |                     |                      |
| 3100  | Primary Metal Manufacturing                |      | 18,030        | 18,735              |                 |                 |                    |                     |                      |
| 3200  | Fabricated Metal Product Manufacturing     |      | 89,574        | 88,001              |                 |                 |                    |                     |                      |
|       |  | Page | 1 of 6        | ₽> ₽1 10            | V               |                 |                    |                     |                      |

Figure 2: Summary screen - Area selected

The table columns include:

Code - NAICS Code

**Projections Suite** 

- Industry Title
- Desc
- Base Value
- Analyst Forecast
- Reviewer Min
- Reviewer Max
- Reviewer Median
- Reviewer Average
- Modified Forecast

Use the arrow buttons at the bottom of the table to scroll forward and backward through the data. Press the **Export** button to download an Excel spreadsheet of the data to your PC.

#### **Reviewer Summary**

The Reviewer Summary option enables the viewing of projections by the Reviewer's name. Select a **Reviewer** from the drop-down menu to display data they have reviewed.

| Area                  | Industry | Industry   | Base  | Analyst  | Local    | Modified |
|-----------------------|----------|--|-------|----------|----------|----------|
| Area<br>(Timeframe) 🕈 | Code     | Title  | Value | Forecast | Revision | Forecast |
| llinois (2016-2018)   | 443000   | Electronics and Appliance Stores                       |       | 24,068   | 25,631   |          |
| llinois (2016-2018)   | 561300   | Employment Services                                    |       | 205,331  | 209,114  |          |
| llinois (2016-2018)   | 541900   | Other Professional, Scientific, and Technical Services |       | 31,423   | 33,640   |          |
| llinois (2016-2018)   | 999200   | State Government, Excluding Education and Hospitals    |       | 60,150   | 62,452   |          |
| llinois (2016-2018)   | 236000   | Construction of Buildings                              |       | 41,480   | 43,002   | 43,001   |
| llinois (2016-2018)   | 541100   | Legal Services   |       | 53,759   | 53,340   |          |
| llinois (2016-2018)   | 999900   | Unclassified Payroll Employment                        |       | 6,082    | 11,094   |          |
| llinois (2016-2018)   | 532000   | Rental and Leasing Services                            |       | 23,357   | 24,222   |          |
| llinois (2016-2018)   | 313000   | Textile Mills  |       | 1,036    | 1,062    |          |
| llinois (2016-2018)   | 442000   | Furniture and Home Furnishings Stores                  |       | 18,032   | 18,367   |          |
| llinois (2016-2018)   | 561500   | Travel Arrangement and Reservation Services            |       | 8,196    | 8,183    |          |
| llinois (2016-2018)   | 453000   | Miscellaneous Store Retailers                          |       | 29,918   | 30,233   |          |
| llinois (2016-2018)   | 611600   | Other Schools and Instruction                          |       | 15,622   | 16,573   |          |
| llinois (2016-2018)   | 334000   | Computer and Electronic Product Manufacturing          |       | 31,278   | 30,399   |          |
| llinois (2016-2018)   | 622000   | Hospitals  |       | 264,703  | 271,554  |          |
| llinois (2016-2018)   | 611500   | Technical and Trade Schools                            |       | 4,166    | 4,142    |          |
| llinois (2016-2018)   | 445000   | Food and Beverage Stores                               |       | 120,036  | 125,338  |          |
| llinois (2016-2018)   | 110067   | Self Employed Workers in Agriculture                   |       | 16,103   | 24,025   |          |
| llinois (2016-2018)   | 621300   | Offices of Other Health Practitioners                  |       | 39,299   | 40,265   |          |

Figure 3: Reviewer Summary screen

#### Details

Navigating to the Details option will display the data in a table, on a graph to view (by both **Level** and **Growth**), and enable the submission and viewing of **Modified Forecasts**.

Select an **Area** and **Industry** from the drop-down menus. To filter by the industries that have been reviewed, click the **Reviewed Only** radio button.



Figure 4: Details screen

To enter a modified forecast, enter a value in the **Modified Forecast** field and click **Submit**. Click **Delete** to remove the Modified Forecast.

### **Local Review Format**

Local Review is designed to review **industry** projections exported from the Projections Suite. Local Review does not enable reviewing of Occupational Projections.

#### **Export Industry Projections**

1. Open the Projections Suite and navigate to the **Short Term** or **Long Term** menu. Select the **Output** group menu (you can also hit F9).

2. Select Export Industry Projections.

| ✓ Short Term          | Long Term   | Occupational                             | Report Manager  | Local Review | Exit               |
|-----------------------|-------------|--|---|--------------|--------------------|
| 364                   | 1 X 2 D     | port Industry Projection                 | is (ST)   |              | <b>↓</b> Ⅱ ×       |
| Short Term Output     |             | 📕 🦪 🕄 🖡                                  | ÷   |              |                    |
| Confidentiality       |             |  | export industry projectio<br>tions, or to transfer them o |              |                    |
| ICT Export            |             |  | ating where you would like                                |              | en ener the expert |
| Export Historical Se  | ries        | Export Data to File -                    | Local Review Format                                       |              |                    |
| Export Variable Seri  | es          | O Export Data to File -                  | Projections Review  |              |                    |
| Reports               |             | <ul> <li>Transfer Data to Rep</li> </ul> | -   |              |                    |
| Validate Data         |             |  |   |              |                    |
| Export Industry Proj  | ections     | Source Area(s):                          | Freedonia   |              | ~                  |
| short-term industry P | Trojections |  |   |              |                    |

Figure 1: Export Industry Projections module

3. On the screen that appears, select the **Source Area(s)** you would like to transfer to Report Manager. If you would like to select all the areas, select the "All" areas at the top of the list.

4. Click the Export Data to File - Local Review Format radio button.

5. When you have made your selection, click the **Export** button on the Active Module Toolbar.

6. A Save As dialog box will display. Name and select a location for the file, then press the **Save** button.

7. A Finished dialog box will display once projections have been exported. Click **OK**.

#### Local Review File Format

The Local Review file format contains the following columns:

- **FIPS** State FIPS code (2 character alphanumeric and may contain a zero on the left).
- Area Area Code (valid codes are 6 digits long and may contain zeros left or right and must correspond to the area code found in <u>Manage Areas</u> - Area Directory).
- AreaName The name of the area.
- AreaType Area Type code (2 digits long and may contain a zero on the left). "01" indicates statewide area type. See Manage Areas for the various types.
- IndustryCode Industry Code (valid codes are 6 digits long and may contain zeros on the right and must be a code found in Manage Industries - <u>Industry</u> <u>Directory</u>).
- IndustryTitle Corresponding NAICS Industry Title.
- Date Year and quarter.
- Value Employment value.

|   | viicioso | IL LACEI - LO | Canceviewing | lustryFi0ject | lions_arre   |                  |         |       |
|---|----------|---------------|--------------|---------------|--------------|------------------|---------|-------|
|   | Α        | В             | С            | D             | E            | F                | G       | Н     |
| 1 | FIPS     | Area          | AreaName     | AreaType      | IndustryCode | IndustryTitle    | Date    | Value |
| 2 | 17       | 000017        | Freedonia    | 01            | 211000       | Oil and Gas Extr | 2013 Q2 | 23605 |
| 3 | 17       | 000017        | Freedonia    | 01            | 211000       | Oil and Gas Extr | 2013 Q3 | 23617 |
| 4 | 17       | 000017        | Freedonia    | 01            | 211000       | Oil and Gas Extr | 2013 Q4 | 23628 |
| 5 | 17       | 000017        | Freedonia    | 01            | 211000       | Oil and Gas Extr | 2014 Q1 | 23640 |
| 6 | 17       | 000017        | Freedonia    | 01            | 211000       | Oil and Gas Extr | 2014 Q2 | 23652 |

Microsoft Excel - LocalReviewIndustryProjections\_STIP

Figure 2: Local Review File Format

#### **Related Content**

Local Review

# **File Formats**

### **File Formats Introduction**

Projections Suite uses a variety of input and output file formats to control how data is imported and exported through Projections Suite. These files can be categorized into two main types: spreadsheet and text. Select a link from the list below to learn more about (and see examples of) individual file formats in Projections. The following list is a comprehensive collection of the Projections input and output files.

To avoid spreadsheet import problems, use the same (or a higher) version of the spreadsheet software used to create the spreadsheet. When this is not possible, find a coworker who has the required version and have them save the spreadsheet into a compatible version.

#### **Spreadsheet File Formats**

- Employment Formats used in Short Term and Long Term Projections
  - o Type 1 Dates as Columns
  - o <u>Type 2 Industries as Columns</u>
  - o Type 3 Industry and Date by Row
- <u>Variable Spreadsheet Format</u> used Short Term and Long Term Projections
- Industry Control Total (ICT) used in Occupational Projections
- Area Format used in all Projections applications
- Validation Section of the ETA File Format and the Geographic Comparison File Format
- <u>Staffing Pattern Spreadsheet Formats</u> Import Staffing Pattern module of Occupational Data
  - o LEWIS FoxPro/Excel
  - o <u>BLS FoxPro</u>
- Local Review Format

Import Spreadsheet (ST and LT) module instructions.

#### **Text File Formats**

- <u>QCEW Data Extract Instructions</u>
- QCEW Output Text Format
- <u>Win202/MSA Text Format</u>

☞ Import Text File (<u>ST</u> and <u>LT</u>) module instructions.

- Variable Directory (<u>ST</u> and <u>LT</u>)
- Review Variables (ST and LT)
- Preview Variables
- Edit ICT
- Manage Areas (<u>ST</u>, <u>LT</u>, and <u>OP</u>)
- Validation
- Short Term Geographic Comparison (<u>ST</u> and <u>OP</u>)
- Import Staffing Pattern

# Employment Spreadsheet Format 1 - Dates as Columns

The spreadsheet format identifies the area and industry per row, with all the date/employment value columns extending to the right. It is a horizontal or wide layout.

The first row in the spreadsheet is reserved for the column headers. Four column headers are required to identify the area and industry, and can be in any order in the header row.

The first row also requires the column header cells that identify the date for each column of employment values. Each of these column header cells must begin with the letter "D" (upper or lower case) followed by the date (e.g., monthly - D199001, D200406; annual - D2008, D2001, etc.). See examples below.

- **fips** State FIPS code (2 character alphanumeric and may contain a zero on the left).
- area Area Code (valid codes are 6 digits long and may contain zeros left or right and must correspond to the area code found in Manage Areas - Area Directory).
- areatype Area Type code (2 digits long and may contain a zero on the left). "01" indicates statewide area type. See <u>Manage Areas</u> for the various types.
- naics Industry Code (valid codes are 6 digits long and may contain zeros on the right and must be a code found in Manage Industries - <u>Industry Directory</u>).

|             | A         | В             | C                   | D         | E              | F                     | G          | н          |
|-------------|-----------|---------------|---------------------|-----------|----------------|-----------------------|------------|------------|
| 1           | fips      | area          | areatype            | naics     | d199001        | d199002               | d199003    | d199004    |
| 2           | 80        | 000080        | 01                  | 000000    | 772889         | 777318                | 784127     | 793142     |
| 3           | 80        | 000080        | 01                  | 111000    | 40352          | 40264                 | 40177      | 40089      |
| 4           | 80        | 000080        | 01                  | 112000    | 31705          | 31636                 | 31567      | 31498      |
| K           | Microsoft | Excel - Examp | leFormat1Ar         | nual [Com | patibility Mod | de]                   |            |            |
|             |           |               |                     |           |                |                       |            |            |
|             | A         | В             | C                   | D         | E              | F                     | G          | н          |
| 1           | A<br>Fips | B<br>areatype | Carea               | D         | E<br>d1972     | F<br>d1973            | G<br>d1974 | H<br>d1975 |
|             | C-40      |               | C<br>area<br>000080 |           |                | F<br>d1973<br>1538240 | d1974      | 67.        |
| 1<br>2<br>3 | Fips      | areatype      |                     | NAICS     | d1972          |                       | d1974      | d1975      |

Kicrosoft Excel - ExampleFormat1Monthly [Compatibility Mode]

Figure 1: Short Term (top) and Long Term (bottom) Spreadsheet Format 1 examples

☞ All other columns in the spreadsheet will be ignored. If definitions are not valid, the record will be ignored in the import with messages displayed. All area, industry, and employment values will fall under the respective column header cell that identifies it.

- Import Spreadsheet (<u>ST</u> and <u>LT</u>)
- File Formats Introduction

### Employment Spreadsheet Format 2 -Industries as Columns

This spreadsheet format identifies the area and date per row, industries as columns with each Industry/employment value extending to the right. This spreadsheet format may contain both monthly and annual data rows intermingled. It is referred to as a vertical or tall layout.

The first row in the spreadsheet is reserved for the column headers. Four column headers are required to identify the area and date, and can be in any order in the header row:

- **fips** State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **area** Area Code (valid codes are 6 digits long and may contain zeros left or right).
- **areatype** Area Type code (2 digits long and may contain a zero on the left). "00" indicates US variables, "01" indicates statewide values, otherwise the code identifies a specific area type.
- **date** Specifies the date to be associated with industry employment values.

| 1 | A                  | В                 | С               | D             | E                   | F        | G       | H       |
|---|--------------------|-------------------|-----------------|---------------|---------------------|----------|---------|---------|
| 1 | fips               | area              | areatype        | date          | 1111000             | 1112000  | 1114000 | 1115000 |
| 2 | 80                 | 000000            | 01              | 199001        | 7494                | 1093     | 225     | 668     |
| 3 | 80                 | 080000            | 01              | 199002        | 7546                | 1098     | 186     | 649     |
| 4 | 80                 | 000000            | 01              | 199003        | 7592                | 1089     | 200     | 635     |
| X | Microsoft Exc<br>A | el - Example<br>B | Format2Ann<br>C | ual [Com<br>D | patibility Mod<br>E | de]<br>F | G       | н       |
| 1 | fips               | area              | areatype        | date          | 1111000             | 1112000  | 1114000 | 1115000 |
| 2 | 80                 | 080000            | 01              | 1990          | 7494                | 1093     | 225     | 668     |
|   | 00                 | 000080            | 01              | 1991          | 7546                | 1098     | 186     | 649     |
| 3 | 80                 | 000000            |                 |               |                     |          |         |         |

Kicrosoft Excel - ExampleFormat2Monthly [Compatibility Mode]

Figure 1: Short Term (top) and Long Term (bottom) Format Type 2 examples

The first row also requires the column header cells that identify the industry for each column of employment values. Each of these column header cells must begin with the letter "I" (upper or lower case) followed by the Industry/NAICS code (example: 1811000, 1626262, 1999100, etc.).

