



# Getting Started with



Version 2.0

# Table of Contents

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Table of Contents .....	2
Welcome.....	3
What is REMI Tax-PI? .....	3
Sample Uses of REMI Tax-PI .....	3
System Requirements.....	4
Installation .....	5
Starting Tax-PI.....	6
Using the New Tax-PI Interface .....	7
Forecast Navigation Screen .....	7
Policy Variable Selector .....	9
Inputs List .....	11
Forecast Options .....	12
Locating Other New Features .....	13
Customizing a New Budget.....	15
Options .....	16
Using Revenues Tab.....	16
Adding Revenue and Expenditure Details .....	17
Running a Budget Simulation .....	20
Creating a New Simulation .....	23
Inputting Policy Variables .....	25
Understanding Forecast Display Functions .....	31
Glossary of Terms .....	36
Revenue Indicators .....	36
Expenditures Indicators .....	43
Getting Additional Help .....	45
Contacting REMI Technical Support .....	45
REMI's Web Site .....	45

# Welcome

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Welcome to REMI Tax-PI. Your program package includes both regional and national data models. The regional data and model have been calibrated to the regions(s) that you specify at purchase, and all packages include a Windows® point and click interface that makes operating the program easy for all levels of computer users.

## What is REMI Tax-PI?

Tax-PI is a state-of-the-art tool for evaluating fiscal and economic effects of tax policy changes. Based on over 30 years of experience modeling economic effects of tax policy changes, Tax-PI is the only widely available dynamic fiscal and economic impact model. This model allows analysts to capture direct, indirect, and induced fiscal and economic effects and links the effects of taxation and other policy changes over multiple years with the REMI PI+ model. Tax-PI is used by agencies interested in performing both economic and fiscal budgetary analysis on the state level.

Tax-PI gives the user a customizable fiscal model to illustrate state specific revenues and expenditures defined by personalized tax policy variables. Users are able to assign policy variable drivers to each customized revenue source and expenditure and observe the short-and long-term dynamic feedback results on fiscal, economic, and demographic impacts.

The Tax-PI model is another example of REMI's dedication to continuously push the frontier of regional economic modeling forward. REMI is dedicated to providing quality customer service and support.

## Sample Uses of REMI Tax-PI

- I. Create a customized budget to run fiscal and economic forecasts and see how the changes in revenues and expenditures effect employment and economic migration
- II. Tax-PI can show how a 1 percent Sales Tax increase will impact consumer price and consumer spending. The model has a built-in dynamic feedback feature that also displays the broader economic and fiscal impact as a result of the Sales Tax increase
- III. State and local government spending can be modeled for the user to determine changes in the mix of services provided by the community as a whole by using display options

# System Requirements

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We recommend that your computer system meet the following specifications. Tax-PI may run on systems below these minimum specs, but functioning is severely impaired.

For standard models:

- Windows 7, 8, or 10 (32- or 64-bit)
- 2.0 GHz or faster processor
- 4 GB RAM
- 1024x768 display
- 10 GB of available hard-disk space

For large models with 50 or more regions:

- Windows 7, 8, or 10 (64-bit)
- 2.0 GHz or faster processor
- 16 GB RAM
- 1024x768 display
- 50 GB of available disk space

Simulation execution time increases exponentially with the number of regions and industry sectors. Large models (i.e. >12 regions) benefit greatly from increased memory capacity and processor speed. For example, on a computer with a 3 GHz Intel Core 2 Duo processor and 3 GB of RAM, a 3 region model will run a 25 year forecast in 6 seconds, while a 51-area model takes 14 minutes.

# Installation

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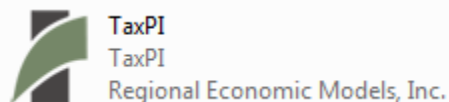
**IMPORTANT NOTE:** You must have Windows administrative privileges to install this software.

When you are ready to install REMI Tax-PI, insert the provided CD into your CD-ROM drive. The InstallShield installation utility should run automatically. If it does not appear, select your CD drive in “My Computer” (XP) or “Computer” (Vista/7) and double-click “setup” or “setup.exe” to start the installation process. A shortcut to the application will appear on the desktop once the installation is complete.

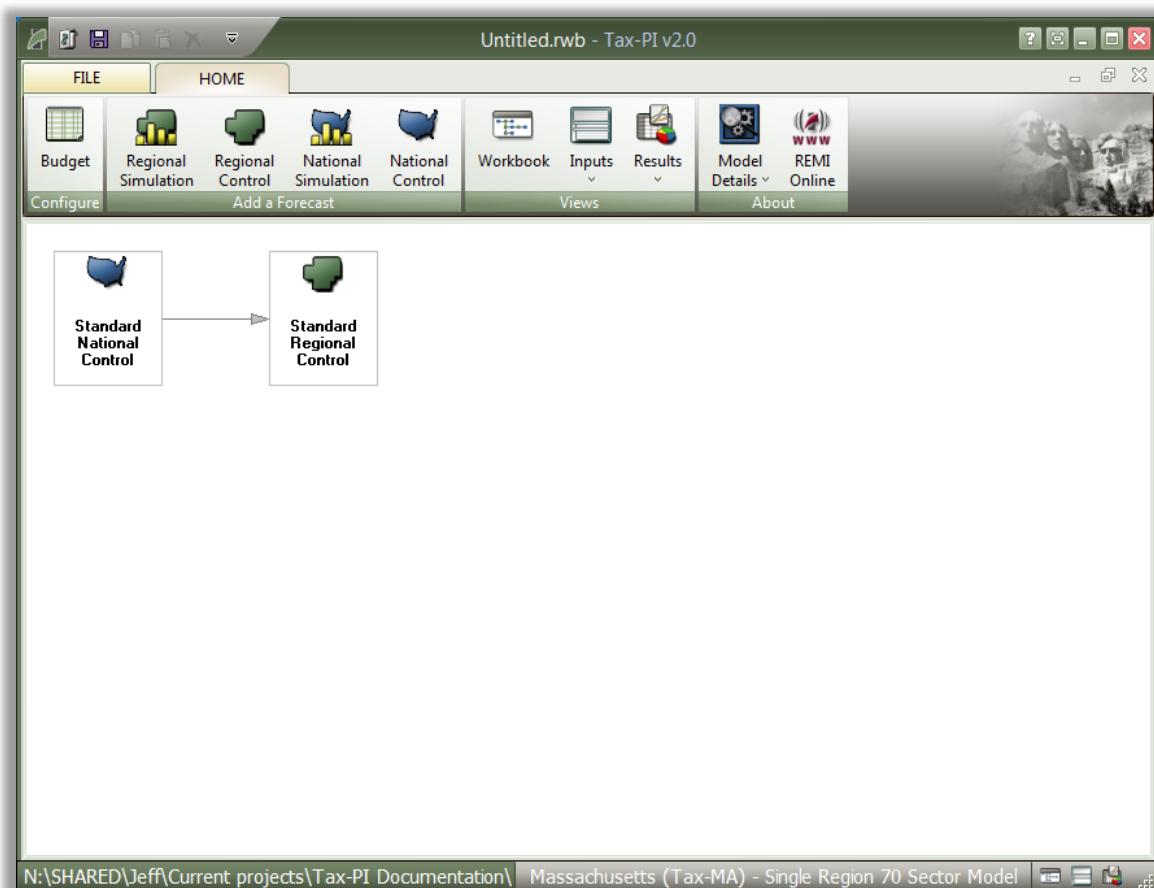
Contact REMI or your system administrator if you need assistance with the installation or operation of the software.

# Starting Tax-PI

To start Tax-PI, double click on the shortcut appearing on your desktop.



The *Home* tab is the default view when the model is opened. Note the default name of the workbook located on the header when you first open Tax-PI is *Untitled.rwb*. You will have the opportunity to rename this document when you save a new forecast. The name of the specific model is located on the status bar at the bottom of the window. The ribbon below the Home tab displays four groups: *Configure*, *Add a Forecast*, *Views*, and *About*. The Workbook view is the default, and contains the **Standard National Control** and **Standard Regional Control**. The *Inputs* view is empty until running additional forecasts, and the *Results* view gives you the option of displaying the history and forecast of any controls or simulations stored in the workbook. The *About* group provides access to **Model Details** such as the national input output table and also displays a direct link to the REMI website where additional information and documentation may be found.

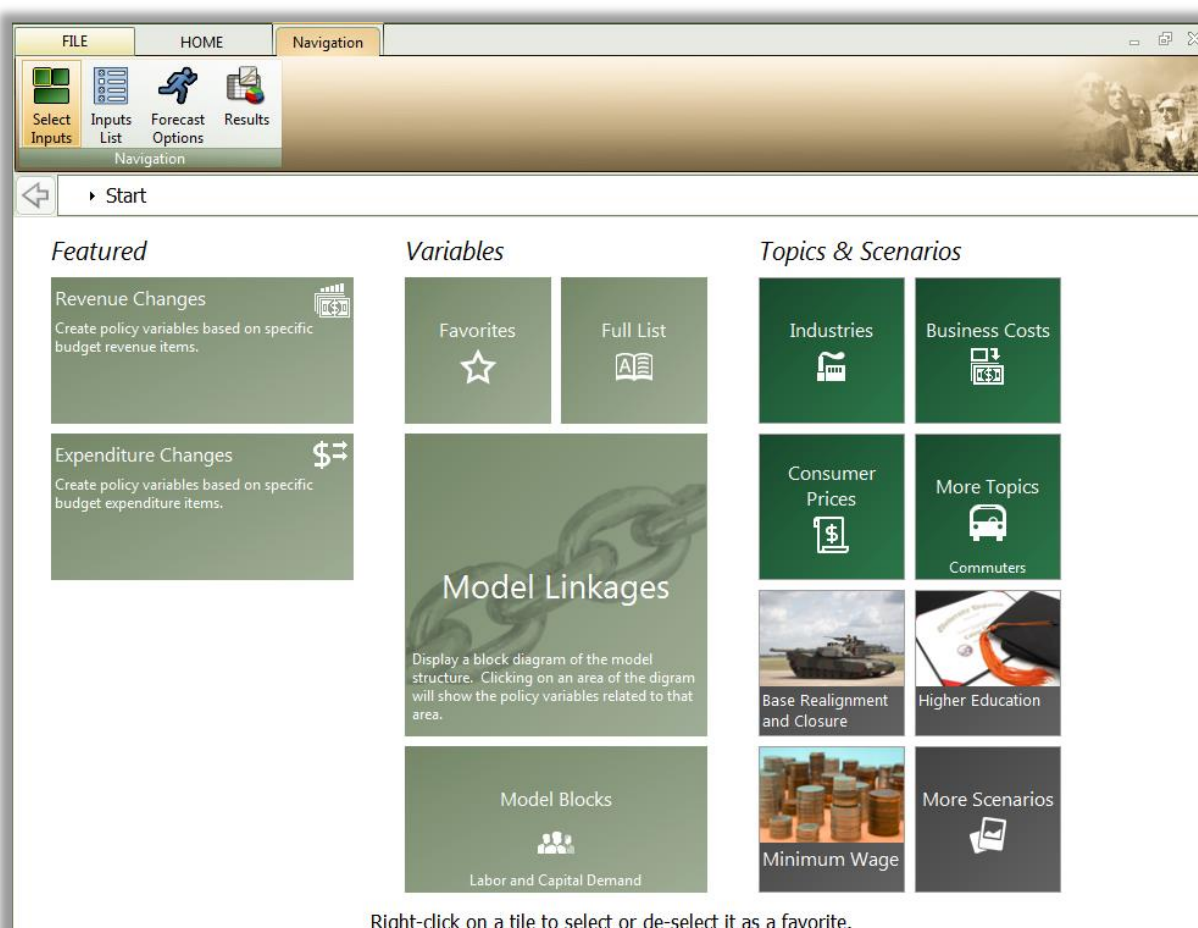


# Using the New Tax-PI Interface

The new 2.0 version of Tax-PI features a major redesign of the various forecast creation interfaces and the policy variable selector. In keeping up with the industry standard for Windows applications, the design of these interfaces has moved toward the use of smart tiles and has made Tax-PI much more tablet-friendly in the process.

## Forecast Navigation Screen

While the home screen of Tax-PI will look familiar from the previous version, once you begin the process of creating a forecast (by clicking on either **Regional Simulation**, **Regional Control**, **National Simulation**, or **National Control**) you will experience our intuitive new tile design. Navigating to a policy variable via its topic, through a pre-built economic scenario, or with some other grouping like the model blocks, is now more user friendly, with all options on display instead of hidden in drop-down menus. At the forefront of the new forecast navigation screen, the **Featured** section highlights topics and tools that are likely to be used most often. More detail about the **Revenue Changes** and **Expenditure Changes** will be explained later.



Another organizational improvement that we hope will simplify navigating to your most-used policy variables is the Favorites section. Right-clicking any tiles adds them to your Favorites (indicated with a star) where they can be dragged into any customized order.



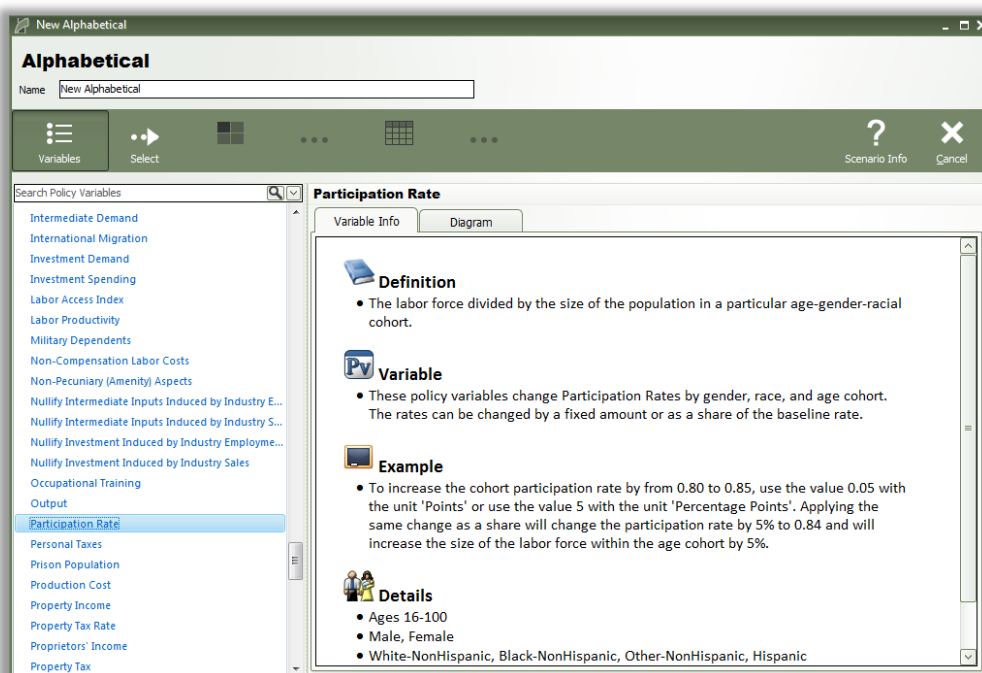
Creating a custom scenario, which consists of any number of policy variables, in custom groups and with pre-selected options, can prove to be another very effective way of easily accessing all of the policy variables you use most. Favoriting the resulting custom scenario tile will make it even easier.

In Tax-PI 2.0, features such as BizDev and Custom Scenarios are located in the “More Scenarios” section of the forecast navigation screen.



## Policy Variable Selector

Clicking on any tile that represents some number of policy variables will open up the policy variable selector in a new window. This selector window is split into several tabs that each represents a step in the process of defining exactly how your policy variable will enter into the model.



The first tab holds a list of logically grouped policy variables that can be selected. Search functionality has been added to this policy variable list to cut down on time spent looking through the longer lists of variables. Clicking a variable will show details about it and its options, as well as a diagram that depicts how the policy variable relates to other variables and fits into the model. After choosing a variable, clicking the **Select** arrow button will move the variable to the **Details** tab.

**New Alphabetical**

Alphabetical

Name: New Alphabetical

Variables Details Add to Editor Scenario Info Cancel

**Participation Rate**

**Region (1)**  
Texas

**Units**  
Percent

**Race**  
Grouped All

**Gender**  
Grouped All

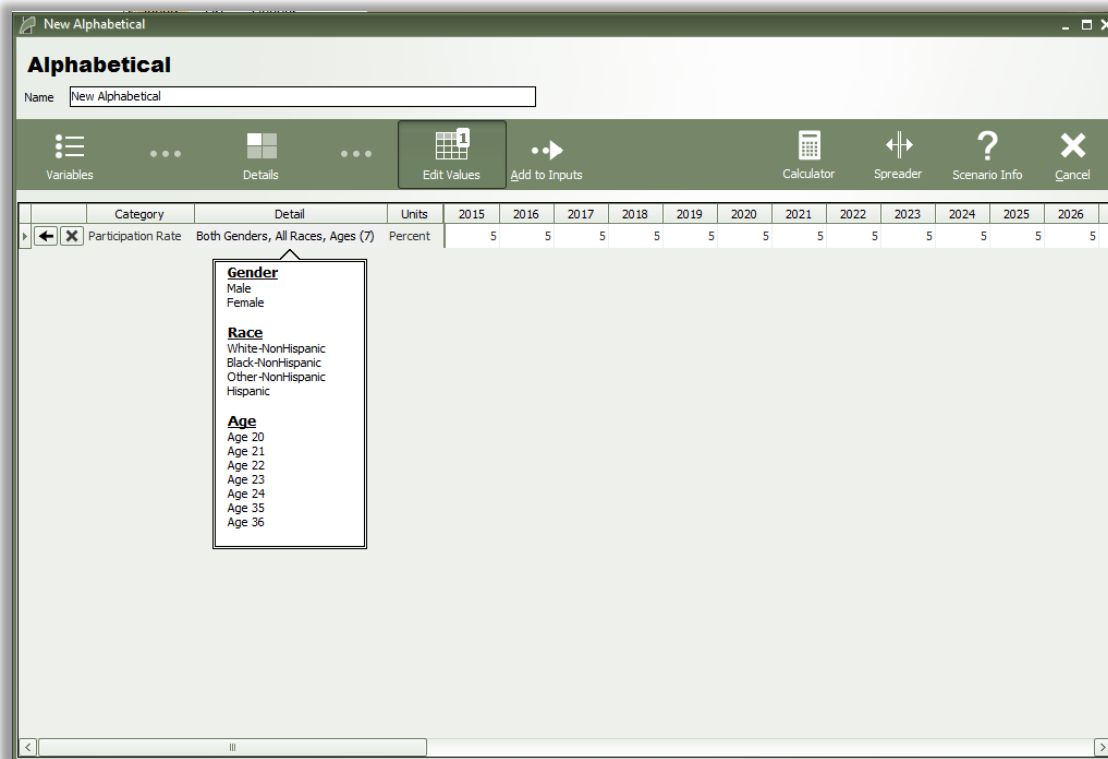
**Age**  
7 Grouped

**Industry**

- ☐ Ages 16-19
- ☒ Ages 20-24
- ☒ Age 20
- ☒ Age 21
- ☒ Age 22
- ☒ Age 23
- ☒ Age 24
- ☐ Ages 25-29
- ☐ Ages 30-34
- ☐ Ages 35-39
- ☒ Age 35
- ☒ Age 36
- ☐ Age 37
- ☐ Age 38
- ☐ Age 39
- ☐ Ages 40-44
- ☐ Ages 45-49
- ☐ Ages 50-54
- ☐ Ages 55-59
- ☐ Ages 60-64
- ☐ Ages 65-69
- ☐ Ages 70-74
- ☐ Ages 75-79
- ☐ Ages 80-84
- ☒ Group Ages

Favorites List Hierarchy

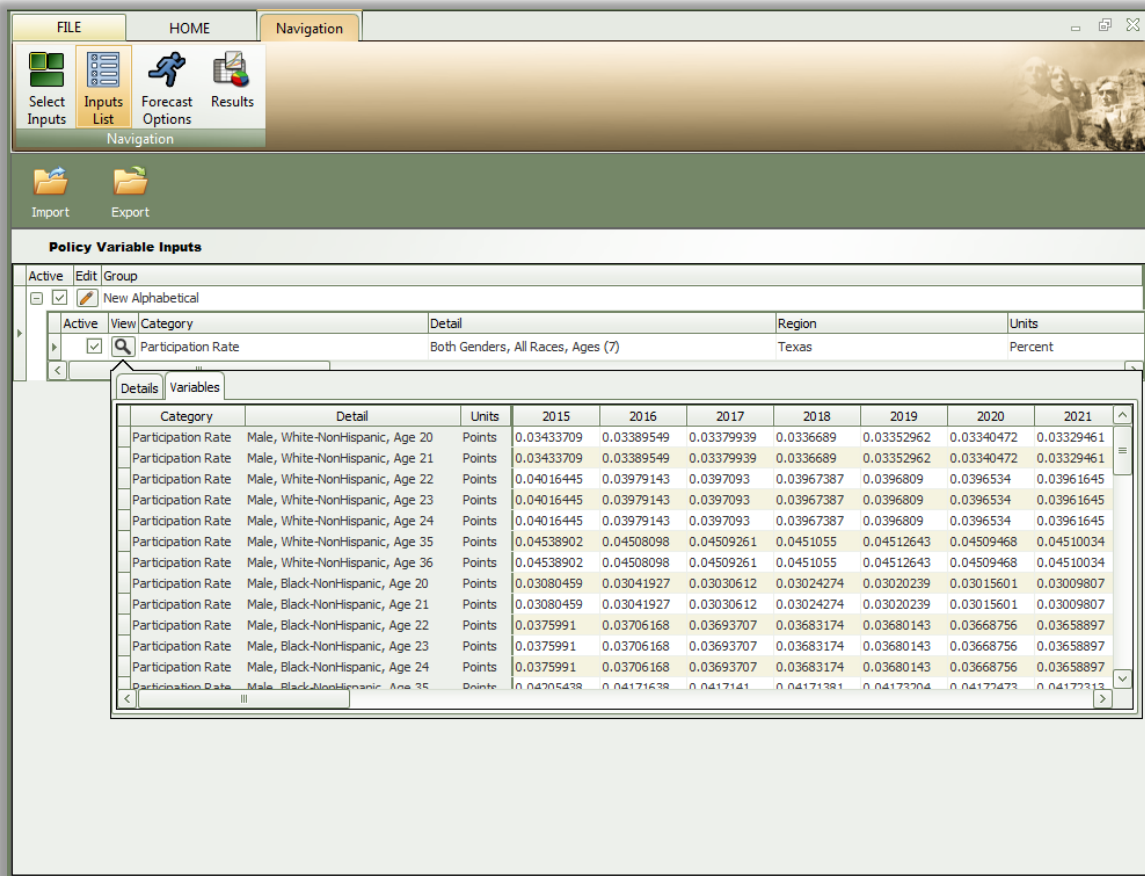
The **Details** tab is where you decide what the exact form of the policy variable should be. There is now a hierarchical view of industry, commodity, occupation, and age cohort details available on this tab to allow for easier input of values at a more aggregate level. Once all of the options on the policy variable have been specified, you will be able to click the **Add to Editor** button to move the variable into the editing grid.