This format spreadsheet may contain both monthly and annual data rows intermingled, however, the first row of data will be recognized by the system as the type to import and will ignore other type records. In the example below the first row of data is a monthly type and will import all the monthly type records and ignore the annual type records. If the first row of data contains an annual type then all annual types will be imported and the monthly will be ignored.

| 1. | A    | В      | С        | D      | BX      | BY      | BZ      | CA      | CB      | CC      | CD      | CE      |   |
|----|------|--------|----------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---|
| 1  | fips | area   | areatype | date   | 1541000 | 1551000 | 1561000 | 1562000 | 1621000 | 1623000 | 1624000 | 1000000 | Γ |
| 2  | 80   | 000080 | 01       | 199001 | 19278   | 2191    | 23267   | 993     | 15556   | 3316    | 7300    | 518908  |   |
| 3  | 80   | 000080 | 01       | 199002 | 19781   | 2178    | 23716   | 992     | 15654   | 3249    | 7500    | 525874  |   |
| 4  | 80   | 000080 | 01       | 199003 | 19989   | 2201    | 24155   | 997     | 15780   | 3275    | 7600    | 527976  | 1 |
| 5  |      | 000080 |          | 199004 | 19667   | 2283    | 23968   | 1066    | 15808   | 3293    | 7700    | 528882  |   |
| 6  | 80   | 000080 | 01       | 199005 | 19471   | 2324    | 23994   | 1063    | 15876   | 3308    | 7700    | 530808  |   |
| 7  | 80   | 000080 | 01       | 199006 | 19697   | 2394    | 24536   | 1073    | 16070   | 3384    | 7800    | 535672  |   |
| 8  | 80   | 000080 | 01       | 199007 | 19634   | 2379    | 24468   | 1136    | 16195   | 3344    | 8800    | 536228  |   |
| 9  | 80   | 000080 | 01       | 199008 | 19817   | 2397    | 24856   | 1105    | 16332   | 3319    | 8700    | 536386  |   |
| 10 | 80   | 000080 | 01       | 199009 | 19529   | 2362    | 24695   | 1129    | 16283   | 3321    | 8100    | 529585  |   |
| 11 | 80   | 000080 | 01       | 199010 | 19733   | 2188    | 25248   | 1176    | 16454   | 3361    | 8000    | 539134  |   |
| 12 | 80   | 000080 | 01       | 199011 | 19725   | 2024    | 25208   | 1135    | 16406   | 3385    | 8200    | 545627  |   |
| 13 | 80   | 000080 | 01       | 199012 | 20003   | 2080    | 25130   | 1141    | 16613   | 3380    | 8100    | 548426  |   |
| 14 | 80   | 000080 | 01       | 1990   | 19694   | 2250.1  | 24437   | 1083.8  | 16086   | 3327.9  | 8000    | 533592  |   |
| 15 | 80   | 000080 | 01       | 199101 | 22002   | 4698    | 24416   | 1150    | 16333   | 3281    | 8900    | 538524  | 1 |
| 16 | 80   | 000080 | 01       | 199102 | 22452   | 4696    | 24197   | 1140    | 16362   | 3350    | 9100    | 540054  |   |
| 17 | 80   | 000080 | 01       | 199103 | 22576   | 4721    | 23612   | 1171    | 16643   | 3430    | 9200    | 540926  |   |
| 18 | 80   | 000080 | 01       | 199104 | 22572   | 4491    | 23979   | 1126    | 16395   | 3362    | 9000    | 538000  | 1 |
| 19 | 80   | 000080 | 01       | 199105 | 22016   | 4544    | 24024   | 1143    | 16411   | 3378    | 9000    | 539880  | 1 |
| 20 | 80   | 000080 | 01       | 199106 | 22300   | 4558    | 24354   | 1170    | 16591   | 3400    | 9100    | 543176  | 1 |
| 21 | 80   | 000080 | 01       | 199107 | 22403   | 4727    | 24051   | 1206    | 16793   | 3365    | 10100   | 545279  |   |
| 22 | 80   | 000080 | 01       | 199108 | 22322   | 4734    | 24111   | 1138    | 16953   | 3435    | 9900    | 546084  |   |
| 23 | 80   | 000080 | 01       | 199109 | 22056   | 4737    | 24597   | 1157    | 16832   | 3408    | 9200    | 539348  |   |
| 24 | 80   | 000080 | 01       | 199110 | 22138   | 4651    | 24294   | 1197    | 17067   | 3459    | 9500    | 543523  |   |
| 25 | 80   | 000080 | 01       | 199111 | 22293   | 4676    | 24580   | 1161    | 17143   | 3487    | 9700    | 548008  |   |
| 26 | 80   | 000080 | 01       | 199112 | 22371   | 4684    | 24637   | 1184    | 17240   | 3488    | 9800    | 553594  | 1 |
| 27 | 80   | 000080 | 01       | 1991   | 22292   | 4659.8  | 24238   | 1161.9  | 16730   | 3403.6  | 9400    | 543041  | 1 |

Figure 2: Type 2 format example

All other columns in the spreadsheet will be ignored. If definitions are not valid, the record will be ignored in the import and messages will be displayed to indicate the number of records not imported. All area, date, and industry employment values will fall under the respective column header cell that identifies it.

- Import Spreadsheet (<u>ST</u> and <u>LT</u>)
- File Formats Introduction
- Export Employment Series

### Employment Spreadsheet Format 3 -Industry and Date by Row

This spreadsheet format identifies the area, industry, level, and date per row. Each industry/employment value extends to the right. For Short Term, this spreadsheet format can contain both monthly and annual data rows. It is referred to as a square or block/vertical or tall layout.

The first row in the spreadsheet is reserved for the column headers. Six column headers are required and can be in any order in the header row:

- **FIPS** State FIPS code (2 character alphanumeric and may contain a zero on the left).
- Area Area Code (valid codes are 6 digits long and may contain zeros left of right).
- AreaType Area Type code (2 digits long and may contain a zero on the left). "00" indicates US variables, "01" indicates statewide values, otherwise the code identifies a specific area type.
- **NAICS** Industry Code (valid codes are 6 digits long and may contain zeros on the right).
- Level Industry Level.
- Date Specifies the date to be associated with industry employment values.

| 1 | A    | В             | С           | D      | E             | F      |
|---|------|---------------|-------------|--------|---------------|--------|
| 1 | FIPS | Area          | Areatype    | NAICS  | Level         | Date   |
| 2 | 80   | 000080        | 01          | 236000 | 726           | 200801 |
| 3 | 80   | 000080        | 01          | 237000 | 323           | 200801 |
| 4 | 80   | 000080        | 01          | 238000 | 75            | 200801 |
| X |      | Excel - Examp | leFormat3An |        | atibility Mod | 17.    |
|   | A    | B             | C           | D      | E             | F      |
| 1 | FIPS | Area          | Areatype    | NAICS  | Level         | Date   |
| 2 | 80   | 000080        | 01          | 236000 | 726           | 2008   |
| 3 | 80   | 000080        | 01          | 237000 | 323           | 2008   |
| 4 | 80   | 000080        | 01          | 238000 | 75            | 2008   |

Kicrosoft Excel - ExampleFormat3Monthly [Compatibility Mode]

Figure 1: Short Term (top) and Long Term (bottom) Format Type 3 examples

The record will be ignored in the import and messages will be displayed to indicate

the number of records not imported. All area, industry, level, and date values will fall under the respective column header cell that identifies it.

- Import Spreadsheet (<u>ST</u> and <u>LT</u>)
- File Formats Introduction

### **Variable Spreadsheet Format**

The variable spreadsheet format identifies the date, and one or more employment variable values per row. The spreadsheet must either contain monthly (Short Term) or annual (Long Term) data, but cannot contain both in the same file.

For more information about importing spreadsheets, reference the Import Spreadsheet (<u>ST</u> and <u>LT</u>) modules. Reference the Variable Directory modules (<u>ST</u> and <u>LT</u>) for additional information.

#### Variable Spreadsheet Layout

The first row in the spreadsheet is reserved for column headers. The required columns are:

- date Specifies the date to be associated with variables.
- (variable name) At least one variable, and as many as needed. These variable names must be exact, as listed how you want them displayed in the Variable Directory (including spaces). If the name is deviates in any way from what is already listed in the Variable Directory, a new variable will be added.

| ŝ. | A      | В                                       | C                                     | D                        |
|----|--------|---|---------------------------------------|--------------------------|
| 1  | date   | Composite Index - 10 Leading Indicators | Average Weekly Hours in Manufacturing | Average Weekly Initial U |
| 2  | 199001 | 65.3                                    | 40.5                                  | 362                      |
| 3  | 199002 | 65.1                                    | 40.6                                  | 356                      |
| 1  | 199003 | 65.1                                    | 40.7                                  | 344                      |

Figure 1: Short Term variables spreadsheet format

All variables and data values will fall under the respective column header cell that identifies it.

- Variable Directory (ST and LT)
- Review Variables (<u>ST</u> and <u>LT</u>)
- Preview Variables
- File Formats Introduction

### **ICT Spreadsheet Format**

This spreadsheet format supports importing Industry Control Total (ICT) data for staffing patterns. It has ten required columns (in **bold**) and two optional columns:

- **indid** Industry ID Code (valid codes are 6 digits long and may contain zeros on right).
- indname Industry name (optional column).
- **stfips** State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **areatype** Area Type code (2 digits long and may contain a zero on the left). "00" indicates US variables, "01" indicates state-wide values, otherwise the code identifies a specific area type.
- **areacode** Area Code (valid codes are 6 digits long and may contain zeros left or right).
- areaname Name of the area (optional column).
- baseyear Base year.
- **base** Base employment.
- projyear Projected year.
- **proj** Projected employment.
- **conf1** Primary Confidentiality flag (the new ICT record's confidentiality flag will be a combination of the primary and secondary flags).
- conf2 Secondary Confidentiality flag.

|    | Α      | B            | С      | D        | E        | F         | G        | Н     | 1        | J     | K     | L     |
|----|--------|--------------|--------|----------|----------|-----------|----------|-------|----------|-------|-------|-------|
| 1  | indid  | indname      | stfips | areatype | areacode | areaname  | baseyear | base  | projyear | proj  | conf1 | conf2 |
| 2  | 000000 | Total All In | 78     | 01       | 000078   | Freedonia | 2017     | 36204 | 2019     | 36471 | 0     | 0     |
| 3  | 230000 | Construction | 78     | 01       | 000078   | Freedonia | 2017     | 0     | 2019     | 1908  | 0     | 0     |
| 4  | 236000 | Construction | 78     | 01       | 000078   | Freedonia | 2017     | 794   | 2019     | 887   | 0     | 0     |
| 5  | 237000 | Heavy and    | 78     | 01       | 000078   | Freedonia | 2017     | 456   | 2019     | 541   | 0     | 0     |
| 6  | 238000 | Specialty 7  | 78     | 01       | 000078   | Freedonia | 2017     | 482   | 2019     | 480   | 0     | 0     |
| 7  | 310000 | Manufactu    | 78     | 01       | 000078   | Freedonia | 2017     | 0     | 2019     | 459   | 0     | 0     |
| 8  | 312000 | Beverage a   | 78     | 01       | 000078   | Freedonia | 2017     | 283   | 2019     | 288   | 0     | 0     |
| 9  | 327000 | Nonmetalli   | 78     | 01       | 000078   | Freedonia | 2017     | 158   | 2019     | 151   | 0     | 0     |
| 10 | 334000 | Computer     | 78     | 01       | 000078   | Freedonia | 2017     | 20    | 2019     | 20    | 0     | 0     |
| 11 | 420000 | Wholesale    | 78     | 01       | 000078   | Freedonia | 2017     | 0     | 2019     | 763   | 0     | 0     |
| 12 | 424000 | Merchant V   | 78     | 01       | 000078   | Freedonia | 2017     | 755   | 2019     | 763   | 0     | 0     |
| 13 | 440000 | Retail Trad  | 78     | 01       | 000078   | Freedonia | 2017     | 0     | 2019     | 5797  | 0     | 0     |
| 14 | 441000 | Motor Veh    | 78     | 01       | 000078   | Freedonia | 2017     | 395   | 2019     | 386   | 0     | 0     |
| 15 | 443000 | Electronics  | 78     | 01       | 000078   | Freedonia | 2017     | 203   | 2019     | 194   | 0     | 0     |

Figure 1: ICT spreadsheet format

All other columns in the spreadsheet will be ignored. Empty cell values will cause the row to be ignored without creating an ICT record for that row of data. All values will fall under the respective column header that identifies it.

### **Projections Suite**

- Import ICT
- <u>Edit ICT</u>
  <u>ICT Export</u>
- File Formats Introduction

# Area Format

This spreadsheet format provides the means to create multiple new areas in a single operation. Creating areas from a spreadsheet is not a typical procedure (usually analysts will simply build areas with the templates provided in the <u>Manage Areas</u> module), but the option is made available through the Import Spreadsheet (<u>ST</u> and <u>LT</u>) modules.

The first row in the spreadsheet is reserved for the column headers. Four column headers are required to identify the area and industry, and can be in any order in the header row:

- **fips** State FIPS code (2 character alphanumeric and may contain a zero on the left).
- **area** Area code (valid codes are 6 digits long and may contain zeros left or right).
- **areatype** Area Type code (2 digits long and may contain a zero on the left). "00" indicates US variables, "01" indicates statewide values, otherwise the code identifies a specific area type.
- name Area name.

| X | 🛣 Microsoft Excel - ImportAreaFormat |        |          |        |  |  |  |  |  |
|---|--------------------------------------|--------|----------|--------|--|--|--|--|--|
|   | А                                    | В      | С        | D      |  |  |  |  |  |
| 1 | fips                                 | area   | areatype | name   |  |  |  |  |  |
| 2 | 69                                   | 999103 | 14       | Area 1 |  |  |  |  |  |
| 3 | 69                                   | 999104 | 14       | Area 2 |  |  |  |  |  |
| 4 | 69                                   | 999105 | 14       | Area 3 |  |  |  |  |  |
| 5 | 69                                   | 999106 | 14       | Area 4 |  |  |  |  |  |
| 6 | 69                                   | 999107 | 14       | Area 5 |  |  |  |  |  |

Figure 1: Area Format spreadsheet

All other columns in the spreadsheet will be ignored. The areatype code must already exist in the application database. All area values will fall under the respective column header cell that identifies it.

- Manage Areas
- File Formats Introduction

### Validation Section of the ETA File Format

Two of these file formats are produced in the Projections Suite: one for Industry data and one for Occupational data. Their formats are similar, but have minor differences listed below. This collection of columns is used in the <u>Validation</u> module in Occupational Projections to validate file contents before uploading ETA data. Each set of columns listed below is immediately followed by the contents of the <u>Geographic</u> <u>Comparison File Format</u>.

For more information on the ETA deliverable process from the Projections Central Support website, click <u>here</u>.