The editor will allow you to input yearly values for each policy variable. One policy variable will be created for each option specified on the **Details** tab, unless you choose to group all details into one variable, which is depicted above for the age and race dimensions. Finished variables can be added to the forecast inputs list by clicking the final arrow button, **Add to Inputs**.

## Inputs List

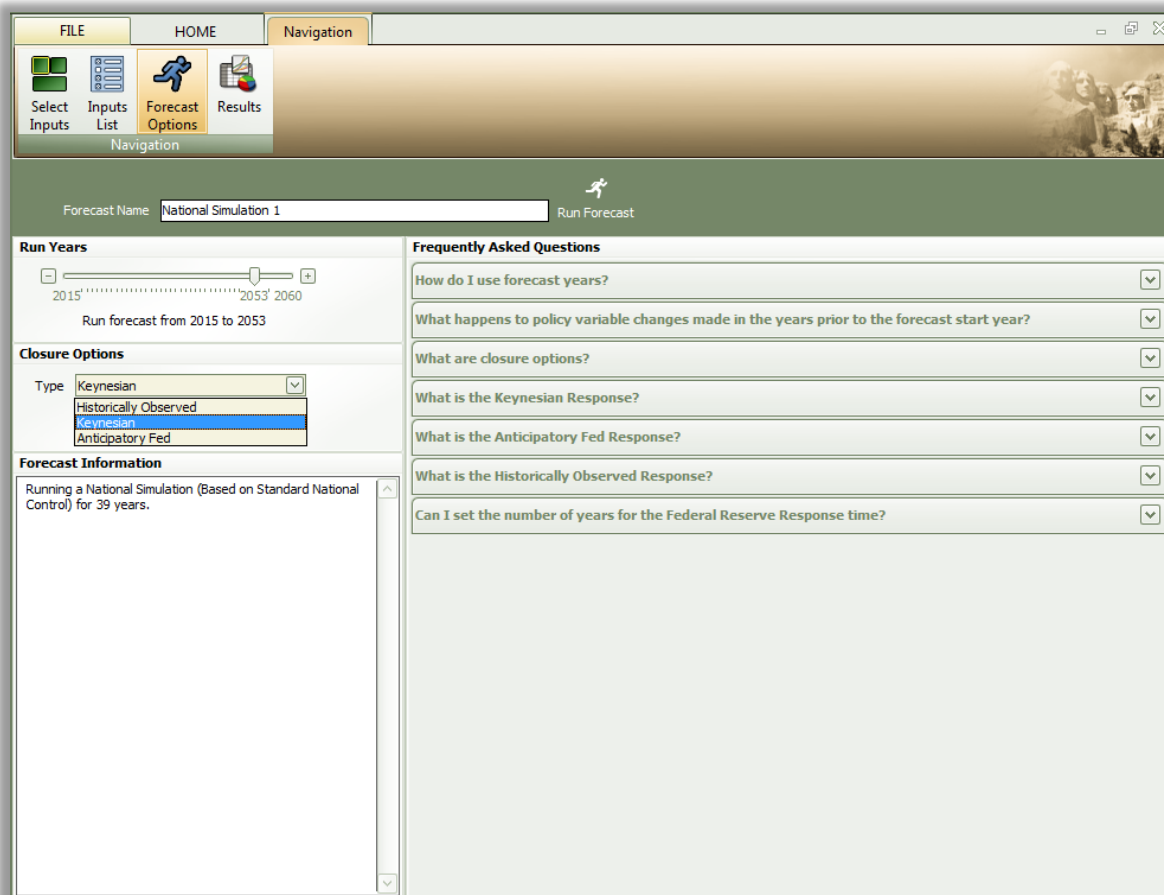
The forecast inputs list is a screen that displays which policy variables will be included as inputs to the model as it runs a simulation forecast. The policy variable import and export features are located on the inputs list. Importing in particular has seen big improvements, including an added ability to import policy variables from a REMI workbook file, an import preview window that allows for choosing which policy variables to import from a file and whether their yearly values or regions should be modified. Importing can also detect policy variable data problems before they happen and better handle each of the legacy import file formats.



Another new feature is the ability to inspect the converted versions of a given policy variable that will be the ones actually used by the model. Clicking on the magnifying glass icon on a policy variable in the Inputs List will open this converted variable window.

## Forecast Options

Running a forecast has been moved to its own screen. There are frequently asked questions about the different options for running the relevant forecast right on this screen alongside the usual year selector and also closure options and iteration settings if they apply to the forecast being run. Simply click the **Run Forecast** button once you have selected your preferred options and the model will start calculating results, as indicated by the progress bar.

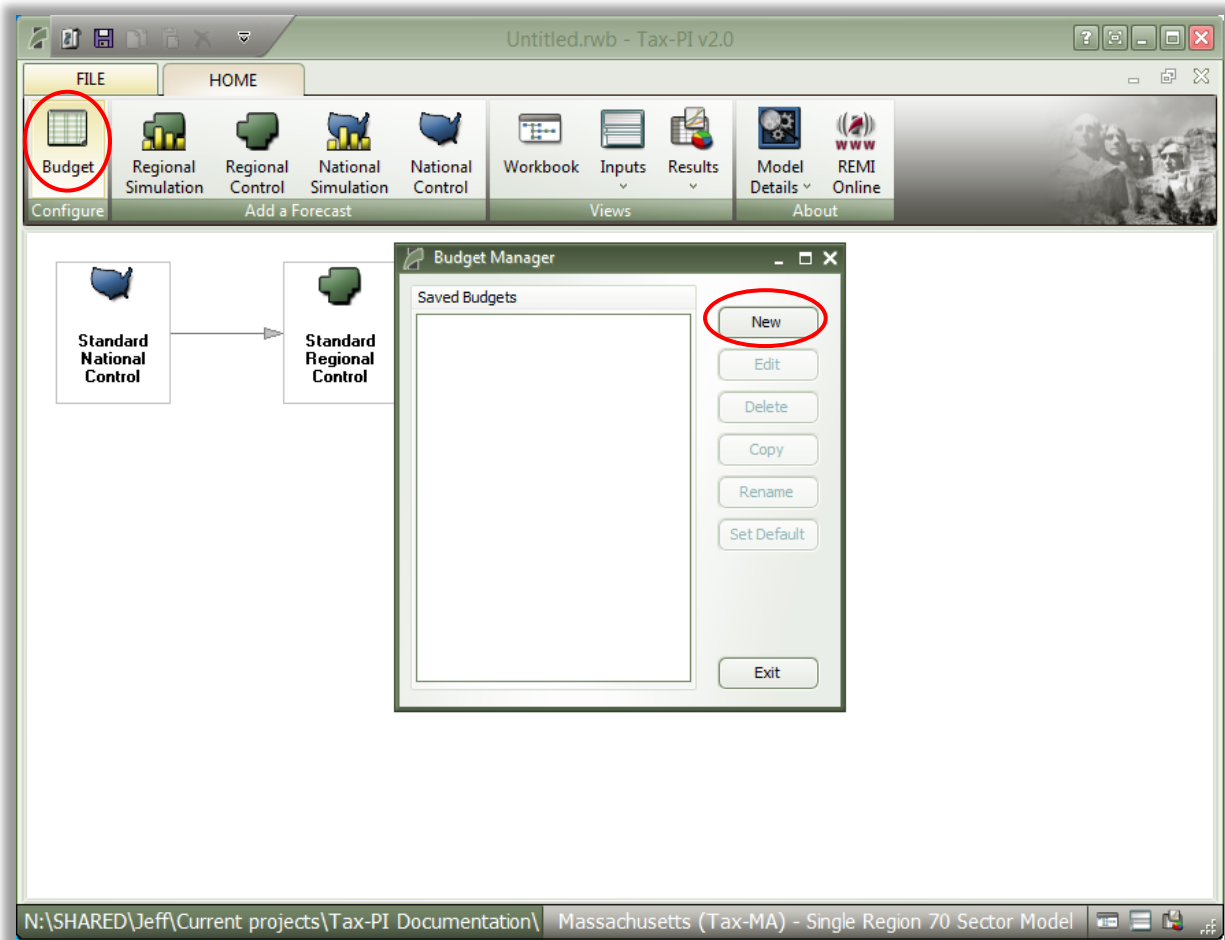


## Locating Other New Features

The Model Details menu located on the home page of Tax-PI and also under **File > Info** contains two new interfaces. There is now a window for viewing all frequently asked questions about Tax-PI in one place and an option to view them by topic. There is also a window for referencing all of the Tax-PI model documentation using a built-in PDF viewer.

# Customizing a New Budget

In order to model a fiscal scenario, a budget must first be created by using the **Budget Manager**. Open the **Budget Manager** by clicking on the **Budget** button in the **Home** tab. Click on the **New** button and a new budget line will appear in the **Budget Manager**. To rename the new budget, type over the default name and press enter to save.



When you are done renaming your new budget, click on the **Edit** button to open a blank budget. In REMI 2.0, a help box is added on the right side of the budget calibration screen showing a detailed description of how the features in this window are used, such as how to properly add revenue and expenditure categories.

**Budget Calibration - New Budget 1**

**Options**

Start of Fiscal Year:  Units:

Expenditures Determined By: ☒ Revenues ☐ Demand

Settings... Settings...

**Revenues**

Display Years:  to

Revenue Name	FY2014	FY2015	FY2016
<No data to display>			

Add Revenue

**Budget Setup**

**Start of Fiscal Year**

- Select the month that starts the fiscal year.

**Units**

- Select the units for the budget. The budget will appear in the results with the same units.

**Budget Data**

- Enter actual or forecasted budget data. The budget will be projected forward using the last year of entered data and an indicator that is selected from the model results.
- Select an economic indicator for the budget item. The growth rate of the economic indicator will be used to forecast the budget item.
- Select a policy variable to associate with the budget item. When a policy variable change is made to this budget item, the associated model variable will automatically be changed.
- Enter a tax rate for this budget item for use with the budget calculator. This is optional and will not affect forecasted budget levels. This information can be used with the budget calculator to convert changes in the tax rate to equivalent dollar amounts.

**Expenditure Calculation Mode**

- Expenditures Determined by Revenues** - When this option is selected, the revenues will be mapped to each expenditure category, creating a balanced budget. This will require several feedback iterations. First, the expenditures will be calculated based on the demand for each category. Then, policy variables will be created to adjust those expenditures to revenue mapped target values. It may take several iterations to match those target values. The revenue-to-expenditure mapping settings can be adjusted by pressing the "Settings" button.
- Expenditures Determined by Demand for Services** - When this option is selected, the expenditures will be mapped to each revenue category, creating a balanced budget. This will require several feedback iterations. First, the revenues will be calculated based on the demand for each category. Then, policy variables will be created to adjust those revenues to expenditure mapped target values. It may take several iterations to match those target values. The expenditure-to-revenue mapping settings can be adjusted by pressing the "Settings" button.

OK Cancel

## Options

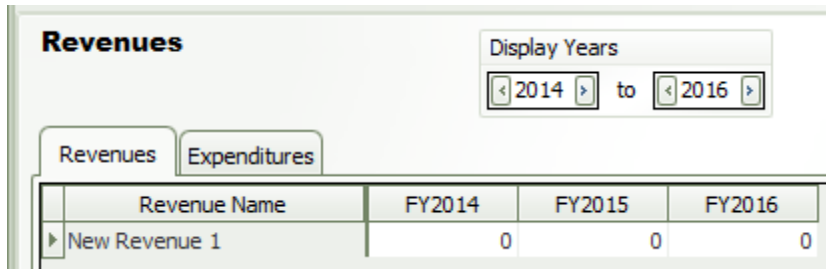
The **Options** box within the **Budget Calibration** box sets the **Start of the Fiscal Year** for the budget as January by default. The **Units** of the budget is also set at **Nominal \$ (M)** or Nominal Dollars in Millions by default. The user is able to pick from the predetermined lists of months to start the fiscal year and units to display the budget to match their needs.

Also in the **Option Box** user can choose whether the Expenditures will be determined by **Revenues or Demand**. Note the help box on the right explaining the differences in the two methods.

Once you will add expenditures, the process that will be explained in details further, you will be able to modify settings of the method of your choice.

## Using Revenues Tab

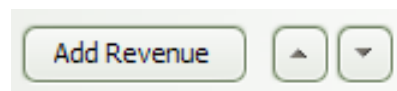
The *Revenues* tab displays the revenue inputs to the scenario. To add a revenue input, simply click on the **Add Revenue** button on the bottom left corner of the **Budget Calibration** box. A new line should appear under the Category column.



The screenshot shows the 'Revenues' tab interface. At the top right, there is a 'Display Years' box with a range from 2014 to 2016. Below this, there are two tabs: 'Revenues' (selected) and 'Expenditures'. A table is displayed with the following structure:

Revenue Name	FY2014	FY2015	FY2016
New Revenue 1	0	0	0

To label the new revenue item “Sales Tax”, click on the cell, type in the name of the revenue and hit enter. More revenue items may be added by using the same **Add Revenue** button. The revenue items may also be shifted up or down by using the arrow buttons next to the **Add Revenue** button.



This image shows a close-up of the controls for adding revenue. It includes a button labeled 'Add Revenue' and two arrow buttons (up and down) for shifting items.

Once all the revenue items are filled into the Category column, enter the amount of revenues that is expected to come from each revenue source in each time period where data is available. More forecast years may be added by adjusting the range through the **Display Years** box.

Complete the **Revenues** tab by filling in the amount of revenue you expect to receive in each available forecast year from each revenue source and follow the same process to fill out your expected expenditures in the **Expenditures** tab.

## Adding Revenue and Expenditure Details

Each revenue item must be assigned an economic indicator and policy variable in the **Revenue Details** box. For example, by highlighting Sales Tax, you can change the **Economic Indicator** of Sales Tax to **Personal Consumption Expenditures**.

**Budget Calibration - Documentation Budget**

**Options**

Start of Fiscal Year: January  
Units: Nominal \$ (M)

Expenditures Determined By: ☒ Revenues ☐ Demand

**Economic Indicator**

Select an economic indicator for the budget item. The growth rate of the economic indicator will be used to forecast the budget item.

**Indicator** | Policy Variable | Rate Info

**Revenue Details**

**Sales Tax**

Economic Indicator: **Personal Consumption Expenditures**

☐ Time Series ☒ Include All

Details	Details	All Years
New autos	Percent	100
Net purchases of used autos	Percent	100
Other motor vehicles	Percent	100
Motor vehicle parts	Percent	100

**Revenues**

Display Years: 2008 to 2010

Revenue Name	FY2008	FY2009	FY2010
Sales Tax	250	250	250
Income Tax	325	325	325

Once the **Personal Consumption Expenditures** economic driver is associated with the Sales Tax, **Details** is populated in the box below. You can adjust the percentage or weight of each detail that goes into **Personal Consumption Expenditures**.

The **Policy Variable** tab functions the same way as the **Indicator** tab.

**Budget Calibration - Documentation Budget**

**Options**

Start of Fiscal Year: January  
Units: Nominal \$ (M)

Expenditures Determined By: ☒ Revenues ☐ Demand

**Edit Policy Variable Details**

The policy variable associated with this budget item can be customized by selecting the details to be affected when entering a policy variable change. The policy variable change will spread across the details. Enter a percentage for each of the details.

**Indicator** | **Policy Variable** | Rate Info

**Revenue Details**

**Sales Tax**

Policy Variable: **Consumer Price (amount)**

☐ Time Series ☒ Include All

Details	Details	All Years
New autos	Percent	100
Net purchases of used autos	Percent	100
Other motor vehicles	Percent	100
Motor vehicle parts	Percent	100

**Revenues**

Display Years: 2008 to 2010

Revenue Name	FY2008	FY2009	FY2010
Sales Tax	250	250	250
Income Tax	325	325	325

Economic indicators and policy variables can also be associated with expenditures through the same process.

There is also an optional **Rate Info** tab that allows the user to assign an underlying baseline tax rate to each revenue category to be used with the **Budget Calculator** when inputting budget policy variables. In this case, the underlying tax rate on Sales Tax is 5 percent. More on the **Budget Calculator** will be discussed later in the next section.

**Budget Calibration - Documentation Budget**

**Options**

Start of Fiscal Year: January  
Units: Nominal \$ (M)

Expenditures Determined By: ☒ Revenues ☐ Demand

**Tax Rate**

Enter a tax rate for this budget item for use with the budget calculator. This is optional and will not affect forecasted budget levels. This information can be used with the budget calculator to convert changes in the tax rate to equivalent dollar amounts

**Revenues**

Display Years: 2008 to 2010

Revenues Expenditures

Revenue Name	FY2008	FY2009	FY2010
Sales Tax	250	250	250
Income Tax	325	325	325

**Revenue Details**

**Sales Tax**

Optional :

Enter a baseline tax rate to be used with budget calculator. This will not affect model results.

☐ Time Series

	Details	Details	All Years
Tax Rate	Percent		5

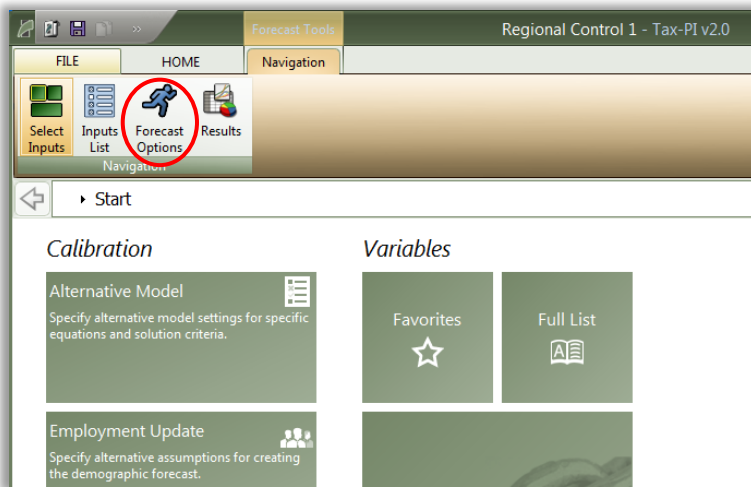
Once you have completed your budget, click the **OK** button and you will be returned to the **Budget Manager** box. The budget you have just created automatically saves in the **Budget Manager** box and will remain even if you start a new workbook, so you will not have to recreate the same budget again later. Exit the **Budget Manager** to run a fiscal simulation.

# Running a Budget Simulation

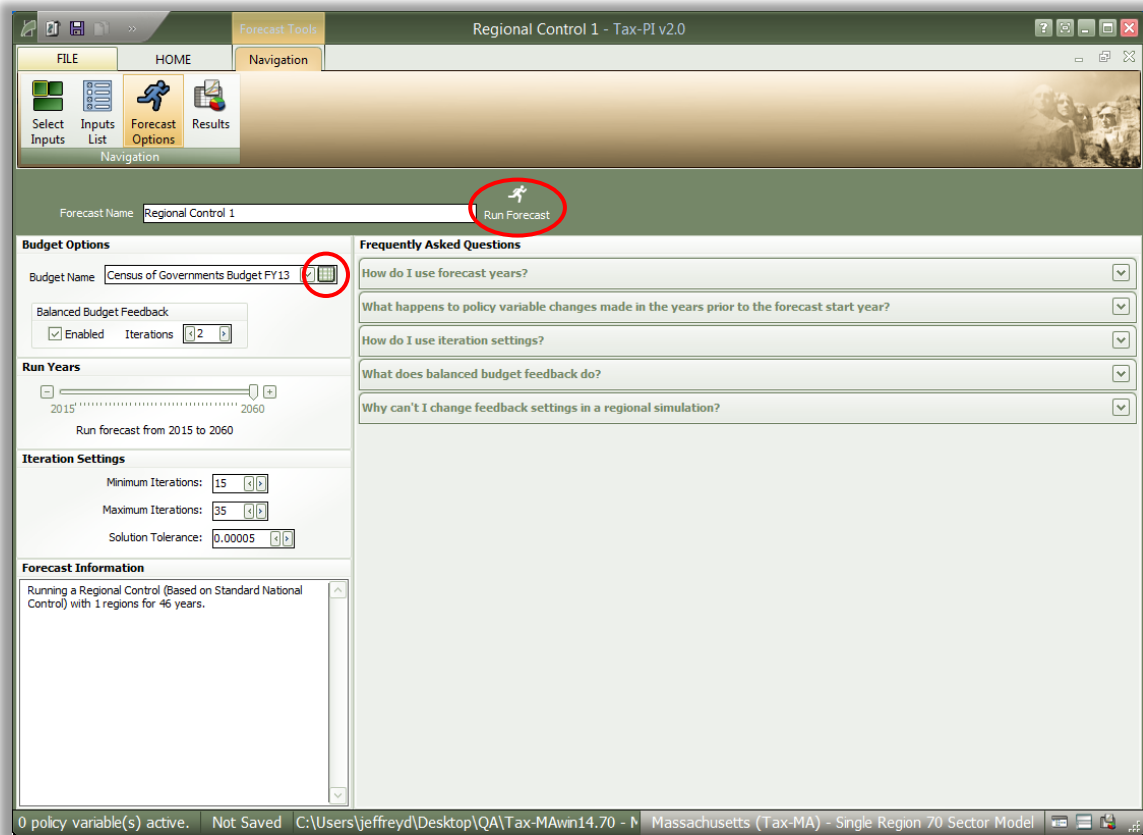
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## Activating the Customized Budget

Since you can create multiple budget scenarios within the **Budget Manager**, the model will not apply any specific budget scenario to the simulations unless you specify which you want to use. To do so, create a new **Regional Control** and select **Forecast Options**.