The file produced in **Occupational** Projections must contain the following eleven columns to pass validation:

- **stfips** The two-digit state FIPS.
- **periodid** 2 if it is short term data and 10 if it is long term data.
- **occcode** The occupation code.
- title The occupation title.
- estoccprj The base year employment value.
- projoccprj The projected year employment value.
- **nchg** The numeric change. (projoccprj estoccprj).
- pchg The percent change. (projoccprj estoccprj) / estoccprj \* 100. Entered to five decimal places.
- **aopent** The annual average total openings.
- **suppress** The suppression value indicates whether the data is confidential. 1 if it is confidential and 0 if not.
- **baseyear** The base year.
- projectionyear The projection year.

The file produced in **Industry** (both Short Term and Long Term) Projections must contain the following ten columns to pass validation:

- stfips The two-digit state FIPS.
- **periodid** 2 if it is short term data and 10 if it is long term data.
- indcode The industry code.
- title The industry title.
- level Occupational level (SOC level).
- **basevalue** The base year employment value.
- projectionvalue The projected year employment value.
- **nchg** The numeric change (proj base).
- pchg The percent change (proj base) / base \* 100). Entered to five decimal places.

- **suppress** The suppression value indicates whether the data is confidential. 1 if it is confidential and 0 if not.
- **baseyear** The base year.
- projectionyear The projection year.

- Validation
- Upload Area Connection
- File Formats Introduction
- Geographic Comparison File Format

### **Geographic Comparison File Format**

The <u>Short</u> and <u>Long Term Geographic Comparison</u> modules generate an Excel spreadsheet with the state comparison data. These columns are immediately preceded by the <u>Validation Section of the ETA File Format</u>.

The following information can also be found inside the generated file, under the Column Definitions tab. The Geographic Comparison file formats are:

| Column | Occupation Format Definition   | <mark>Column</mark> | Industry Format Definition   |
|--------|--|---------------------|--|
| L      | Growth Ratio   | к                   | Growth Ratio   |
| м      | Number of States Submitting this Occupation Code                       | L                   | Number of States Submitting this Industry Code                         |
| N      | Number of States with a Higher<br>Percent Change                       | М                   | Number of States with a Higher<br>Percent Change                       |
| 0      | Number of States with a Lower<br>Percent Change                        | N                   | Number of States with a Lower<br>Percent Change                        |
| Р      | Minimum Percent Change of All States                                   | 0                   | Minimum Percent Change of All States                                   |
| Q      | Maximum Percent Change of All States                                   | Р                   | Maximum Percent Change of All<br>States                                |
| R      | Lowest Percent Change of All States, designated by a 1                 | Q                   | Lowest Percent Change of All<br>States, designated by a 1              |
| s      | Highest Percent Change of All States, designated by a 1                | R                   | Highest Percent Change of All States, designated by a 1                |
| т      | 1 of 3 States with the Lowest<br>Percent Change, designated by<br>a 1  | S                   | 1 of 3 States with the Lowest<br>Percent Change, designated by a<br>1  |
| υ      | 1 of 3 States with the Highest<br>Percent Change, designated by<br>a 1 | т                   | 1 of 3 States with the Highest<br>Percent Change, designated by a<br>1 |
| v      | 1 of 3 States with a Positive<br>Percent Change, designated by<br>a 1  | U                   | 1 of 3 States with a Positive<br>Percent Change, designated by a<br>1  |
| w      | 1 of 3 States with a Negative<br>Percent Change, designated by<br>a 1  | V                   | 1 of 3 States with a Negative<br>Percent Change, designated by a<br>1  |
| x      | Only State with a Positive<br>Percent Change, designated by<br>a 1     | w                   | Only State with a Positive Percent<br>Change, designated by a 1        |
| Y      | Only State with a Negative<br>Percent Change, designated by<br>a 1     | x                   | Only State with a Negative<br>Percent Change, designated by a<br>1     |
| z      | Each State's Percent Change in Rank Order                              | Y                   | Each State's Percent Change in Rank Order                              |

| Column | Occupation Format Definition                                      | Column | Industry Format Definition  |
|--------|---|--------|---|
| АА     | Number of States Submitting this Occupation Code                  | z      | Number of States Submitting this Industry Code                    |
| AB     | Number of States with a Higher<br>Growth Ratio                    | AA     | Number of States with a Higher<br>Growth Ratio                    |
| AC     | Number of States with a Lower<br>Growth Ratio                     | AB     | Number of States with a Lower<br>Growth Ratio                     |
| AD     | Minimum Growth Ratio of All<br>States                             | AC     | Minimum Growth Ratio of All<br>States                             |
| AE     | Maximum Growth Ratio of All<br>States                             | AD     | Maximum Growth Ratio of All<br>States                             |
| AF     | State with the Lowest Growth Ratio, designated by a 1             | AE     | State with the Lowest Growth Ratio, designated by a 1             |
| AG     | State with the Highest Growth Ratio, designated by a 1            | AF     | State with the Highest Growth<br>Ratio, designated by a 1         |
| АН     | 1 of 3 States with the Lowest<br>Growth Ratio, designated by a 1  | AG     | 1 of 3 States with the Lowest<br>Growth Ratio, designated by a 1  |
| AI     | 1 of 3 States with the Highest<br>Growth Ratio, designated by a 1 | АН     | 1 of 3 States with the Highest<br>Growth Ratio, designated by a 1 |
| AJ     | 1 of 3 States with a Negative<br>Growth Ratio, designated by a 1  | AI     | 1 of 3 States with a Negative<br>Growth Ratio, designated by 1    |
| AK     | 1 of 3 States with a Positive<br>Growth Ratio, designated by a 1  | AJ     | 1 of 3 States with a Positive<br>Growth Ratio, designated by a 1  |
| AL     | Only State with a Negative<br>Growth Ratio, designated by a 1     | AK     | Only State with a Negative<br>Growth Ratio, designated by a 1     |
| AM     | Only State with a Positive<br>Growth Ratio, designated by a 1     | AL     | Only State with a Positive Growth Ratio, designated by a 1        |
| AN     | Each State's Growth Ratio in Rank Order                           | АМ     | Each State's Growth Ratio in Rank Order                           |
| AO     | Each State's Base Employment<br>in Rank Order                     | AN     | Each State's Base Employment in<br>Rank Order                     |

The procedure implemented in this report uses a growth ratio to assign a Projection Descriptor and replicates the methodology used by the U.S. Bureau of Labor Statistics in its review of 10-year, occupational employment projections. This report also uses percent change to rank each state on a number of additional descriptors. The mix of growth ratio and percent change descriptors should provide a comprehensive depiction of a state's occupational projections.

Occupations with a suppress value of 1 are not analyzed and excluded from the comparative rankings. These occupations do not appear on the completed state analysis spreadsheet.

**Projections Suite** 

The results in the Growth Ratio are estimated for each occupation by dividing the occupation's growth rate in the state to the state's projected growth rate for total employment. The ratio always uses the sign of the numerator.

The state comparisons could result in a number of states with the same value. For example, if six states are tied at #10 for the rank order, the next rank would be 16. This explains how N could equal 50, with 9 having a higher percent change and 35 with a lower percent change. This indicates 6 states were tied at a value.

Most ties should be eliminated by using a percentage change calculation to five decimal places.

- Short Term Geographic Comparison (<u>ST</u> and <u>OP</u>)
- Long Term Geographic Comparison (<u>LT</u> and <u>OP</u>)
- Validation Section of the ETA File Format
- File Formats Introduction

# LEWIS FoxPro/Excel Staffing Pattern Format

Field specifications for LEWIS FoxPro/Excel staffing pattern file structure:

| Field | Field Name | Туре | Width,<br>Dec |
|-------|------------|------|---------------|
| 1     | RECTYPE    | Char | 1             |
| 2     | ESTYEAR    | Char | 4             |
| 3     | PANEL      | Char | 1             |
| 4     | STFIPS     | Char | 2             |
| 5     | AREATYPE   | Char | 2             |
| 6     | AREA       | Char | 6             |
| 7     | INDCLASS   | Char | 1             |
| 8     | INDCODE    | Char | 6             |
| 9     | OCCCLASS   | Char | 1             |
| 10    | OCCCD      | Char | 7             |
| 11    | SUBOCCCD   | Char | 7             |
| 12    | SCHEDULES  | Int  | 4             |
| 13    | IMPSCHED   | Int  | 4             |
| 14    | EMPL       | Num  | 12,2          |
| 15    | EMPLVAR    | Num  | 12,2          |
| 16    | EMPLRSE    | Num  | 6,2           |
| 17    | CONFFLAG   | Int  | 4             |
| 18    | QUALFLAG   | Int  | 4             |
| 19    | RSEFLAG    | Int  | 4             |

- Import Staffing Pattern
- File Formats Introduction

# **BLS FoxPro Staffing Pattern Format**

Field specifications for BLS Staffing Pattern file structure for FoxPro.dbf file:

| Field | Field Name | Туре | Width,<br>Dec |
|-------|------------|------|---------------|
| 1     | AREA       | Char | 7             |
| 2     | NAICS      | Char | 6             |
| 3     | FRAME_N    | Num  | 10,1          |
| 4     | SAMPLE_N   | Num  | 8             |
| 5     | RESPNDE_N  | Num  | 8             |
| 6     | RESPNDW_N  | Num  | 8             |
| 7     | TOTOCC_N   | Num  | 8             |
| 8     | RSPOCCE_N  | Num  | 8             |
| 9     | RSPOCCW_N  | Num  | 8             |
| 10    | OCC_CODE   | Char | 7             |
| 11    | OCC_TITL   | Char | 150           |
| 12    | RAW_EMP    | Num  | 12,1          |
| 13    | ROUNDEMP   | Num  | 12            |
| 14    | MEANWAGE   | Num  | 7,2           |
| 15    | MN_THRD    | Num  | 7,2           |
| 16    | MN_2THD    | Num  | 7,2           |
| 17    | WPCT10     | Num  | 7,2           |
| 18    | WPCT25     | Num  | 7,2           |
| 19    | WPCT50     | Num  | 7,2           |
| 20    | WPCT75     | Num  | 7,2           |
| 21    | WPCT90     | Num  | 7,2           |
| 22    | A_MEAN     | Num  | 9             |
| 23    | A_MNTHRD   | Num  | 9             |
| 24    | A_MN2THD   | Num  | 9             |
| 25    | A_WPCT10   | Num  | 9             |
| 26    | A_WPCT25   | Num  | 9             |

| Field | Field Name | Туре | Width,<br>Dec |
|-------|------------|------|---------------|
| 27    | A_WPCT50   | Num  | 9             |
| 28    | A_WPCT75   | Num  | 9             |
| 29    | A_WPCT90   | Num  | 9             |
| 30    | PCTE_IMP   | Num  | 6,1           |
| 31    | PCTW_IMP   | Num  | 6,1           |
| 32    | WMU_PRSE   | Num  | 6,1           |
| 33    | EMP_PRSE   | Num  | 6,1           |
| 34    | CONF_EMP   | Char | 1             |
| 35    | CONF_WAGE  | Char | 1             |
| 36    | QUAL_EMP   | Char | 1             |
| 37    | QUAL_WAGE  | Char | 1             |
| 38    | RSE_FLAG   | Char | 1             |
| 39    | ROLLUP     | Char | 8             |
| 40    | RELEASE    | Char | 9             |

- Import Staffing Pattern
- File Formats Introduction

### **Staffing Pattern Spreadsheet Format**

This spreadsheet format identifies the area, industry, occupation, employment level, and confidentiality per row. This spreadsheet format is used to import data into the Projections Application that was not necessarily created using Projections Suite. Match your data to the format below and import it using the <u>Import Staffing Pattern</u> module in Occupational Projections.

Column headers must be in the first row of the spreadsheet. Seven column headers are required and can be in any order in the header row:

- **indid** Industry ID code (valid codes are 6 digits long and may contain zeros on the right).
- **occid** Occupational ID code (valid codes start with 2 digits, followed by a dash, and then 4 digits. Example: 00-0000, 11-0000, 19-1031, etc.).
- **areacode** Six-digit area identification code.
- **areatype** Area Type code (2 digits long and may contain a zero on the left). "00" indicates US variables, "01" indicates statewide values, and otherwise the code identifies a specific area type.
- **stfips** State FIPS code (2 character alphanumeric and may contain a zero on the left).
- empl Employment value (whole number without decimal).
- **confflg** Confidentiality flag (either 0 or 1, where 1 is confidential).

| 1  | A      | В       | C        | D        | E      | F    | G        | E |
|----|--------|---------|----------|----------|--------|------|----------|---|
| 1  | indid  | occid   | areacode | areatype | stfips | empl | confflag |   |
| 2  | 814000 | 11-1011 | 000080   | 01       | 80     | 32   | 0        |   |
| 3  | 814000 | 11-1021 | 000080   | 01       | 80     | 582  | 0        |   |
| 4  | 814000 | 11-2011 | 000080   | 01       | 80     | 43   | 0        |   |
| 5  | 814000 | 11-2021 | 000080   | 01       | 80     | 23   | 0        |   |
| 6  | 814000 | 11-2022 | 000080   | 01       | 80     | 2    | 0        |   |
| 7  | 814000 | 11-2031 | 000080   | 01       | 80     | 111  | 0        |   |
| 8  | 814000 | 11-3011 | 000080   | 01       | 80     | 48   | 0        |   |
| 9  | 814000 | 11-3021 | 000080   | 01       | 80     | 25   | 0        |   |
| 10 | 814000 | 11-3031 | 000080   | 01       | 80     | 7    | 0        |   |
| 11 | 814000 | 11-3061 | 000080   | 01       | 80     | 10   | 0        |   |
| 12 | 814000 | 11-9031 | 000080   | 01       | 80     | 1    | 0        |   |

Figure 1: Staffing Pattern spreadsheet format

☞ All other columns in the spreadsheet will be ignored. All area, industry, level, and date values will fall under the respective column header cell that identifies it.

- Import Staffing Pattern
- Edit Staffing Pattern
- File Formats Introduction

### **Local Review Format**

Local Review is designed to review **industry** projections exported from the Projections Suite. Local Review does not enable reviewing of Occupational Projections.

#### **Export Industry Projections**

1. Open the Projections Suite and navigate to the **Short Term** or **Long Term** menu. Select the **Output** group menu (you can also hit F9).