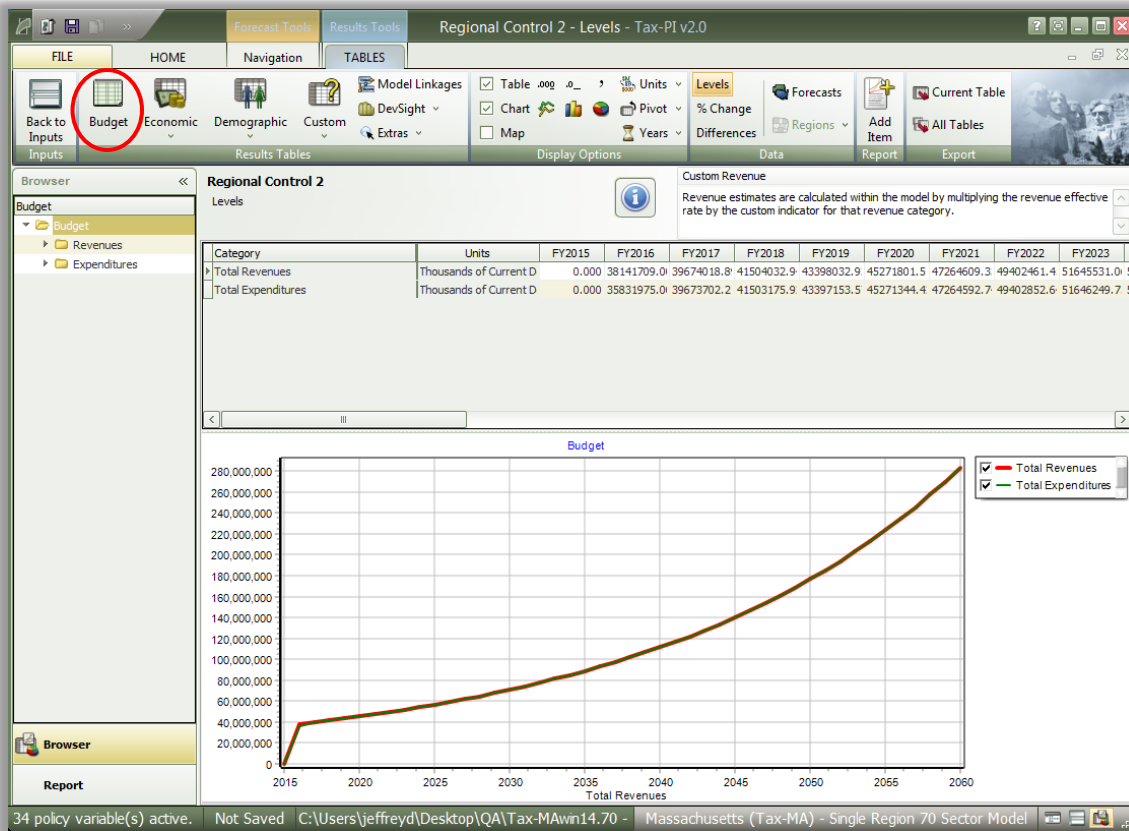


Select the budget scenario you want to use in your simulation by changing the **Budget Name**. Note that **Balanced Budget Feedback** option will be automatically enabled for at least two iterations for a budget in which **Expenditures are Determined By Revenues**. Clicking the icon next to the **Budget Name** opens the **Budget Calibration** window in order to view the values entered into the budget.



Please note that revenue and expenditure values cannot be edited in this view; to edit values in the budget, the **Regional Control** forecast must be closed.

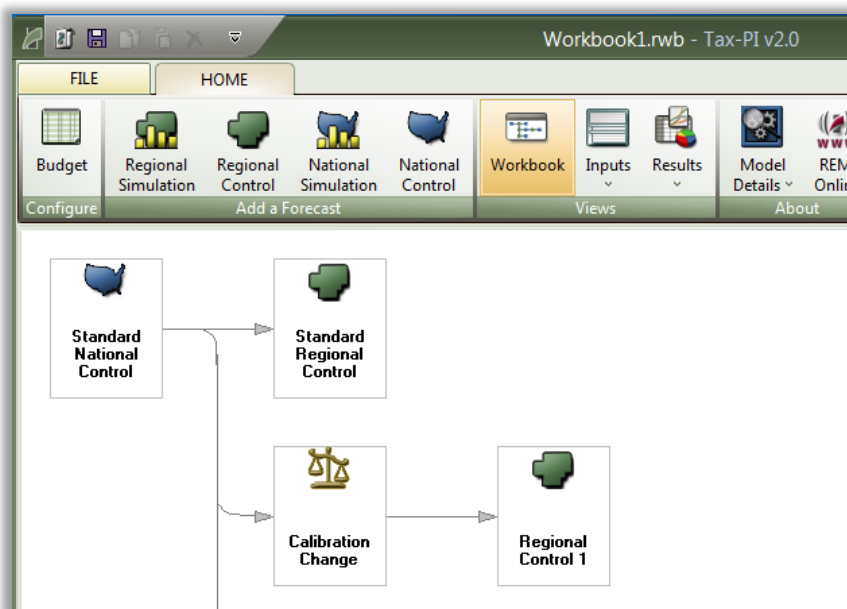
When you run the **Regional Control** with the selected budget (by clicking **Run Forecast**), you will be able to see the graphical form of your budget by clicking on the **Budget** button.



After a quick analysis of the results of the simulation you can see that **Total Revenues** and **Total Expenditures** are equal at each year and for that reason budget is balanced. By clicking on **Revenues** and **Expenditures** under **Budget** on the left, changes can be viewed in each of the revenue and expenditure components.

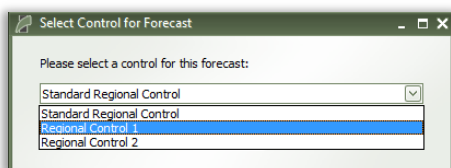
The program ran a certain number of iterations to balance the budget. However, if working with budget in which revenues are determined by demand, **Balanced Budget Feedback** can be disabled and the budget will be unbalanced. The results of the **Regional Control** simulation with disabled **Balanced Budget Feedback** option are shown on the next page.

If you return to the Workbook view by saving your current control results, you should see the original interface has changed to include icons to represent your new regional control with budget updates.

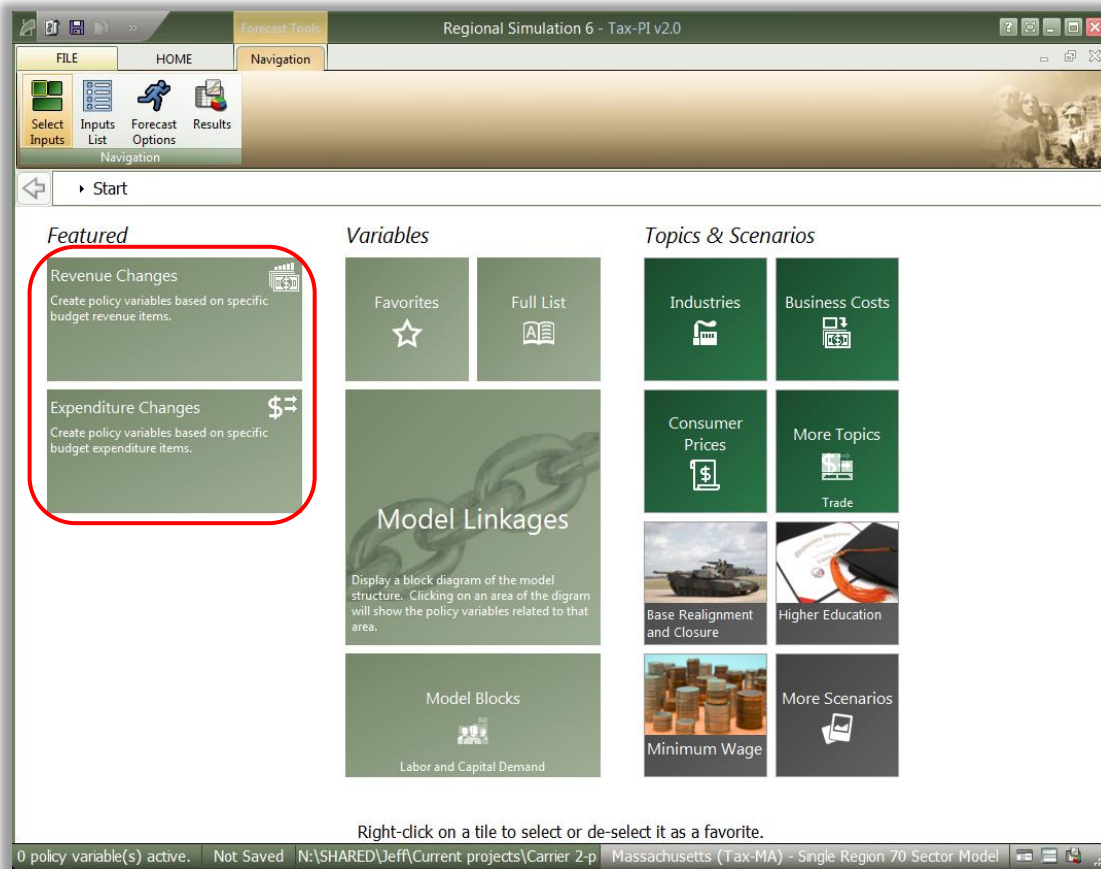


## Creating a New Simulation

To run a revenue-related policy simulation, start a new regional simulation and select the new baseline control you have just created.



In REMI 2.0, the revenue and expenditure changes policy variables are listed under **Featured** in the tiles on the left. **Revenue Changes** include policy variables that change budget revenue items, such as sales taxes or intergovernmental revenue. **Expenditure Changes** include policy variables that change budget expenditure items.



Click on the **Revenue Changes** button to view the list of options. For this sample scenario, select **Total Taxes (Corporation Net Income Taxes)** under **Detail**. Next, select **Massachusetts** under **Region** and then **Nominal Billions \$** for Units.