2. Select Export Industry Projections.

| ✓ Short Term          | Long Term  | Occupational             | Report Manager  | Local Review | Exit                    |
|-----------------------|------------|--------------------------|---|--------------|-------------------------|
| 364                   |            | port Industry Projection | ns (ST)   |              | <b>↓</b> <sup>1</sup> × |
| Short Term Output     |            | 📙 🦪 😨 🚦                  | ÷   |              | 1                       |
| Confidentiality       |            |                          | export industry projection<br>tions, or to transfer them of |              |                         |
| ICT Export            |            |                          | ating where you would like                                  |              | en ener the export      |
| Export Historical Ser | ries (     | Export Data to File -    | Local Review Format   |              |                         |
| Export Variable Serie | es         | Export Data to File -    | Projections Review  |              |                         |
| Reports               |            | Transfer Data to Rep     | -   |              |                         |
| Validate Data         |            |                          | -   |              |                         |
| Export Industry Proj  | ections    | Source Area(s):          | Freedonia   |              | ~                       |
| short-term Industry P | rojections |                          |   |              |                         |

Figure 1: Export Industry Projections module

3. On the screen that appears, select the **Source Area(s)** you would like to transfer to Report Manager. If you would like to select all the areas, select the "All" areas at the top of the list.

4. Click the Export Data to File - Local Review Format radio button.

5. When you have made your selection, click the **Export** button on the Active Module Toolbar.

6. A Save As dialog box will display. Name and select a location for the file, then press the **Save** button.

7. A Finished dialog box will display once projections have been exported. Click **OK**.

#### Local Review File Format

The Local Review file format contains the following columns:

- **FIPS** State FIPS code (2 character alphanumeric and may contain a zero on the left).
- Area Area Code (valid codes are 6 digits long and may contain zeros left or right and must correspond to the area code found in <u>Manage Areas</u> - Area Directory).
- AreaName The name of the area.
- AreaType Area Type code (2 digits long and may contain a zero on the left). "01" indicates statewide area type. See Manage Areas for the various types.
- IndustryCode Industry Code (valid codes are 6 digits long and may contain zeros on the right and must be a code found in Manage Industries - <u>Industry</u> <u>Directory</u>).
- IndustryTitle Corresponding NAICS Industry Title.
- Date Year and quarter.
- Value Employment value.

|   | viicioso | IL LACEI - LO | Canceviewing | lustryFi0ject | lions_arre   |                  |         |       |
|---|----------|---------------|--------------|---------------|--------------|------------------|---------|-------|
|   | Α        | В             | С            | D             | E            | F                | G       | Н     |
| 1 | FIPS     | Area          | AreaName     | AreaType      | IndustryCode | IndustryTitle    | Date    | Value |
| 2 | 17       | 000017        | Freedonia    | 01            | 211000       | Oil and Gas Extr | 2013 Q2 | 23605 |
| 3 | 17       | 000017        | Freedonia    | 01            | 211000       | Oil and Gas Extr | 2013 Q3 | 23617 |
| 4 | 17       | 000017        | Freedonia    | 01            | 211000       | Oil and Gas Extr | 2013 Q4 | 23628 |
| 5 | 17       | 000017        | Freedonia    | 01            | 211000       | Oil and Gas Extr | 2014 Q1 | 23640 |
| 6 | 17       | 000017        | Freedonia    | 01            | 211000       | Oil and Gas Extr | 2014 Q2 | 23652 |

Microsoft Excel - LocalReviewIndustryProjections\_STIP

Figure 2: Local Review File Format

#### **Related Content**

Local Review

### **QCEW** Data Extract

#### **QCEW/Win Text File Extract Procedure**

1. A state analyst must request QCEW run job ES2J247D (also known as 247D). The analyst must identify the parameters. Parameters could include:

- 3-digit for state wide or counties
- Any ownership value
- Date range
- Annual versus monthly

2. The QCEW analyst will download the file. The file will be named YBU**49X**.A145.JOB247D.ALMS1. 49X is the Utah state FIPS code. Your state code will be in this position.

3. The state analyst will review the data. The analyst will generally import the text file into a spreadsheet to validate the data. Once the data is validated in the spreadsheet, it can be uploaded as spreadsheet file format Type 1 - 3.

4. Use the Import Text File (<u>ST</u> and <u>LT</u>) or Import Spreadsheet (<u>ST</u> and <u>LT</u>) modules to import the file into Projections Suite.

- QCEW Output Text Format
- <u>Win202/MSA Text Format</u>
- File Formats Introduction

### **QCEW Output Text Format**

The QCEW report from the job 247D ALMIS Extract File format (ES2ALMS) consists of a fixed set of **38** required columns and an additional 4 columns for optional data. Consequently, the import software expects to find either **38** or **42** columns. If the text file has fewer or a greater number columns the Projections application will display errors. The following is the layout of the fixed columns:

| Columns | Length | Description   |
|---------|--------|---|
| 1 - 2   | 2      | Not used.   |
| 3       | 1      | <space></space>   |
| 4 - 7   | 4      | ALMIS-specific county code, including<br>one-byte area code leading sub-field.<br>Column 4 = ALMIS area code portion of<br>county identifier<br>Columns 5 - 7 = 3-digit County FIPS code  |
| 8       | 1      | <space></space>   |
| 9 - 10  | 2      | Classification code for area defined above.   |
| 11      | 1      | <space></space>   |
| 12 - 17 | 6      | NAICS code.   |
| 18      | 1      | <space></space>   |
| 19 - 22 | 4      | This may either represent a 4-digit year,<br>or a 2-digit year and 2-digit quarter<br>combined; however, no sub-field<br>definitions have been provided. The<br>quarter field is actually defined separately,<br>later in the record. |
| 23 - 24 | 2      | Month of the year for ALMIS data.   |
| 25      | 1      | <space></space>   |
| 26      | 1      | Quarter for ALMIS data (1, 2, 3, or 4).   |
| 27      | 1      | <space></space>   |
| 28 - 35 | 8      | ALMIS employment.   |
| 36      | 1      | <space></space>   |
| 37      | 1      | ALMIS source code.  |
| 38      | 1      | <space></space>   |
| 39      | 1      | Ownership code (1, 2, 3, or 5).   |
| 40      | 1      | <space></space>   |

| Columns | Length | Description   |
|---------|--------|---|
| 41      | 1      | Non-disclosure suppression indicator ('0'<br>= disclosable, '1' = non-disclosable). |
| 42      | 1      | <space></space>   |

- Import Text File (<u>ST</u> and <u>LT</u>)
  Import Spreadsheet (<u>ST</u> and <u>LT</u>)
- File Formats Introduction
  QCEW Data Extract Instructions

## Win202/MSA Text Format

The Win202/MSA format is similar to the standard QCEW format except that the area code has an additional column. The import software expects that this format has **39** columns or **43** columns. If the text file has fewer or a greater number columns the application will display errors. The following is the layout of the fixed columns:

| Columns | Length | Description   |
|---------|--------|---|
| 1 - 2   | 2      | Not used.   |
| 3       | 1      | <space></space>   |
| 4 - 8   | 5      | ALMIS-specific county code.   |
| 9       | 1      | <space></space>   |
| 10 - 11 | 2      | Classification for area defined above.  |
| 12      | 1      | <space></space>   |
| 13 - 18 | 6      | NAICS code.   |
| 19      | 1      | <space></space>   |
| 20 - 23 | 4      | This may either represent a 4-digit year,<br>or a 2-digit year and 2-digit quarter<br>combined; however, no sub-field<br>definitions have been provided. The<br>quarter field is actually defined separately,<br>later in the record. |
| 24 - 25 | 2      | Month of the year.  |
| 26      | 1      | <space></space>   |
| 27      | 1      | Quarter for ALMIS data (1, 2, 3, or 4).   |
| 28      | 1      | <space></space>   |
| 29 - 36 | 8      | ALMIS employment.   |
| 37      | 1      | <space></space>   |
| 38      | 1      | ALMIS source code.  |
| 39      | 1      | <space></space>   |
| 40      | 1      | Ownership code (1, 2, 3, or 5).   |
| 41      | 1      | <space></space>   |
| 42      | 1      | Non-disclosure suppression indicator ('0'<br>= disclosable, '1' = non-disclosable).   |
| 43      | 1      | <space></space>   |

#### **Related Content**

- Import Text File (<u>ST</u> and <u>LT</u>)
  Import Spreadsheet (<u>ST</u> and <u>LT</u>)
- File Formats Introduction
  QCEW Data Extract Instructions

#### **Statistical and Technical Terms**

### **Actual Values**

Actual values are the available set of historical observations (values) for a time series. Measures of <u>Historical Fit</u>, such as the <u>R-Squared</u>, are based on the difference between model predicted values and actual values over the <u>Sample Period</u>. Forecast evaluation statistics, such as <u>Mean Absolute Percentage Error</u>, are based on the difference between projected values and actual values over the projection period. The smaller the <u>Residuals</u> are, the better the fit of a statistical model. Actual values associated with the final employment projections may not be available until you initiate the next round of projections.

### **Adjusted R-Squared**

The Adjusted R-Squared takes into account the <u>Number of Observations</u> and the number of variables used in estimating the "goodness of fit" of the model to the actual data. Unlike the <u>R-Squared</u>, the Adjusted R-Squared does not necessarily increase as additional variables are added to an equation. In fact, the Adjusted R-Squared will only increase when adding <u>Independent Variables</u> to the model if the additional explained variation in the dependent variable more than compensates for the loss of a degree of freedom when an Independent Variable is added. It is a particularly useful measure when comparing models that have a different number of Independent Variables or a different Number of Observations.

$$R_{adj}^2 = 1 - \left[\frac{(1-R^2)(n-1)}{n-k}\right]$$

Where n = number of time-series observations, and k = number of Independent Variables.

## **ARMA Models**

Time series approaches are distinguished by their reliance on past behavior of the *dependent variable* alone to project the most likely future path. The potential causal role of explanatory variables is disregarded; therefore, spurious regression relationships and inaccurate input projections will not contribute to *projection errors*. Data requirements are minimal because the **Employment Series** alone provides full information for time series model estimation and projections. The family of ARMA(p,q) time series models combine <u>autoregressive</u> and <u>moving average</u> components.

AR component: 
$$Y(t) = d_y + f_i y(t-1) + f_2 y(t-2) + e_y (t)$$
  
MA component:  $Y(t) = d_y + e_y (t) - g_1 e_y (t-1) - g_2 e_y (t-2)$ 

For example, an ARMA(1,1) process relies on the most recent past values of the dependent variable (p=1) and recent errors or disturbances (q=1) to describe the current observation of the dependent variable series.

 $Y(t) = d_y + f_1 y(t-1) + g_1 e_y (t-1) + e_y (t)$ 

An <u>Optimization Process</u> is used in select industry models to determine ARMA model parameters (f and g) that will minimize the <u>Sum of Squared Residuals</u> over the <u>Sample Period</u>.

ARMA model projections are constructed sequentially because each projection value depends on information from the preceding period. Statistical details relating to Sample Period (including <u>Coefficient Estimates</u>, <u>standard errors</u>, and <u>R-Squared</u>) and projection evaluation (projection values, projection errors, <u>Mean Absolute Percentage Error</u>) are presented in a comparable format to the <u>OLS model</u> output. The <u>Q-Statistic</u> is also presented to determine if any systematic pattern of the <u>Residuals</u> remains.

All of the ARMA Models in the system are estimated on monthly employment data which has been differenced once relative to the previous year. The system offers a variety of ARMA(p,q) models including ARMA(1,0), ARMA(2,0), ARMA(3,0), ARMA(0,1), ARMA(1,1), ARMA(2,1), ARMA(0,2), ARMA(1,2), and ARMA(2,2).

ARMA(1,0), ARMA(2,0) and ARMA(3,0) have an autoregressive component without a corresponding moving average component. ARMA(0,1) and ARMA(0,2) have moving average components, but no autoregressive ones.

## **Autoregressive Moving Average Method**

The most common Autoregressive (AR) Moving Average (MA) method is referred to as Box-Jenkins and is abbreviated as ARIMA. Project Single Region uses a variation of the ARIMA model known simply as ARMA, with no integrated term.

### **Autoregressive Process**

Auto-regression is a form of regression where the dependent variable is related to past values of itself at varying time lags. The number of past values is defined by the parameter ( $\rho$ ). Thus, an AR( $\rho$ ) process is generated as a weighted average of past observations. Each of these past observations is influenced, in turn, by its own history. Thus, the data series will exhibit an extended "memory" with characteristic periods of gradual adjustment. An autoregressive process will exhibit a greater degree of persistence than a Moving Average Process. For example, under an AR(1)

 $Y(t) = d_y + f_1 Y(t-1) + e_y(t)$ 

the most recent observation (Y(t-1)) will determine the expected difference between the current short run value and the long run trend or constant.

<u>Forecast Values</u> will follow a path of dynamic adjustment that eventually returns to long run expected values for the data series. AR(p) projections can be generated by selecting <u>ARMA Models</u> without a moving average component: ARMA(1,0), ARMA(2,0), ARMA(3,0).

# **BVAR Models**

The Bayesian Vector Auto-regression (BVAR) model resolves some of the difficult issues associated with standard VAR. In general, collinearity problems increase and <u>Degrees of Freedom</u> decline as the number of <u>Coefficient Estimates</u> grows. To facilitate estimation under these conditions we may elect to introduce prior information regarding the <u>VAR model's</u> many parameters. The BVAR framework relies on a mixed estimation procedure described by Theil and Goldberger (1960) which incorporates prior statistical estimates (or simply prior beliefs) on parameter means and variances.

Litterman (1981) proposed a set of prior beliefs for BVAR Models. The first lag of each equation's *dependent variable* has a mean of one while all other explanatory arguments are assigned means of zero. Prior variances allow some movement away from these values but the Bayesian priors are imposed with more "tightness" as lag length increases. The system employs prior variances suggested by Doan (1990) which are more relaxed than Litterman's. Hamilton (1994) provides a thorough review.

The STIP projections system provides a pre-defined family of BVAR Models with different sets of explanatory variables. "Indicators" refers to a preset model based on the set of <u>Leading Indicators</u> that you have already identified. The "Industries" option calls for a preset model based on <u>Related Industries</u>. Leading Indicators and Related Industries are combined to form the set of <u>Independent Variables</u> in the "Full" option. With the "User-Defined" option, you can define industry-specific BVAR models based on a more extensive set of explanatory variable combinations.

The VAR method can be plagued by overfitting, due to low Degrees of Freedom and the complexity of VAR model estimation. Also, high correlations across lagged variables in the VAR can produce serious multicollinearity problems. The BVAR answer to these possible problems with the unrestrained Vector Autoregression is to place prior restrictions on the coefficients. The coefficients are set at lag 1, and there is a restriction on how much they can change in subsequent lag periods. This approach lessens the possibility of overfitting, multicollinearity, and spurious coefficients that can produce unrealistic forecasts.

## **Calculate Projections**

Terms like "Year Differential Factor" and "Change Factor Differential" are descriptive labels. All formulas are assumed to be at the individual I/O cell level.

```
\begin{aligned} \mathbf{b} &= \text{Base Year Employment Estimate} \\ \mathbf{s} &= \text{Staffing Ratio} \\ \mathbf{i} &= \text{Industry Control Total} \\ \mathbf{b} &= \mathbf{s} \cdot \mathbf{i} \\ \mathbf{c} &= \text{CHG}\_\text{EST} \\ \mathbf{f} &= \text{Change Factor} \\ \mathbf{y} &= \text{Year Differential Factor} \\ c &= b \cdot \left( \left( (f-1) \cdot y \right) + 1 \right) \\ y &= d/10 \\ d &= Projected - Base Year Difference, i.e., 2028 - 2018 = 10 \end{aligned}
```

The timeframe adjustment is made because the change factors assume a tenyear projections period.