**New Revenues**

Name:

Variables Details Add to Editor Edit Values Cancel

**Custom Revenues**

**Detail (1)**  
Total Taxes (Corporation Net Income Taxes)

**Region (1)**  
Massachusetts

**Units**  
Nominal \$ (B)

**Detail**

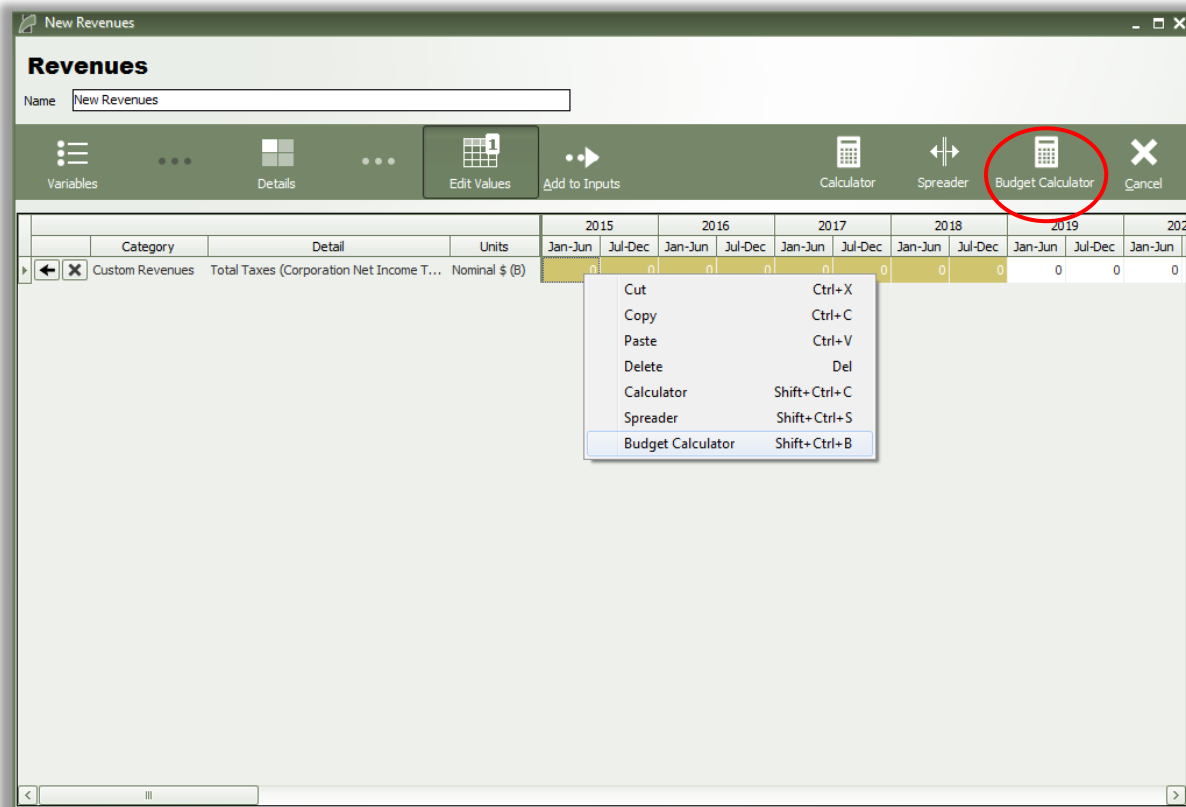
- Intergovernmental Revenue (From Federal)
- Intergovernmental Revenue (From Local)
- Total Taxes (General Sales and Gross Receipts Taxes)
- Total Taxes (Selective Sales and Gross Receipts Taxes)
- Total Taxes (License Taxes)
- Total Taxes (Individual Income Taxes)
- Total Taxes (Corporation Net Income Taxes)**
- Total Taxes (All Other Taxes)
- Current Charges
- Miscellaneous General Revenue
- Insurance Trust Revenue (Unemployment Compensation Systems)
- Insurance Trust Revenue (State-Administered Pension Systems)
- Insurance Trust Revenue (Workers' Compensation Systems)

Favorites

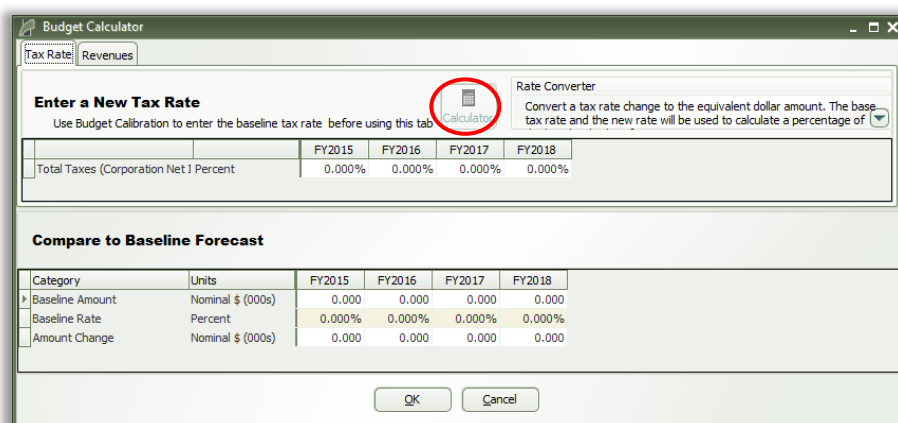
When all of the policy variable details have been selected, add the policy variable into the **Editor** by clicking on the **Add to Editor** button. A row for the **Custom Revenues** will appear for you to input values.

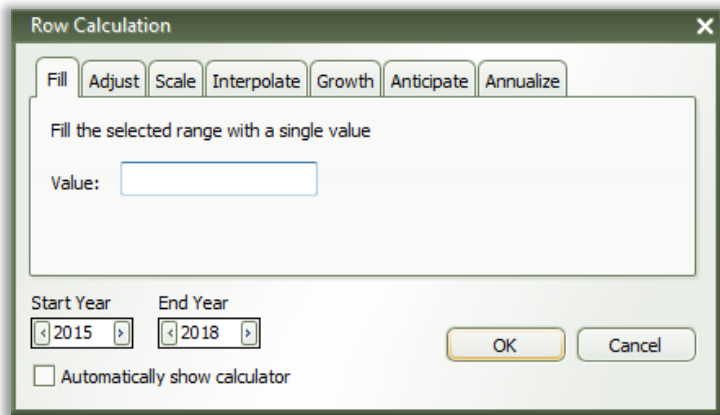
## Inputting Policy Values

Highlight the years 2015-2018 for this sample simulation and right click to select the **Budget Calculator**. The Budget Calculator can also be located on the ribbon above the values next to the **Calculator** and **Spreader** buttons, as seen circled in red below.



As you can see from the **Budget Calculator**, the initial Corporate Tax rate is already displayed for the years 2015-2018 on the first Tax Rate tab. The baseline data is also shown under the second heading. To change the tax rate to a different value, highlight the values and click on the **Calculator** button.





The Row Calculation tabs are defined below.

- **Fill**—Enters the same number in each of the selected cells. For example, if you enter 50, then the number 50 would appear in each cell in your selection.
- **Adjust**—Changes the selected cells by the percentage or amount that you enter.
- **Scale**—Changes the underlying value by a certain percentage entered in the field. For example, if the underlying Sales Tax rate is 5 percent and you want to increase the 5 percent by 125 percent, then enter 125 into the field to yield a new Sales Tax rate of 6.25%
- **Interpolate**—Selects the option to have the system work with your beginning and endpoint values for a particular row. For example, suppose that for a particular policy variable you have target values for every fifth year. Use this option to assign yearly values linearly interpolated between the five-year targets. You also have the option to make the model determine a geometrical growth rate between the endpoints, and distribute the change between those two points geometrically.
- **Growth**—Applies a growth rate to the initial value and the model will display the values for each year with growth from the year before by the growth rate
- **Anticipate**—Selects the option to calculate the value of a particular variable that a user would use to make a decision based on a future event that is anticipated with 100 percent certainty. For example, if a property tax increase of 3.2 percent is scheduled for three years from now, this function calculates the implicit value of the tax that would be used in business location decisions. To use this option, you need to enter the year the policy takes effect, the value for that year, the interest rate and the depreciation rate. Rates are entered as a percent.
- **Annualize**—Calculates the annualized payments required to pay the amount borrowed at a given interest rate for a fixed number of years. To use this option you need to enter the number of years over which the payments are to be made (or choose “Selected Years” if

the highlighted range reflects this number), the value being financed, and the interest rate. The rate is entered as a percent.

For this scenario, select the **Fill** tab and fill in 2 for the value. Notice that the current Start Year is 2015 and the current End Year is 2018, which can be changed through the range buttons within the **Row Calculator**. Click **OK**, and the **Corporation Net Income Taxes** percent for years 2015-2018 should be filled in with 2.000% as shown below.

**Budget Calculator**

Tax Rate | Revenues

**Enter a New Tax Rate**

Use Budget Calibration to enter the baseline tax rate before using this tab

Rate Converter  
Convert a tax rate change to the equivalent dollar amount. The base tax rate and the new rate will be used to calculate a percentage of

	FY2015	FY2016	FY2017	FY2018
Total Taxes (Corporation Net Income Taxes)	2.000%	2.000%	2.000%	2.000%

**Compare to Baseline Forecast**

Category	Units	FY2015	FY2016	FY2017	FY2018
Baseline Amount	Nominal \$ (000s)	0.000	0.000	0.000	0.000
Baseline Rate	Percent	0.000%	0.000%	0.000%	0.000%
Amount Change	Nominal \$ (000s)	0.000	0.000	0.000	0.000

OK Cancel

The second tab within the Budget Calculator is the *Revenues* tab. Within the tab, you can see the baseline values again and calculate the actual amount the baseline should change by from a certain tax rate. For example, copy and paste the Baseline Amount into the **Corporation Net Income Taxes** fields in the row above.

**Budget Calculator**

Tax Rate | Revenues

**Enter a Change in Revenues**

Budget Editor  
The baseline budget forecast and the calculator can be used to convert a percentage change to the equivalent dollar amount.

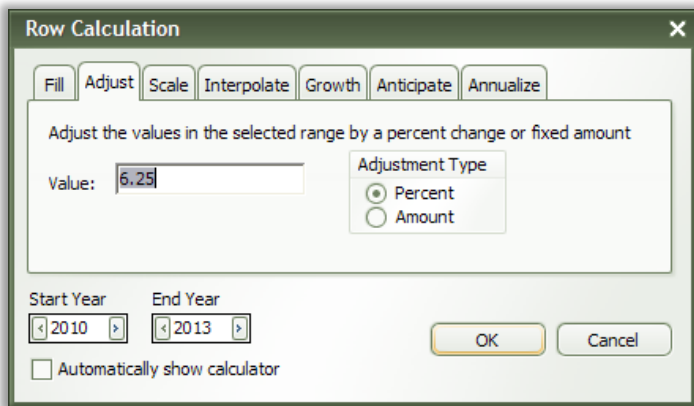
	FY2015	FY2016	FY2017	FY2018
Total Taxes (Corporation Net Income Taxes)	0.000	0.000	0.000	0.000

**Compare to Baseline Forecast**

Category	Units	FY2015	FY2016	FY2017	FY2018
Baseline Amount	Nominal \$ (000s)	0.000	0.000	0.000	0.000
Percent Change	Percent	0.000%	0.000%	0.000%	0.000%

OK Cancel

The **Calculator** can be used to adjust the values, such as by a specific percentage.



**Row Calculation**

Fill Adjust **Scale** Interpolate Growth Anticipate Annualize

Adjust the values in the selected range by a percent change or fixed amount

Value:

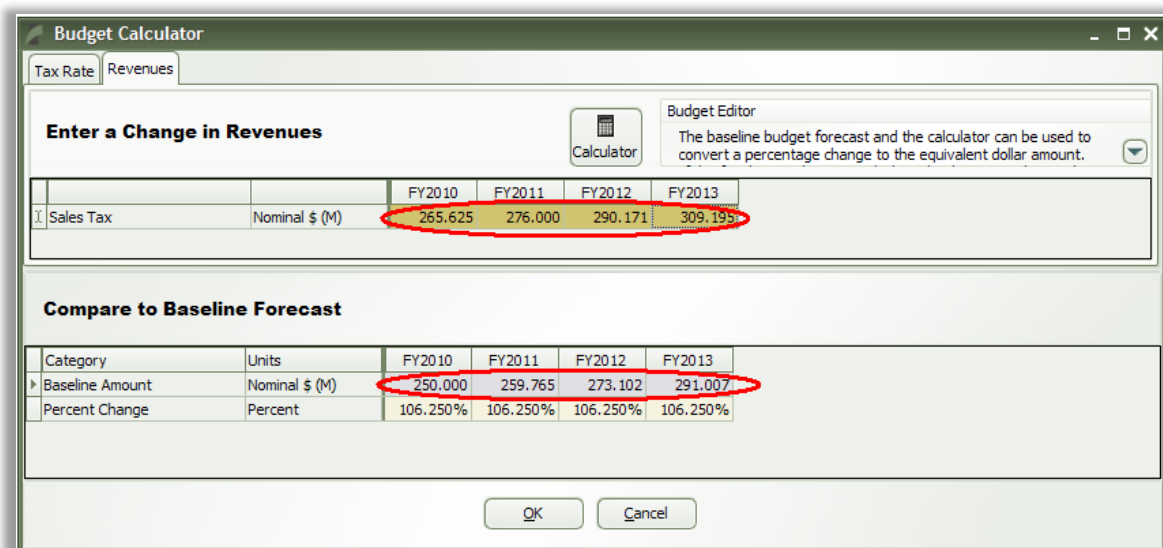
Adjustment Type  
☒ Percent  
☐ Amount

Start Year:  End Year:

☐ Automatically show calculator

OK Cancel

Click **OK** and notice how the values of the Sales Tax have changed to adjust for a 6.25 percent increase as compared to the baseline values in the row below.



**Budget Calculator**

Tax Rate Revenues

**Enter a Change in Revenues**

Calculator

Budget Editor  
The baseline budget forecast and the calculator can be used to convert a percentage change to the equivalent dollar amount.

		FY2010	FY2011	FY2012	FY2013
[-] Sales Tax	Nominal \$ (M)	265.625	276.000	290.171	309.195

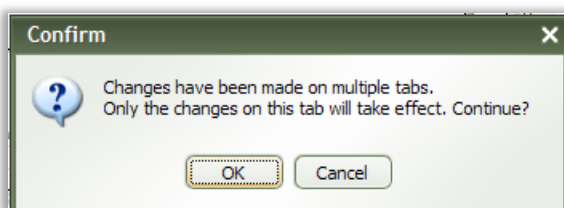
**Compare to Baseline Forecast**

Category	Units	FY2010	FY2011	FY2012	FY2013
[-] Baseline Amount	Nominal \$ (M)	250.000	259.765	273.102	291.007
Percent Change	Percent	106.250%	106.250%	106.250%	106.250%

OK Cancel

The purpose of the **Revenues** tab within this **Budget Calculator** is to allow the user to see the changes made to the underlying values in absolute terms.

Now, click **OK** to enter and a pop up should appear to let you know only changes made in the current tab displayed is included in the simulation.



**Confirm**

Changes have been made on multiple tabs.  
Only the changes on this tab will take effect. Continue?

OK Cancel

Click **OK** again, and the new values from the **Revenues** tab should appear within the editor grid.

**New Revenues**

Name:

Variables Details Edit Values Add to Inputs Calculator Spreader Budget Calculator Cancel

	Category	Detail	Units	2015		2016		2017		2018		2019		2020	
				Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec
<input checked="" type="checkbox"/>	Custom Revenues	Total Taxes (Corporation Net Income T...	Nominal \$ (B)	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0	0	0	0	0



Note: there is an input within the **Editor** grid for the Custom Revenues policy variable. Now, click on **Add to Inputs**. You will be directed back to the **Variable Inputs List** view, which now displays the revenue-related policy variable that was just entered.

**Policy Variable Inputs**

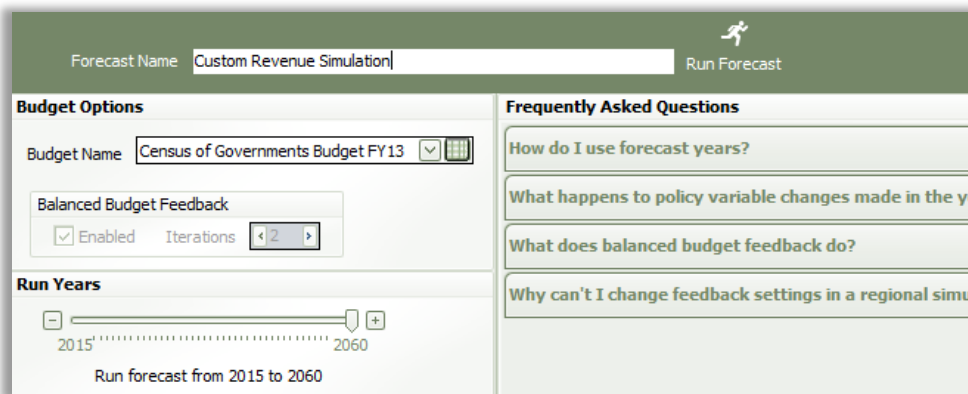
Active Edit Group

☒ ☒ New Revenues

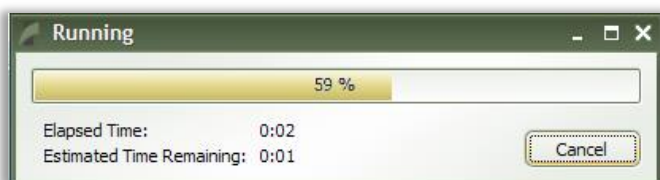
Active	View	Category	Detail	Region	Units	2015	2016	2017	2018
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Custom Revenues	Total Taxes (Corporation Net Income Taxes)	Massachusetts	Nominal \$ (B)	0.015	0.01	0.01	0.005

Note that no changes to policy variables or values may be made here. You can, however, make the policy variables inactive or active by unchecking and checking the box . Only active variables will be included when the simulation is run. To go back and edit policy variables or their values, click on the **Edit** button , which will take you back to the **Editor** view.

At this point, you can give the forecast simulation a meaningful name by changing the text in the Forecast Name text box. This will make it easier for you to identify this simulation while you are in the Workbook view. For this example, rename “Regional Simulation 1” to “Custom Revenue Simulation.”



Click on **Run Forecast** to run the simulation. A status bar will pop up to display the run time before the model takes you to the results in the **Results** view.

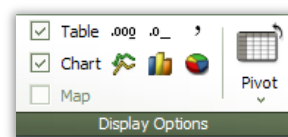


The default view displays the **Economic Summary** in both table and line chart formats.

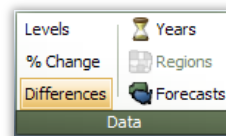
## Understanding Forecast Display Functions

The top ribbon in the Results View contains Results Tools that allows you to adjust the display of the forecast results.

Click the **Tables** tab on the top of the screen. The **Display Options** group provides a map view, buttons for adjusting decimal precision, chart type, and pivot views.



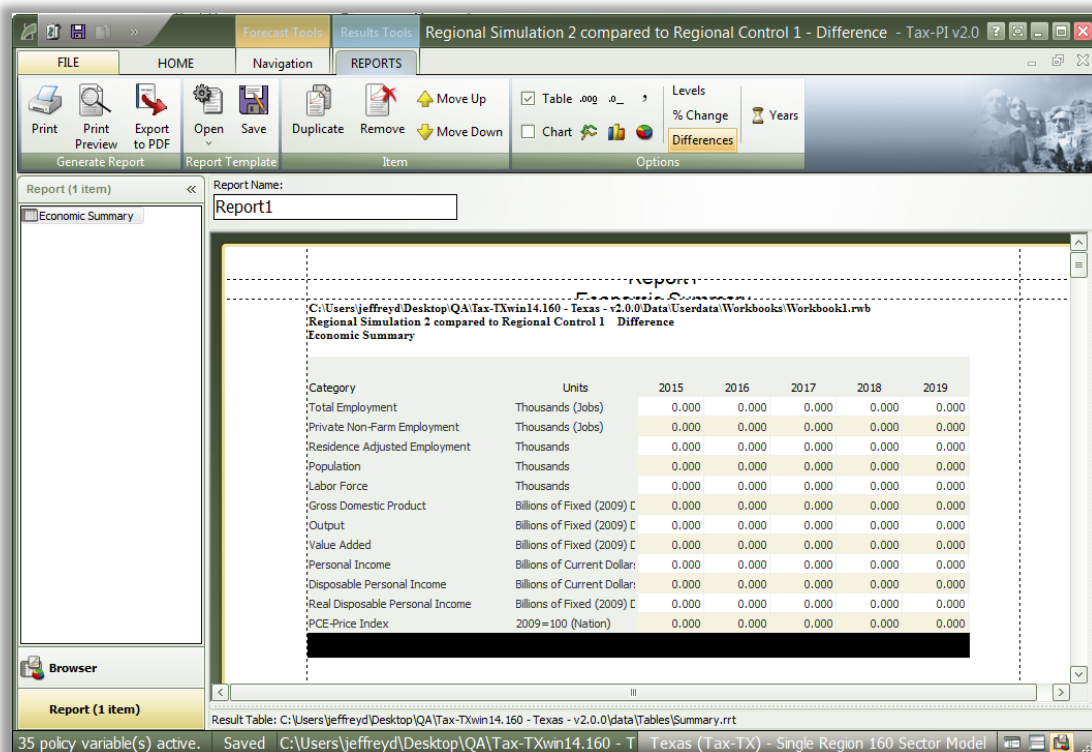
The **Data** group provides buttons for viewing the data as levels, percent change, or differences. It also allows for adjustments to the years, regions, and forecasts being viewed.



The **Report** group allows you to add items to create and save customized reports in the **Report** view. If you click on the button, the **Report** view on the left side bar will include the **Economic Summary** that you have just added.

If you click on the **Report** view, you can rename the Report Name to Consumer Price Simulation by typing in the name and clicking out of the textbox.

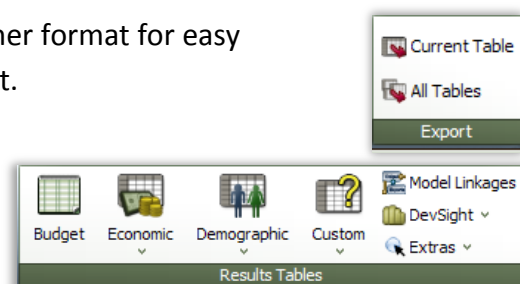




To return to the previous view, click the **Browser** button, located directly above the **Report** button.

The **Export** group allows you to save a table to another format for easy import into other applications, such as a spreadsheet.