 $\begin{array}{l} p = \mbox{Projected Employment} \\ g = \mbox{Change Factor Differential} \\ k = \mbox{Sum of CHG}_E\mbox{ST for Industry} \\ j = \mbox{ICT Projected Employment} \end{array}$ 

 $\begin{array}{l} p = c \cdot g \\ g = j/k \end{array}$ 

## **Calculate Self Employed**

d - Difference between base and projected years

 $S_b - SE$  Base Year Ratio

 $S_p$  – SE Projected Year (10-Year) Ratio

n – National Basis Year of Ratios

b - Base Year

p - Projected Year

 $e_{bi}$  – Base year estimate of employment for one occupation across industries (excluding other SE occupational totals)

 $e_{pi}$  – Projected year employment for one occupation across all industries (excluding other SE occupational totals)

SE Base Year Estimate =  $[S_b + ((S_p - S_b)/10 \cdot (b - n)] \cdot e_{bl}$ SE Projected Year Estimate =  $[S_p + ((S_p - S_b)/10) \cdot (p - n)] \cdot e_{pi}$ 

## **Coefficient Estimates**

Coefficient Estimates are statistical estimates taken from a sample designed to approximate the true regression coefficients of the populations. The difference between estimated and true coefficients is the bias.

With <u>OLS Models</u>, Coefficient Estimates can be viewed as the slope and intercept of the "best fitting" linear relationship between the <u>independent</u> and the dependent variables. The slope can also be interpreted as the marginal effect of Independent Variable on the *dependent variable*. The intercept has no ready interpretation because it corresponds to the mean of the dependent variable when the Independent Variable is zero and captures the average effects of omitted variables.

Coefficient Estimates in Exponential Smoothing, <u>ARMA</u>, and <u>VAR</u> are somewhat less amenable to direct interpretation; however, estimates in these models do relate different types of past information as predictors of the dependent time series.

### **Correct for Serial Correlation**

When this option is selected, the dependent and independent variables are processed through the Hildreth-Lu algorithm to create a set of differenced series. The regression equation is modified by the Hildreth-Lu calculation result referred to as the Rho value. This is a number between zero and one.

#### **Degrees of Freedom**

Degrees of Freedom is the difference between the <u>Number of Observations</u> and the number of <u>Independent Variables</u> minus one. Statistical inferences tend to be more reliable when the Number of Observations is large relative to the number of inferences attempted. When evaluating a regression equation, for example, we subtract the number of <u>Coefficient Estimates</u> (k) from the Number of Observations (n) to obtain the Degrees of Freedom (n - k). This value is a meaningful component in determining the <u>Level of Significance</u> for associated statistical tests.

The addition of new variables in the projection model may increase the overall quality of the goodness of fit (<u>Adjusted R-Squared</u>), but would decrease the Degrees of Freedom. As the number of the Degrees of Freedom declines, the estimates tend to be less reliable.

## **Durbin-Watson Statistic**

A test statistic for first-degree autocorrelation; the condition of autocorrelation is present when current <u>Residuals</u> are not independent of past Residuals. In this case, the diagnostic statistics will tend to overstate reliability of the model. Projections will not be robust to changes in the end of the <u>Sample Period</u>; therefore, the results of projection evaluation activities are likely to be misleading.

The Durbin-Watson Statistic ranges from 0 to 4. A value significantly different from 2 indicates that the Residuals from an estimated regression equation are not independent over time. A test statistic value that approaches 2 suggests the absence of a first-order autocorrelation. A DW statistic < 1.5 indicates significant positive correlation. A DW statistic > 2.5 indicates significant negative correlation.

# ETA

The Employment & Training Administration (ETA) is part of the U.S. Department of Labor. Its mission is to provide training, employment, labor market information, and income maintenance services.

# **Exponential Smoothing**

Exponential Smoothing is a trend technique that reduces the short-term volatility of the series (see <u>Trend Models</u>). Exponential Smoothing is a trend technique that reduces the short-term volatility of the series (See *Trend Models*). The new series is obtained as a weighted average of current and previous values with geometrically declining weights in a smoothing method. The more recent values receive greater weight.

Exponential Smoothing uses an adaptive trend approach to projecting in which the model's parameters are updated explicitly throughout the <u>Sample Period</u>. Initial settings for the smoothed level (S), trend (T), and seasonal (I) components are taken from the linear trend model estimates. The three components are adjusted with each successive observation in response to the difference between the one step ahead prediction (Y(t+1)) and the actual value.

$$\begin{aligned} alpha &= \mu \\ delta &= D \\ gamma &= g \\ Y (t+1) &= S (t) + I (t+1-1) \\ S (t) &= S(t-1) + T (t-1) + \mu \cdot e (t) \\ T (t) &= T (t-1) + \mu \cdot g \cdot e (t) \\ I (t) + I (t-12) + (1-\mu) \cdot D \cdot e (t) \end{aligned}$$

Smoothing parameters (alpha, gamma, and delta) determine the degree to which the level, trend, and seasonal components adapt to new information. Parameter values range from zero to one. Low values describe a path, which is unresponsive to the latest observation. The <u>Random Walk</u> model represents a special case where the parameter for level equals 1 and the parameters for trend and seasonal equal 0.

The system provides estimates for the smoothing parameters. The <u>Optimization</u> <u>Process</u> searches over values from 0.1 to 0.9 for all three parameters to identify the combination that minimizes the <u>sum of squared Residuals</u>.

### **F-Statistic**

The F-Statistic is computed to test the hypothesis that the regression equation has at least one nonzero coefficient. Thus, it tests for the overall goodness-of-fit of an equation. The F-Statistic is represented by the ratio of the explained sum of squares to the residual sum of squares, adjusted for the number of <u>Independent Variables</u> and the <u>Number of Observations</u> in the sample.

The following steps are necessary to perform an F-test:

- 1. Estimate forecasting model and obtain the coefficients to be tested.
- 2. Compute F-Statistics, Fc.
- 3. Determine the <u>Degrees of Freedom</u>.
- Derive a critical value for the F-Statistic, F\*, considering the chosen <u>Level of</u> <u>Significance</u> and the Degrees of Freedom. As a general rule, the significance level should be .05 or less.
- 5. Set and test the null (Ho= each of the regression coefficients is equal to zero and alternative (Ha= at least one of the regression coefficients is nonzero)) hypotheses:

Decision Rule:

- 1. If Fc is greater than F\*, then the null hypothesis is rejected. Under this condition, at least one of the regression coefficients is statistically significant from zero and the model surpasses the goodness-of-fit test.
- 2. If the null hypothesis cannot be rejected (Fc is less than F\*), then each of the regression coefficients is equal to zero. The model fails to surpass the goodness-of-fit test.

## **Fitted Values**

Fitted Values represent values for the dependent variable over the historical <u>Sample</u> <u>Period</u> which are implied (predicted) by the statistical model. Fitted Values are obtained by applying the <u>Coefficient Estimates</u> to the set of <u>Independent Variables</u>.

### **Forecast Errors**

Forecast Errors are the difference between <u>Forecast Values</u> and <u>actual values</u> for the *dependent variable* over the <u>Forecast Period</u>. One of the primary criteria in selecting a forecasting model is to minimize Forecast Errors. An experimental Forecast Period can be defined that begins within the range of historical data to provide an evaluation of alternative models based on forecast performance. Inspection of individual Forecast Errors, calculation of summary measures (such as <u>Mean Absolute Percentage Error</u>), and viewing Forecast Values against actual values in a graph are all useful exercises for this purpose. The model with smaller forecasts errors would be a better forecasting model. However, Forecast Errors cannot be determined when the entire Forecast Period is beyond the range of available historical data.

Forecast Values for <u>VAR</u> models must be derived one period at a time to provide the required Lagged Values of the dependent variable. With Trend Models and <u>ARMA</u> models, Forecast Values represent an extended pattern of univariate time series behavior. Trend forecasts are deterministic in the sense that they do not respond to information revealed during the Forecast Period. In contrast, ARMA forecasts must be derived one-step at a time to incorporate early Forecast Errors in constructing Forecast Values for subsequent periods.

## **Forecast Period**

The Forecast Period is the period of time over which <u>Forecast Values</u> are produced. The Forecast Period includes the eight quarters immediately following the end of specified <u>Sample Period</u>. Historical <u>observations</u> for evaluation of <u>Forecast</u> <u>Errors</u> will be available if the Forecast Period begins within the range of available data; however, final employment forecasts extend eight quarters past the last available historical observation (see Step 1, Step 2, Step 3). The Forecast Period is the frame of reference for all of the information presented in the "results" section of select industry forecasts.

### **Forecast Values**

Typically, Forecast Values represent values for the dependent variable over the <u>Forecast Period</u>, which are implied (predicted) by the statistical model. With <u>OLS</u> <u>Models</u>, Forecast Values are obtained by applying the <u>Coefficient Estimates</u> to the associated set of <u>Independent Variables</u>. <u>Independent Variable Forecasts</u> are required when the Forecast Period extends beyond the range of available historical data. <u>Forecast Errors</u> can only be calculated when the Forecast Period begins within the range of available historical data.

Forecast Values for <u>VAR Models</u> must be derived one period at a time to provide the required <u>Lagged Values</u> of the dependent variable. With <u>Trend Models</u> and <u>ARMA</u> <u>Models</u>, Forecast Values represent an extended pattern of univariate time series behavior. Trend forecasts are "deterministic" in the sense that they do not respond to information revealed during the Forecast Period. In contrast, ARMA forecasts must be derived one-step at a time to incorporate early *Forecast Errors* in constructing Forecast Values for subsequent periods.

# **Granger Causality**

Correlation between two variables is a statistical relationship, which does not necessarily indicate a meaningful behavioral relationship, that is, causation. For example, a finding that weekly birth rates in coastal villages are correlated with the arrival of migrating storks does not prove that storks bring (or cause) babies.

Granger Causality is a technique for determining whether one time series is useful in forecasting another. Typically, regressions simply reflect correlations, or associations. A time series is said to "Granger-cause" another time series, if the

<u>Lagged Values</u> provide statistically significant information on the future value of a second time series. The test for statistical significance is the <u>F-statistic</u>. However, Granger Causality is not sufficient to prove a causal relationship between two variables.

The predictive contribution of each <u>Independent Variable</u> is assessed in all <u>VAR Models</u> and <u>BVAR Models</u> using the Sims alternative form of Granger Causality test. The "unrestricted" vector <u>Autoregression</u> is performed with the entire set of explanatory variables, including Lagged Values of employment and all Independent Variable. Lagged Values of one Independent Variable are excluded when forming the "restricted" equation. An F-statistic compares the residual sum of squares from each equation to determine if the restricted form has significantly less explanatory power. If so, then past values of the excluded variable contribute to the explanation of current employment. The reported test statistic has <u>Degrees of Freedom</u> equal to the <u>Number</u> <u>of Observations</u> divided by the difference between observations and Independent Variable in the unrestricted equation.

#### **Growth Rate Calculation**

Short Term Industry Projections: Growth Rate Calculation and Display.

| Module               | Year-Over-Year Growth | Compounded Annual Growth |
|----------------------|-----------------------|--------------------------|
| Pre-projections      | Quarterly             | 24 months                |
| Preview Employment   |                       |                          |
| Pre-projections      |                       | 24 months                |
| Preview Variables    |                       |                          |
| Projections          |                       | Eight quarters           |
| Leading Index        |                       |                          |
| Projections          |                       |                          |
| Single Region        |                       |                          |
| Projections          |                       | Eight quarters           |
| Multiple Regions     |                       |                          |
| Analyze Industry Tab |                       |                          |
| Projections          |                       | Eight quarters           |
| Multiple Regions     |                       |                          |
| Area View Tab        |                       |                          |
| Projections          |                       | Eight quarters           |
| View Projections     |                       |                          |
| Output               |                       | Eight quarters           |
| Final Reports        |                       |                          |

Figure 1: Growth Rate Calculations

# **Historical Fit**

The Adjusted R-Squared is a measure of the goodness of fit with each regression equation. Intuitively, in the Leading Index module of STIP, this refers to the proportion of total variation in state employment, which can be explained by each set of <u>Leading</u> <u>Indicators</u>. Historical Fit is displayed for each indicator variable individually and in combination with others. Separate <u>OLS regressions</u> are evaluated for each row of information using the two- and four-period equations.

### **Import Models**

Import models work best for import oriented industries. Import oriented industries are industries that do not have enough workers in the area compared with other areas. Workers are coming into the area to find work.

Import models use the Vocational Quotient:

% of workers in an industry in an area

% of workers in an industry in the nation

When the Vocational Quotient for the industry is below 1.2, it is considered an import oriented industry.

## **Export Models**

Export models work best for export oriented industries. Export oriented industries are industries that have a surplus of workers in the area compared with other areas. Workers are leaving the area to find work.

Export models use the Vocational Quotient:

% of workers in an industry in an area

% of workers in an industry in the nation

When the Vocational Quotient for the industry is above 1.2, it is considered an export oriented industry.

#### **Independent Variable**

An independent (or explanatory variable) is one whose values are determined outside the system being modeled. In the <u>OLS model</u>, Independent Variables are used in an implied causal relationship to explain and predict the values of a dependent

variable. The choice of Independent Variables is usually based on economic theory, past experience, or intuitive judgment.

Consider the proposition that monthly ice cream sales (measured in scoops sold) at Rosie's Ice Cream Parlor are influenced by the average monthly temperature, the price per scoop, the number of flavors, monthly ticket sales at the nearby movie theater, and Rosie's advertising budget. In a regression equation to explain or predict ice cream sales, "monthly scoops" constitutes the dependent variable while all of the potential influences would be Independent Variables. These "explanatory variables" appear on the right hand side in a conventional *OLS model*. In the short-term forecasts system, <u>OLS models</u> can include Leading Indicators, <u>Related Industries</u>, or a user-selected combination of Independent Variables.

## **Independent Variable Forecast**

The traditional practice of forecasting with <u>OLS models</u> requires <u>Forecast Period</u> values for all explanatory variable series. These Independent Variable forecasts can be taken from external sources as a user-defined option.

A problem arises in that final industry employment forecasts depend on Independent Variable Forecasts while the within-sample industry employment forecast experiments are based on actual data. For OLS models that are sensitive to the accuracy of explanatory variables the forecast evaluation statistics promote a misleading sense of confidence. Independent Variable Forecasts cannot be as accurate as the actual data; however, this source of error is not revealed in the experiments, which inform model selection.

The system generates Independent Variable Forecasts internally. This improves the reliability of forecast evaluation and reduces data requirements. Internal forecasts for each explanatory variable are produced by a second order <u>VAR model</u>, which includes industry employment and the user-defined set of explanatory variables.

## **Lagged Values**

Instantaneous relationships between dependent and <u>Independent Variables</u> do not exist in all economic situations. Therefore, it is frequently useful in time-series forecasting to allow for the possibility that the dependent variable is related to Lagged Values of itself or other variables. The lag is the number of time periods by which the lagged variable is offset from the variable being forecast. This is particularly important when the units of time are small, such as months.

<u>Leading Indicators</u> are chosen based on their contribution to prediction of future employment. Therefore, past values (Lagged Values) of indicator variable series should serve as a useful source of information on current employment. *VAR Models* are based on this assumption. Lagged Values of the dependent variable series influence current employment movements in <u>ARMA, VAR</u> and <u>BVAR models</u>.

## **Leading Indicators**

The basic goal of the leading indicator exercise is to identify a small but effective set of explanatory variables that serve as state-specific predictors of future employment changes. These indicator variables will be used extensively in the formation of industry forecasting models.

Quarterly data is employed in all of the identify Leading Indicators analysis. Two and four quarter leading relationships are explored between the current values of potential explanatory variables and future statewide employment. <u>OLS Models</u> are estimated with each indicator separately and in combination with others. Summary measures of <u>Historical Fit</u> and <u>Turning Point Accuracy</u> throughout the <u>Sample Period</u> are presented. Relative individual performance as well as combined effectiveness should be used to determine candidates for inclusion.

# Level of Significance

Level of Significance is designated by the Greek letter "alpha" and is sometimes called the level of risk because it is the risk one takes of rejecting the null hypothesis when it is really true. It measures the amount of Type I error (rejecting a true null hypothesis) implied by a particular critical value.

# **Linear Trend**

Linear Trend fits a least squares, or <u>OLS</u>, regression line to the data. This becomes the trend line you are going to use in forecasting. The Linear Trend also models seasonality. It takes into account what the impact of the change in seasons from month to month has on historical data. You will utilize regression to forecast the future and

apply standard statistical diagnostics to the variable coefficients, such as standard errors, t-statistics, and t-probabilities, to evaluate the model.

# Log Likelihood

The joint probability density function of <u>actual values</u> expressed in terms of model parameters is called the likelihood function. Log Likelihood refers to the value taken by the likelihood function for a particular set of parameter values. The reported Log Likelihood value for a given model is associated with the set of reported <u>Coefficient</u> <u>Estimates</u>.

Likelihood ratio tests offer a convenient method for evaluation of alternative model specifications that can be expressed in terms of parameter restrictions. The test statistic is based on relative Log Likelihood values between restricted and unrestricted versions of the model.

Throughout the short term industry forecasts system Coefficient Estimates are selected that minimize the <u>Sum of Squared Residuals</u>. In most cases this objective is equivalent to maximum likelihood estimation.

# Long Run Drift

Adding a constant linear trend to a <u>Random Walk</u> process produces a Random Walk with drift. Forecasts based on this specification will follow a long term trend (d) with the most recent observation Y(t-1) as a starting point.

$$Y\left(t\right) = Y\left(t-1\right) + d + e\left(t\right)$$

Substitution of the industry employment growth pattern from long term forecasts yields a meaningful combination of short term information and long term analysis.

### Mean Absolute Percentage Error (MAPE)

Mean Absolute Percentage Errors is a summary measure of forecast error. This forecast evaluation statistic is based on the difference between predicted values and

<u>actual values</u> over the <u>Forecast Period</u>. The smaller the MAPE value, the better the forecasting model.

In the STIP system, MAPE is estimated for a forecast horizon from a three-step calculation:

- 1. The forecast error in each quarter of the forecast horizon is expressed as a percentage
- 2. Each percentage is converted to an absolute value; and,
- 3. An arithmetic mean is derived from the quarterly absolute values.

MAPE is displayed in the Project Single Region module and is useful in the evaluation of alternative forecast models. MAPE also appears in the View Past Performance module to provide a standardized evaluation of the preceding round's employment forecasts with more recent employment patterns.

### Mean of Zero

This set of assumptions, if applied strictly, would define each seasonally differenced time series as a <u>Random Walk</u>. An ARMA(1,0) model requires that the first estimated coefficient be less than one. The other parameters in a standard <u>VAR model</u> may not be equal to zero.

### **Mix Method**

Mix forecast that reflects a performance-weighted combination of the <u>univariate</u> and <u>multivariate</u> models.

## **Mix Models**

Alternative forecasting approaches offer different insights to future patterns of employment growth. Mix Models combine information from a variety of methods to form a consensus forecast. In the system you are provided with a performance-weighted mix based on five different types of models.

Mix model forecasts are a weighted average of forecasts from other models. The weights applied to each of the displayed models are calculated using relative values of the <u>Mean Absolute Percentage Error</u> (MAPE). Mix model weights are updated as you conduct experiments with different <u>Sample Periods</u>.

Weights in Step 1 reflect a full eight quarters of forecast evaluation. The same models are re-estimated in Step 2 using a Sample Period with additional recent observations (see Step 1, Step 2, Step 3). However, MAPE values in Step 2 are based on only four quarters of information on Forecast Errors. Mix model weights from Step 1 are updated with the new set of relative MAPE outcomes. The resulting mix model weights combine two parts of Step 1 performance with one part of Step 2 performance. In Step 3, we do not produce Forecast Errors to update the weights again. The mix model forecasts in Step 3 are based on the same weights that were employed in Step 2.

#### Monthly, Quarterly, Annual

All data series provided to the system must be available on a monthly basis and should be entered without Seasonal Adjustments. The industry employment series and outlook variable series preview modules offer data exploration and editing features for monthly data. The statistical procedures for short term industry forecasts require monthly data to maximize <u>Degrees of Freedom</u>. Monthly observations of data series in annually differenced form are used in many of the estimation procedures to control for seasonal elements (see Seasonal Adjustment).

For presentation purposes, all of the modules related to industry employment forecasts (report card of past performance, select forecasting models, and view industry forecasts) display quarterly outcomes. Implied annual growth rates over the eight quarter <u>Forecast Period</u> are also reported. Quarterly averages are employed throughout the identify <u>Leading Indicators</u> exercise. All of the required data transformations have been automated.

## **Moving Average Process**

Moving Average Process is a form of regression where a dependent variable is associated with the past values of the error term (residual). In a moving average, as each new observation becomes available, a new average is computed that includes the most recently observed value and excludes the oldest value previously used. Under  $d_y^{A}$  Moving Average Process, each observation deviates from a time-invariant mean (<sup>a</sup>) by a weighted average of past errors or disturbances. An MA(q) process will exhibit a "memory" of q periods as opposed to the greater degree of persistence in an <u>autoregressive process</u>. The subtraction operation in the MA equation connotes a decay effect between the current period and the q prior periods. With an MA(2) process, for example,

$$Y(t) = d_y + e_y(t) - g_1 e_y(t-1) - g_2 e_y(t-2)$$

the current value of the Y time series is influenced by the errors (<u>Residuals</u>) from the present (t) and each of the two prior periods (t-1 and t-2). The moving average model parameters ( $g_1$  and  $g_2$ ) may assume either a positive or negative value. The "memory" of the MA(2) stochastic process is two periods.

$$Y(t) = d_y + e_y(t) - g_1 e_y(t-1)$$

With an MA(1) process, the one period ahead forecast will be influenced by the errors (Residuals) from the present (t) and most recent past (t-1); however, <u>Forecast Values</u> will quickly tend to the constant series mean. MA(q) forecasts can be generated by selecting <u>ARMA Models</u> without an autoregressive component: ARMA(0,1), ARMA(0,2).

#### **Multivariate Methods**

The multivariate regression method gives you a basis to explain what has happened in the past and to show what forces drive jobs in different industries in a particular state or region. It also allows you to create *what if* simulations about the past and the future.

Models you can use are:

- <u>OLS</u>
- VAR
- BVAR

# NAICS

The North American Industry Classification Systems (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the United States' business economy.

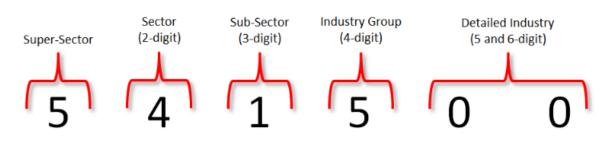


Figure 1: NAICS code designations

View the NAICS Manual (links to census.gov) for additional information on the system.

## **Nonlinear Function**

A nonlinear function has a slope that changes value when its dependent variable changes (i.e., the slope is not constant). This describes <u>ARMA</u> models with moving average terms as well as <u>Exponential Smoothing</u>.

#### **Number of Observations**

In most forecasting models, the Number of Observations is simply the total number of monthly values in the <u>Sample Period</u>. In those models that include <u>Lagged Values</u> (<u>ARMA</u>, <u>VAR</u> and <u>BVAR</u>), we lose a few of the sample observations to construct the explanatory variable series. In these cases, the Number of Observations reported will be less than the full Sample Period. The Number of Observations is displayed in "details" reports to help you determine <u>Degrees of Freedom</u> associated with statistical tests.

## **Occupational Separations**

The separation methodology differs from the replacements methodology in that it incorporates the projections results. While replacement needs were calculated using only base year data for each occupation, separations require both base year and projected year data. That means separations cannot be calculated until occupational projections are finalized.

To calculate separations, the rates are applied to the midpoint of base and projected employment:

$$\operatorname{Emp}_{mid} = \frac{Emp_{base} + Emp_{proj}}{2}$$

The calculation of midpoint employment is the same regardless of the projections length: 10, 9, or 2 year projections.

Once midpoint employment is calculated, annual average separations are simply the product of midpoint employment and the rate:

Occupational Transfers =  $Emp_{mid} \cdot OTRATE$ 

Labor Force Exits =  $Emp_{mid} \cdot LFRATE$ 

Occupational Separations = Occupational Transfers + Labor Force Exits

Once occupational separations have been calculated, they can be used to calculate annual openings. Separations differ from replacement needs in that they do not take into account declines in occupational employment, so while annual openings used to be calculated using different methods for declining versus growing occupations, there is a single calculation for all occupations:

Annual Average Openings = Annual Average Separations + Annual Average Employment

# **OLS Correction for Serial Correlation**

The <u>Ordinary Least Squares (OLS) model</u> uses a set of predictor variables to "explain" a single predicted variable. In the Short-Term Industry Projections (STIP) software, the range of predictor variables includes economic indicators, <u>Related Industries</u>, or a combination of both indicators and Related Industries. The single predicted variable in STIP is employment in an industry.

OLS models can produce unbiased results when a pattern emerges in the residual term. This pattern is described as a serial correlation of the errors and occurs when the predicted value for employment in an industry systematically overestimates or underestimates the actual employment value in the historical series. The <u>Durbin-Watson Statistic</u> is a summary measure for serial correlation in the STIP software. A value that approximates 2 indicates the relative absence of serial correlation; thus, successive error terms (the difference between the predicted and <u>actual values</u> for industry employment) are randomly distributed. A lower value for the Durbin-Watson Statistic, especially below 1.5, suggests the presence of positive serial correlation: successive error terms are close in value to one another. A higher value for the Durbin-Watson Statistic, especially above 2.5, suggests the presence of negative serial correlation: successive error terms are much different in value to one another.

Several statistical approaches exist to reduce the severity of serial correlation in OLS Models to enhance forecast reliability. Short Term Industry Projections uses a modification of Cochrane-Orcutt, while Long Term Industry Projections uses a modified combination of Cochrane-Orcutt and Hildreth-Lu. In brief, this approach adjusts the OLS model to include the unexplained error.

These are the steps.

1. Calculates an error adjustment weight based on the Durbin-Watson Statistic (weight = (1 - (DW Stat/2)).

2. Uses a form of quasi-differencing between the original OLS equation and an equation whereby the error weight is applied to the prior period value of each variable. The OLS routine is run against the quasi-differenced equation to yield an array of fitted industry employment values for the predicted variable that have been adjusted for serial correlation (IND238(t)\*\*).

3. Computes the OLS model using the original predictor variables and an adjusted industry employment variable (IND238(t)\*\*) that captures some

magnitude of the initial serial correlation. The forecasts for industry employment from Step 3 should reflect an improvement in the Durbin-Watson Statistic. To the extent that the coefficients for the initial predictor variables are statistically non-significant, then the OLS assumes the properties of a first order moving average model (MA(1)).

#### Step 1

#### **Equation 1**

$$IND238_{(t)} = C + \beta_1 X_{1(t)} + \beta_2 X_{2(t)} + \cup_{(t)}$$

where:

 $X_1 = interest \ rate \ spread$  $X_2 = money \ supply$  $\cup = unexplained \ error$ where:

 $\bigcup_{(t)} = \beta_3 \cup_{(t-1)} \\ \beta_3 = 1 - (DWStat/2)$ 

Run OLS on Equation 1 to generate the Durbin-Watson Statistic for estimation of  $\beta_3$ .

#### **Equation 2**

 $IND238_{(t-1)} = C + \beta_1 X_{1(t-1)} + \cup_{(t-1)}$ 

#### Step 2

**Equation 3 (quasi-differenced)**: multiply Equation 2 by  $\beta_3$  and subtract from Equation 1.

 $\begin{array}{l} (IND238_{(t)} - \beta_3 IND238_{(t-1)}) = (1 - \beta_3)C + \beta_1 (X_{1(t)} - (\beta_3 X_{1(t-1)}) + \beta_2 (X_{2(t)} - (\beta_3 X_{2(t-1)}))) \end{array}$ 

#### Run OLS on Equation 3.

Save fitted and forecasted values from quasi-differenced variables.

Convert fitted and forecasted values back to original format.

$$IND238_{(t)} * * = (IND238_{(t)} - \beta_3 IND238_{(t-1)}) + \beta_3 IND238_{(t-1)}$$

#### Step 3 Equation 4 $IND238_{(t)} = C + \beta_1 X_{1(t)} + \beta_2 X_{2(t)} + \beta_4 IND238_{(t)} * *$

Run OLS on Equation 4 (includes correction for serial correlation) to estimate summary statistical results and detailed statistical results for each variable. These results can be compared to those estimated on the basis of Equation 1.

## **OLS Models**

Ordinary Least Squares (OLS) regression generates <u>Coefficient Estimates</u> which minimize the <u>sum of squared Residuals</u> throughout the <u>Sample Period</u>. Because <u>Residuals</u> are the differences between the actual and the estimated values of the dependent variable, it would be true to say that OLS procedure minimizes these summed squared differences. Thus, the estimated model provides the best linear unbiased estimate or prediction of the historical series of dependent variable.

Single equation OLS regression, used extensively in the development of long term employment forecasts, is also an option for short term analysis. The primary appeal of this method involves intuitive interpretation of results. Observed changes in the dependent variable (Y) over time are attributed, through a linear relationship,

$$Y(t) = b_0 + b_1 x_1(t) + b_2 x_2(t) + b_3 x_3(t) + e_y(t)$$

to the behavior of explanatory variables  $(X_1, X_2, X_3)$  and purely random disturbances. The OLS regression procedure generates Coefficient Estimates, which minimize the sum of squared Residuals throughout the Sample Period. Thus, the estimated model provides the best linear prediction of the historical employment series.

Reliability of the estimated model over the Sample Period can be evaluated with the assistance of several diagnostic statistics (or "details"). These provide information on the estimated coefficients of the model (t-statistics, <u>standard errors</u>), <u>Historical Fit</u> (<u>R-Squared</u>), and autocorrelation of Residuals (<u>Durbin-Watson</u> statistic).

Employment forecasts are related to <u>Forecast Period</u> values of the <u>Independent</u> <u>Variables</u>. To the extent that explanatory variables are common across industry models, the <u>Independent Variable Forecasts</u> may constitute a shared scenario for interpretation. You can restrict the Sample Period to define a Forecast Period, which includes some actual employment values. In this case, <u>Forecast Errors</u> and the <u>Mean</u> <u>Absolute Percentage Error</u> are displayed for the purpose of forecast evaluation.

The forecasting system provides a family of OLS Models with different sets of explanatory variables. "Indicators" refers to a preset regression model based on the set of <u>Leading Indicators</u> that you have already identified. The "Industries" option calls for a preset regression model based on <u>Related Industries</u>. Leading Indicators and Related Industries are combined to form the set of Independent Variables in the "full" option. With the "User" option you can define industry-specific OLS Models based on a more extensive set of explanatory variable combinations.

OLS is based on several assumptions regarding the Residuals (errors):

- 1. The average value equals zero.
- 2. They are independent of each other (not correlated).
- 3. Their variance is constant, which means that their standard deviation is zero.
- 4. They are normally distributed.

## **Optimization Process**

The goal is to identify <u>Coefficient Estimates</u> that minimize the <u>Sum of Squared</u> <u>Residuals</u>. When the solution to this problem is linear in the model parameters, we can develop equations that yield a unique solution. Where the solution is nonlinear in parameters, an alternative solution process is required. A variety of numerical optimization approaches that could be applied are described by Hamilton (1994). In general, all of these procedures involve a search for parameter values that work best. Different combinations are considered, the resulting model predictions are calculated, and objective function values are compared. Prohibitive computational requirements of an exhaustive search represent a fundamental challenge.

Consider the search for a fugitive in which trained bloodhounds are released in a likely location. The hounds sniff for a strong scent to establish a search direction and follow the fugitive's trail as long as the scent grows stronger. An experienced trainer (or a wise old dog) will pause frequently to identify and respond to changes in direction. Our sequential search process works in much the same way. From a given starting position, we evaluate partial derivatives of the objective function to determine the best direction for search. That is, we identify the combination of very small parameter changes that is most effective in reducing <u>Residuals</u>. The search moves a limited number of steps in that direction as long as the Sum of Squared Residuals continues to decline. We pause

frequently to reevaluate partial derivatives and continue the process until all potential gains from search are exhausted.

Starting values matter. If you release the dogs in the wrong neighborhood, it will take a long time before they corner the fugitive. Bloodhounds have also been known to follow a trail left by a person or creature that is not the fugitive. Search procedures may be prone to find local solutions that are not global solutions. It is usually advisable to experiment with alternative starting values. We begin with a grid search for this purpose. For starting <u>ARMA</u> estimates the routine searches across the full range of legitimate parameter combinations with refined precision near zero to account for scaling differences. A second pass applies a finer grid to establish precise starting values. The sequential Optimization Process, which follows, is not restricted by the initial grid pattern but begins with reasonable assurance that all "neighborhoods" have been investigated.

## **P-Value and the Test for Significance**

The significance test can be carried out using a p-value approach. P-value is the probability of obtaining a value of the t-statistic at least as large in absolute value as the one actually obtained. A low p-value means a small probability of Type I error (rejecting a true hypothesis). A high value of p means a large probability of Type I error.

The following steps are necessary to test hypotheses using p-value(s):

- 1. Estimate a regression equation.
- 2. Specify a <u>Level of Significance</u> (e. g. a = 0.05; 0.01). As a general rule, the significance level should be .05 or less.
- 3. Calculate p-value(s).
- 4. Set and test the null (Ho= p-value is greater than the selected significance level) and alternative (Ha= p-value is less than the selected significance level) hypotheses.

Decision rule:

1. If the p-value is less than the selected significance level, then the null hypothesis is rejected. Under this condition, the tested coefficient is statistically significant.

2. If the null hypothesis cannot be rejected (p-value is less than the selected significance level), then the tested coefficient is not statistically significant.

The p-value method is equivalent to the t-test for the significance of the individual explanatory variables. The p-value approach may also be used to test for the overall significance of a regression model. A different p-value would be used.

### **Pre-Projections - Preview Employment**

1. Compounded annual growth rate for industry (j)

$$= ROUND \left( \left( \left( \left( \frac{X_{i(t)}}{X_{i(t-24)}} \right) \frac{1}{2} \right) - 1 \right) \cdot 100 \right), 2 \right)$$

Where:

 $X_i(t) =$  Employment level for industry (j) at month (t)  $X_{i(t-24)} =$  Employment level for industry (j) at month (t-24) Exponent  $\frac{1}{2}$  = denominator represents the span of years

#### **Pre-projections - Preview Variables**

1. Compounded annual growth rate for variable (j)

$$= ROUND((((\frac{X_{i(t)}}{X_{i(t-8)}})\frac{1}{2}) - 1) \cdot 100), 2)$$

Where:

 $X_i(t) =$  Employment level for variable (j) at month (t)  $X_{i(t-24)} =$  Employment level for variable (j) at month (t-24) Exponent  $\frac{1}{2}$  = denominator represents the span of years

The compounded annual growth rate (2 year) is used in the place of the year-over-year growth rate because the project single region and multiple region forecast results are reported as the former. The use of the compounded formula establishes consistency between the diagnostic work done by the analyst in the pre-projections module (both the employment and variables) and the analyst decision on selection of a projection in the single region and multiple region modules.

The implementation of the compounded formula in STIP also establishes consistency with the LTIP, which uses a compounded rate in its projections results. The importance of the consistent measurement of projections between the LTIP and the STIP is heightened as users often compare the sets of results and, moreover, the results are

used in the Occupational Projections software, i.e., users often compare the occupational employment projections for the two horizons.

#### Projections - Leading Index

1. Year-over-year quarterly growth rate for industry (j) for actual

$$= ROUND \left( \left( \left( \left( \frac{X_{i(t)}}{X_{i(t-4)}} \right) \frac{1}{1} \right) - 1 \right) \cdot 100 \right), 2 \right)$$

Where:

 $X_i(t) = \text{Actual employment level for industry (j) at quarter (t)}$  $X_{i(t-24)} = \text{Actual employment level for industry (j) at quarter (t-4)}$ Exponent  $\frac{1}{1}$  = denominator represents the span of years

2. Year-over-year quarterly growth rate for industry (j) for 2Q lead

$$= ROUND \left( \left( \left( \left( \frac{X_{i(t)}}{X_{i(t-4)}} \right) \frac{1}{1} \right) - 1 \right) \cdot 100 \right), 2 \right)$$

Where:

 $X_{i(t)} = 2Q$  lead employment level for industry (j) at quarter (t)  $X_{i(t-4)} = 2Q$  lead employment level for industry (j) at quarter (t-4) Exponent  $\frac{1}{1}$  = denominator represents the span of years

3. Year-over-year quarterly growth rate for industry (j) for 4Q lead

$$= ROUND \left( \left( \left( \left( \frac{X_{i(t)}}{X_{i(t-4)}} \right) \frac{1}{1} \right) - 1 \right) \cdot 100 \right), 2 \right)$$

#### Where:

 $X_{i(t)} = 4$ Q lead employment level for industry (j) at quarter (t)  $X_{i(t-4)} = 4$ Q lead employment level for industry (j) at quarter (t-4) Exponent  $\frac{1}{1}$  = denominator represents the span of years

The Leading Index module uses a year-over-year quarterly growth rate formula and not a 2-year compounded annual growth, as is the case in every other STIP module. The calculation of the Leading Index occurs in the C-library and its algorithms, including the determination of turning points, are predicated on year-over-year estimation. The changes in the other modules dealt with the display of the forecast results. If the display in the Leading Index is changed, then the designation of turning points (that occur within the C-library based on the year-over-year estimation) would not be consistent with the display of turning points (two-year compounded growth).

#### **Project Single Region - Results tab**

1. Compounded annual growth rate for industry (j)

$$= ROUND \left( \left( \left( \left( \frac{X_{i(t)}}{X_{i(t-8)}} \right) \frac{1}{2} \right) - 1 \right) \cdot 100 \right), 2 \right)$$

#### Where:

 $X_{i(t)}$  = Final projected employment level for industry (j) at quarter (t)  $X_{i(t-8)}$  = Final actual employment level for industry (j) at quarter (t-8) Exponent  $\frac{1}{2}$  = denominator represents the span of years

#### Project Multiple Regions - Analyze Industry tab

1. Compounded annual growth rate for industry (j) in areas (m, n, o, ...) by quarter

$$= ROUND \left( \left( \left( \left( \frac{X_{i(t)}}{X_{i(t-8)}} \right) \frac{1}{2} \right) - 1 \right) \cdot 100 \right), 2 \right)$$

#### Where:

 $X_{i(t)}$  = Final projected employment level for industry (j) at quarter (t)  $X_{i(t-8)}$  = Final actual employment level for industry (j) at quarter (t-8) Exponent  $\frac{1}{2}$  = denominator represents the span of years

#### **Project Multiple Regions - Area View tab**

1. Compounded annual growth rate for industry (j, k, l, ...) in area (m) by quarter

$$= ROUND \left( \left( \left( \left( \frac{X_{i(t)}}{X_{i(t-8)}} \right) \frac{1}{2} \right) - 1 \right) \cdot 100 \right), 2 \right)$$

#### Where:

 $X_{i(t)}$  = Final projected employment level for industry (j) at quarter (t)  $X_{i(t-8)}$  = Final actual employment level for industry (j) at quarter (t-8) Exponent  $\frac{1}{2}$  = denominator represents the span of years

The average annual growth rate was replaced by the compounded annual growth rate (2 year) in both the project single region and multiple region forecast results. The use of the compounded formula establishes consistency between the diagnostic work done by the analyst in the pre-projections module and the analyst decision on selection of a projection in the single region and multiple region modules.

## **Projections - View Projections** (Statewide and Sub-state Areas)

1. Compounded annual growth rate for industry ( j )

$$= ROUND((((\frac{X_{i(t)}}{X_{i(t-8)}})\frac{1}{2}) - 1) \cdot 100), 2)$$

Where:

 $X_{i(t)}$  = Final projected employment level for industry (j) at quarter (t)  $X_{i(t-8)}$  = Final actual employment level for industry (j) at quarter (t-8) Exponent  $\frac{1}{2}$  = denominator represents the span of years

The compounded annual growth rate (2 year) is used in the place of the year-over-year growth rate because the project single region and multiple region forecast results are reported as the former. The use of the compounded formula establishes consistency between the diagnostic work done by the analyst in the pre-projections module and the analyst decision on selection of a projection in the single region and multiple region modules.

The implementation of the compounded formula in STIP also establishes consistency with the LTIP, which uses a compounded rate in its projections results. The importance of the consistent measurement of projections between the LTIP and the STIP is heightened as users often compare the sets of results and, moreover, the results are used in the Occupational Projections software, i.e., users often compare the occupational employment projections for the two horizons.

Output - Final Reports (display for both statewide and sub-state areas)

# **Q-Statistic**

This test statistic is presented to determine if any systematic pattern of the <u>Residuals</u> remains after applying a given forecast model. An ideal model for a time series will result in Residuals that are "white noise," that is, completely uncorrelated over time (for a sequence of error terms, each value has a <u>Mean of Zero</u>, a constant variance, and is serially uncorrelated). While the <u>Durbin-Watson</u> statistic relates to a pattern of first-degree autocorrelation, the Q-Statistic is a more general test for autocorrelation, testing whether a group of autocorrelations is significantly different from zero.

The Q-Statistic is based on the series of Residuals from the estimated model. Specifically, the <u>sum of squared</u> autocorrelations among Residuals provides the basis for the test statistic. As displayed, the Q-Statistic is distributed as chi-squared with <u>Degrees of Freedom</u> equal to the <u>Number of Observations</u> minus the number of autocorrelations. For an estimated <u>ARMA</u>, Q has a chi-square distribution.

The STIP system provides the Q-Statistic in the "Details" screen. If this Q-Statistic is less than the critical value of chi-square, as a general rule of thumb below a value of 13, then the model can be considered free from autoregressive and moving average components.

#### **R-Squared**

R-Squared measures whether an estimated equation is accurate in explaining the sample observations of the dependent variable over the <u>Sample Period</u>. The more accurate the estimated equation, the closer the estimated dependent variable values would be to the actual dependent variable values. The coefficient of determination, R-Squared, is a measure of the goodness of fit (<u>Historical Fit</u>) of the forecasting model; it estimates the proportion of the variation in the dependent variable explained by the <u>Independent Variables</u>, and is represented by the ratio of the explained sum of squares to the total sum of squares.

**R-Squared ranges from 0 to 1. The higher the R-Squared, the better is the overall fit of the estimated equation.** R-Squared may be defined as the percentage of the variation of the dependent variable explained by the regression equation.

Although R-Squared is a good measure of fit in a simple regression model, it does not appear the same in a multiple regression. Adding another Independent Variable to an equation is likely to increase the R-Squared, but it would decrease the <u>Degrees of Freedom</u>. Therefore, the Adjusted R-Squared would be a better measure of the goodness of fit when a regression equation contains more than one explanatory variable.

The Adjusted R-Squared relies on Degrees of Freedom to penalize models with a large number of Independent Variables. Thus, a small number of variables are preferred to a large number of variables, which explain the same amount of dependent variable variation.

## **Random Walk**

A simple time series pattern in which the period-to-period change which produces each new observation, Y(t), is a random step uncorrelated to past values or patterns.

$$Y(t) = Y(t-1) + e_y(t)$$

where

$$e_y(t) = Y(t) - Y(t-1)$$

The error term (e) is simply the first difference in successive values of Y. Several macroeconomic time series appear to behave in a manner consistent with a Random Walk process. For the purpose of forecasting, the most recent observation of the dependent variable time series of interest is sufficient. Random Walk model forecasts off a useful standard for evaluation of alternative short run forecasts when the employment series does not exhibit an established pattern of growth or decline.

#### **Related Industries**

The <u>multivariate models</u> in the forecasting module use a mixture of macroeconomic indicators and inter-industry relationships. The latter are useful to approximate the dynamic nature of the economy. For example, employment boosts in motor vehicle assembly often lead gains in fabricated metals. Hiring in retail trade, home furnishings lags upturns in construction activity.

The inter-industry relationships delineated in the Related Industries Table are based on the 1997 <u>NAICS</u> (North American Industrial Classification System) and 1987 SIC Correspondence Tables, and expert review. The user has the flexibility to modify the table for describing linkages unique to a state's industry relationships. One or two Related Industries are optimum for the production of forecasts because some of the statistical methods require a large number of <u>Degrees of Freedom</u>.

# **Residuals (Error Terms)**

Residuals, or error terms, are the difference between the <u>actual</u> and <u>Fitted Values</u> of the dependent variable over the <u>Sample Period</u>. Residuals provide an indication of the likely <u>Forecast Errors</u> that the regression would make in a forecasting application. A chart of Residuals is produced for each model in the "details" section of Project Single Region module and for LTIP regression models.

#### Rounded vs. Un-rounded Data

The recommendation for use of the STIP system is to import un-rounded data. The utilization of rounded data in the forecast process "builds-in" an unnecessary level of error. Typically, BLS (Bureau of Labor Statistics) estimates are rounded to the nearest hundred. An industry forecast in the range of 1% to 2% growth (typical) for an industry with an employment level below 10,000 falls victim to the BLS rounding criterion. Why begin the forecast process with such an impediment?

## **Sample Period**

The set of available historical <u>observations</u> used in the estimation of a statistical model may be the full set of available observations; however, it is often useful to restrict the Sample Period to evaluate <u>Forecast Errors</u>. The <u>Forecast Period</u> begins one period after the conclusion of the Sample Period. You can declare starting and ending points for the Sample Period in a number of system modules (industry employment series, identify <u>Leading Indicators</u>). The analogous ex-post evaluation of Forecast Errors in LTIP is captured in the <u>Theil U</u> statistic. In select industry models, you must identify a starting quarter; however, the ending quarter is determined by your selection of Step 1, Step 2, or Step 3.

The Sample Period is the frame of reference for all of the information presented in the "details" section of select industry forecasts.

### **Seasonal Adjustment**

Forecasters are interested in seasonal fluctuations because:

1. Seasonality is second only to trend forces as the most prominent component of most time series data; and

2. From a short-term perspective, an understanding of seasonal variation is essential since the largest element in period-to-period (month-to-month) fluctuations is seasonal variation.

The STIP system requires monthly data series and it is recommended that all imported data be in the form of not seasonally adjusted levels. Data series and forecast results are presented as unadjusted levels; however, three different approaches to Seasonal Adjustment are employed in model estimation. First, the <u>Random Walk</u> and <u>Long Run</u> <u>Drift models</u> are based strictly on unadjusted levels and, consequently, do not employ any Seasonal Adjustment in forecast estimation.

Second, seasonal effects are estimated explicitly in the <u>linear trend model</u> and <u>Exponential Smoothing models</u>. The former uses a set of monthly dummy variables to estimate seasonal patterns that remain fixed throughout the sample and <u>Forecast</u> <u>Periods</u>. In Exponential Smoothing, the seasonal patterns are updated with each subsequent observation.

The third approach depends on a seasonally differenced monthly series and is used in the <u>ARMA</u>, <u>OLS</u>, <u>VAR</u>, and <u>BVAR</u> model estimation. The system transforms the data series into over-the-year monthly differences. The change in industry employment from April (or September) of one year to April (or September) of the prior year is independent of seasonal patterns. The display of <u>Forecast Values</u> exhibits a seasonal pattern as the forecasted annual changes are simply added to <u>actual values</u> from the last year of the <u>Sample Period</u>.

# SOC

The Standard Occupational Classification (SOC) system is a United States government system of classifying occupations. It is used by U.S. federal government agencies collecting occupational data, enabling comparison of occupations across data sets.

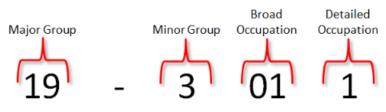


Figure 1: SOC code designations

- The first two digits in a SOC code represent the major group.
- The third digit represents the minor group.
- The fourth and fifth digits represent the broad occupation.
- The sixth digit represents the detailed occupation.

View the SOC Manual (links to bls.gov) for more information on the system.

#### **Standard Errors of Coefficients**

The standard errors of the <u>Coefficient Estimates</u> indicate their likely sampling variability and, therefore, their reliability. These estimates vary for each different data set and the standard error of the coefficients is a measure of their variation. The standard error is the square root of the variance of the distribution of the fitted coefficients; therefore, as the standard error increases, the probability for variation among the fitted coefficients increases.

In the STIP and LTIP systems, standard errors measure the statistical reliability of Coefficient Estimates, representing the distribution within which a statistic will fall when samples are obtained from the population. Standard errors of the coefficients are presented for all forecasting models.

# Step 1, Step 2, Step 3

<u>Forecast Values</u> can be compared to <u>actual values</u> when the <u>Forecast Period</u> begins within the range of available historical observations. Such "within-sample" experiments provide valuable information on the performance of proposed forecasting models. Run Step 1 and the proposed models are estimated with the last eight quarters of historical data held out of the <u>Sample Period</u>. Results include eight quarters of Forecast Values (period t-7 to base period t) and a corresponding set of eight <u>Forecast Errors</u> for each model.

An ideal forecasting model should remain effective over time. The sensitivity of each model's forecast performance over time can be evaluated by varying the end of Sample Period. Therefore, Step 2 re-estimates the set of proposed models with the Sample Period redefined to include all but the last four quarters of historical data. Results include eight quarters of Forecast Values (period t-3 to t+4) but only four quarters of Forecast Errors (from t-3 to base period t).

The Sample Period in Step 3 is not artificially restricted. Resulting model estimates use data from the complete set of available historical observations ending at the base period. The final set of forecasts extends eight quarters beyond the base (period t+1 to t+8) and there are no Forecast Errors. At the conclusion of this step you are able to save Forecast Values from your choice of models.

Initially, you can either rely on the <u>Tournament</u> to propose models for evaluation or select your own set of alternatives. Individual models within each group can be replaced at any point; however, you will return to Step 1 after any change. As you reestimate a given set of proposed models under Step 1 and Step 2 you are building a record of relative forecast performance used in Step 3 to select a model.

### **Sum of Squared Residuals**

The Sum of Squared Residuals measures the unexplained variation in the dependent variable based on an estimation of <u>Residuals</u> over the <u>Sample Period</u>. <u>Coefficient</u> <u>Estimates</u> which minimize the Sum of Squared Residuals are determined by ordinary least squares regression or an alternative <u>Optimization Process</u>.

# **T-Statistic**

The T-Statistic tests the hypothesis that a regression coefficient (b1x1, b2x2, b3x3...) has a particular value. The larger the absolute value of the T-Statistic, the better the possibility that the given regression coefficient estimate is significantly different from zero, thus implying that the <u>Independent Variable</u> would have an effect on the dependent variable.

#### T Test Steps

- 1. Estimate forecasting model and obtain the coefficients to be tested.
- 2. Compute T-Statistic, t, (regression coefficient/standard error of the coefficient).

3. Determine the <u>Degrees of Freedom</u> (number of <u>observations</u> minus number of coefficients, including constant term).

4. Derive the critical value(s) for the T-Statistic, t\*, considering the chosen significance level and the Degrees of Freedom. As a general rule, the significance level should be .05 or less. (See reference texts for the t distribution table.)

5. Set the test and null ( $H_o$  = coefficient equals 0) and the alternative ( $H_a$  = coefficient does not equal 0) hypotheses.

#### **Decision Rule**

1. If the absolute value of  $t_c$  is great than  $t^*$ , then the null hypothesis is rejected. Under this condition, the regression coefficient ( $b_1x_1$ ) is statistically significant from zero and the Independent variable ( $x_1$ ) has an impact on the dependent variable.

2. If the null hypothesis cannot be rejected (the absolute value of  $t_c$  is less than  $t^*$ ), then the regression coefficient ( $b_1x_1$ ) is not statistically significant from zero. The Independent Variable ( $x_1$ ) does not have an impact on the dependent variable.

Although the T-Statistic is a valuable tool for determining the significance of an individual explanatory variable, it does not allow testing for the overall goodness of fit of a model. The <u>F-Statistic</u> technique or <u>R-Squared</u> should be used to test for the overall goodness of fit of a model.

### Theil-U

The Theil-U statistic is an ex post facto test of the predictability of the model. It measures how well the model predicts a certain number of years inside the historical series itself. The default number of years to include is four.

#### Tournament

This feature resides in the Project Single Region module and offers a set of "best-fit" specifications for each forecast model. You can proceed with these specifications or identify a set of alternatives for evaluation. After the Tournament feature is called, you must repeat Step 1, Step 2, and Step 3 to produce industry forecasts. This is also the case whenever you alter or replace any of the choices in the "models" section.

The Tournament runs all of the available models in the system using the last eight periods of historical data to define the <u>Forecast Period</u>. <u>Mean Absolute Percentage</u> <u>Error</u> values for each model are compared to identify the most effective model in each group. This automated process delivers a set of candidates; however, *you* select the model for industry forecasts. You are encouraged to evaluate models based on several criteria before making your selection.

# **Trend Models**

A set of alternative approaches that project an established pattern of employment growth into the <u>Forecast Period</u>. Differences between the various models in this group reflect the degree to which the most recent observation (as opposed to the entire <u>Sample Period</u>) is used to determine <u>Forecast Values</u>.

#### Linear Trend:

OLS estimation of a linear trend with seasonal controls. The regression equation includes a constant, a time trend and monthly dummy variables. Forecasts follow a very deterministic path based on series mean, trend and seasonal variations that are assumed to remain consistent throughout the Sample Period. Note that the most recent observation has no more effect on the forecasts than any other observation in the Sample Period.

#### Exponential Smoothing:

Predicted values for the level, trend and seasonal components are updated with each successive observation. Estimated smoothing parameters determine the degree to which the model responds to new information. The particular framework implemented here can be described as Holt-Winters double Exponential Smoothing with linear trend and additive seasonal.

#### Random Walk:

Forecasts from this model offer a useful standard for comparison of short term models when the employment series is subject to permanent shocks and growth does not appear to follow a trend. The most recent observation serves as the forecast for future periods.

#### Long Run Drift:

Forecasts follow a deterministic trend with the most recent observation as a starting point. This model incorporates industry employment growth from long term forecasts to produce a meaningful combination of short term information and long run analysis.

## **Turning Point Accuracy**

One of the ultimate goals in short term forecasting is to accurately predict the timing and magnitude of cyclical fluctuations. Traditional measures of <u>Historical Fit</u> assess overall model performance in terms of residual magnitudes throughout the <u>Sample</u>

<u>Period</u>. Turning Point Accuracy can be evaluated visually by inspecting the behavior of the predicted series at specific points where the actual series changes direction.

In identify <u>Leading Indicators</u> you select explanatory variables for statewide nonagricultural employment on the basis of several criteria. Effectiveness as a source of leading information on turning points should be a key factor. A summary measure of Turning Point Accuracy is provided for each of the leading indicator variables alone and in combination.

Turning points are defined as an increase or decrease in employment preceded by at least four consecutive quarters of movement in the opposite direction. The two or four quarter leading indicator series is said to predict a turn when the predicted series moves in the same direction as the actual series within one quarter of the turning point. The percentage of total upturns and downturns that are predicted in this manner serves as the measure of Turning Point Accuracy.

### **Univariate Methods**

Univariate refers to an expression, equation, function, or polynomial of only one variable.

Methods include:

- <u>Trend</u>
- <u>ARMA</u>

# **VAR Models**

For the purpose of short term forecasting, it may be valuable to identify a set of influences that provide predictive information about our dependent variable even when the precise structure of the economic relationship remains elusive. Vector autoregression (VAR) combines past information from the dependent series and other influences to form the most effective equation for prediction without adopting a host of restrictive behavioral assumptions. In general, these models have proven successful in short term forecasting especially where the dependent variables are potentially interrelated.

A vector autoregression can be represented by a group of equations, sharing a common set of explanatory variables, including <u>Lagged Values</u>, of all dependent

variables. Consider the case of two dependent variables (X, Y) and lag length of two periods (t-1, t-2). A separate equation is specified for each of the variables based on a comprehensive set of lags as follows:

$$X(t) = a_0 + a_1 X(t-1) + a_2 Y(t-1) + a_3 X(t-2) + a_4 Y(t-2) + e_x(t)$$
  
$$Y(t) = b_0 + b_1 X(t-1) + b_2 Y(t-1) + b_3 X(t-2) + b_4 Y(t-2) + e_y(t)$$

<u>Forecast Values</u> are produced for each of the dependent variables in the VAR system of equations. A sequential process is used in which Forecast Values are generated one period at a time and then used as "inputs" in the next step.

Statistical details associated with VAR are consistent with <u>OLS</u> and <u>ARMA</u> with one exception. <u>Granger Causality</u> tests are performed for the *explanatory variables* in the employment equation.

A variety of VAR Models with different sets of explanatory variables are available in the system. "Indicators" refers to a preset VAR model based on Lagged Values of employment and the set of <u>Leading Indicators</u> that you have already identified. The "Industries" option calls for a preset VAR based on <u>Related Industries</u>. Leading Indicators and Related Industries are combined to form the set of lagged <u>Independent Variables</u> in the "full" option. With the "User" option you can define industry-specific VAR Models based on a more extensive set of explanatory variable combinations and your choice of maximum lag length.

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#### Glossary

ARC: Analyst Resource Center

**BLS:** Bureau of Labor Statistics **BLUE:** Best Linear Unbiased Estimates **BOS:** Balance of State

#### D

Α

Β

**DBA:** Database Administrator **DSU:** Database Setup Utility

#### Ε

**EDS:** Estimate Delivery System (replaced by LEWIS) **ETA:** Employment and Training Administration

#### F

FIPS: Federal Information Processing Standard

#### I

ICT: Industry Control Total

#### L

**LEWIS:** Local Employment and Wage Information System **LTIP:** Long Term Industry Projections

#### Ν

NAICS: North American Industry Classification System

#### 0

**OP:** Occupational Projections

#### Ρ

PMP: Projections Managing PartnershipPS: Projections Suite

RD: Rounded

#### S

R

SE: Self Employed

SIC: Standard Industrial Classification (replaced by NAICS)

SOC: Standard Occupational Classification

SQL: Server Query Language

STIP: Short Term Industry Projections

#### W

**WIA:** Workforce Investment/Information Area **WID:** Workforce Information Database