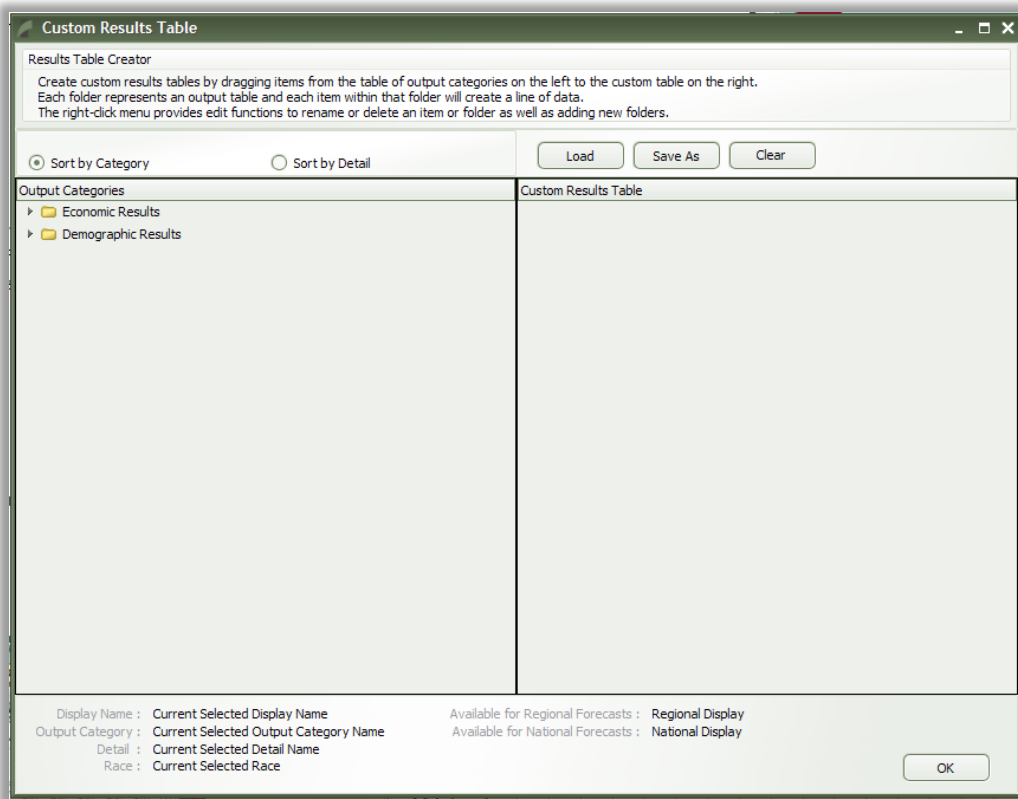
More detailed forecast results can be viewed in other formats through the options found in the **Results Tables** group.



The **Budget** button allows you to view the budgetary impacts of the policy variable.

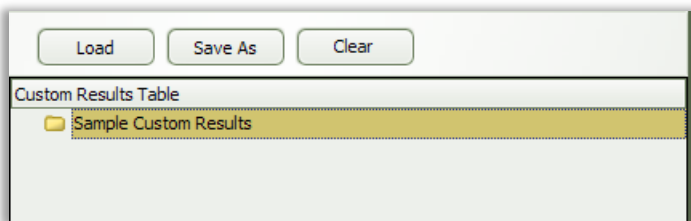
The **Economic** and **Demographic** buttons gives you an organized list of economic and demographic variables that you can see the forecast results of. If you find sifting through the lists for every simulation you run to be time-consuming when you want to view only select variables all at once, you can use the **Custom** button to build your own display view.

Click on the **Custom** button and then **Edit Custom Tables** for the **Custom Results Table Creator**.

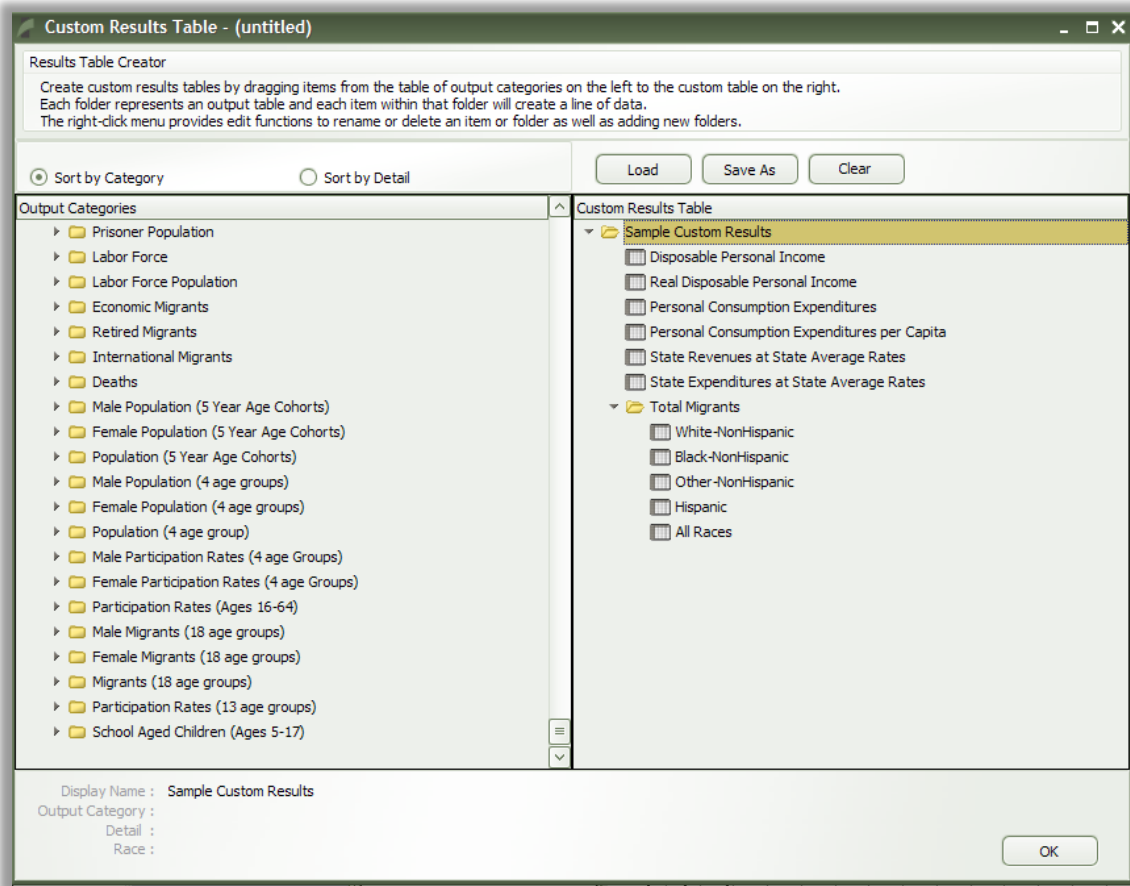


The folders under **Output Categories** open up to more folders that contain the same economic and demographic variables you would find under the **Economic** and **Demographic** buttons in the **Results Table**.

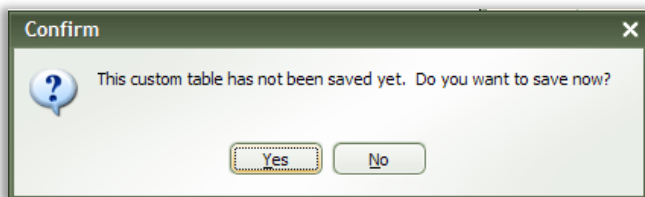
To create a folder to organize your custom results summary variables, right click in the **Custom Results Table** box and click on **Insert New Group**. A folder titled **New Group 0** will appear and you can rename the folder to **“Sample Custom Results”** by right-clicking on the folder and selecting **Rename**.

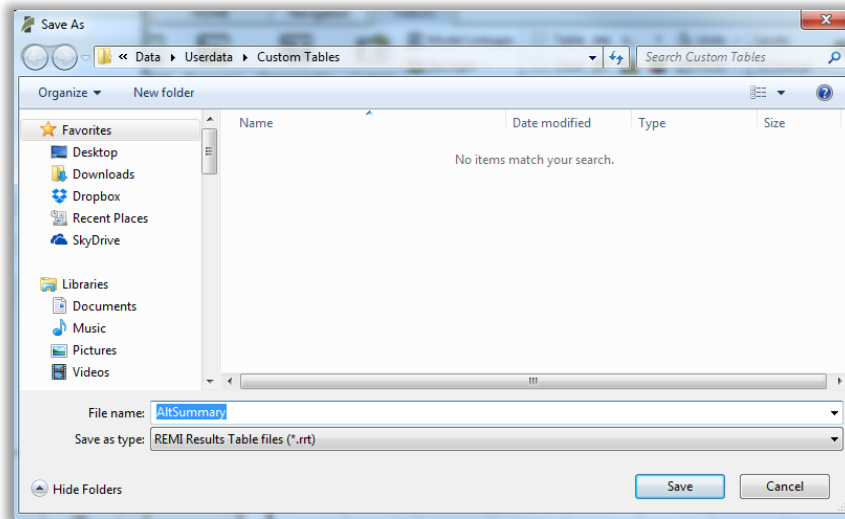


To add variables to the **Sample Custom Results** folder, open the **Economic Results** folder on the left column and click-and-drag the following variables on top of the Sample Custom Results folder on the right column. You can do the same for demographic variables as well.



These economic and demographic selections are optional and not required. You may find other selections more helpful for your own analysis. Also, if you do not need a custom results table, this section of the documentation can be ignored. Otherwise, click **OK** and you will be prompted to save the custom results table.

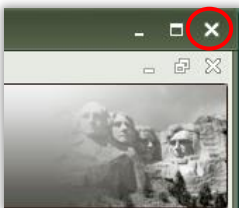




When you save the custom results table as ***“Sample Custom Results”***, you will be returned to the **Results View** with the **Sample Custom Results** automatically displayed.

Finally, the last three buttons within the **Results Tables** are simply other predefined views of the forecast results that can be used. The **Model Linkages** button is used to view a flowchart of the economic linkages built within the model. Selecting the **Model Linkages** button will allow you to view the results of economic and demographic inputs in each of the five key blocks. The **DevSight** button allows you to view the input values in the determinants of development, such as Demographics, Industries, and Occupation. The **Extras** button displays miscellaneous graphical and table views of results including Analytical Graphs, Income Distribution, and Unemployment, which is not found in the other two buttons.

When done viewing the simulation results, close the **Results** tab window by clicking on lower **X** in the upper right hand corner.



Be sure to save and rename your workbook when you are done.

# Glossary of Terms

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## Revenue Indicators

Revenue Indicators are Economic and Demographic variables that most closely gauge the expected level of income for individual categories (types) of revenue.

### Personal Income

Personal Income is the income that is received by all persons from all sources. It is calculated as the sum of **Wage and Salary Disbursements, Supplements to Wages and Salaries, Proprietors' Income with inventory valuation and capital consumption adjustments, Rental Income of persons with capital consumption adjustment, Personal Dividend Income, Personal Interest Income, and Personal Current Transfer Receipts**, less **Contributions for Government Social Insurance**.

The personal income of an area is the income that is received by, or on behalf of, all the individuals who live in the area; therefore, the estimates of personal income are presented by the place of residence of the income recipients.

### Personal Income minus Personal Current Transfer Receipts

Personal Income minus Personal Current Transfer Receipts is the income that is received by all persons from all sources excluding personal current transfer receipts.

Personal Current Transfer Receipts represent the payments to persons for which no current services are performed. It consists of payments to individuals and to nonprofit institutions by Federal, state, and local governments and by businesses. Government payments to individuals includes retirement and disability insurance benefits, medical payments (mainly Medicare and Medicaid), income maintenance benefits, unemployment insurance benefits, veterans' benefits, and Federal grants and loans to students. Government payments to nonprofit institutions exclude payments by the Federal Government for work under research and development contracts. Business payments to persons consist primarily of liability payments for personal injury and of corporate gifts to nonprofit institutions.

### **Total Earnings by Place of Work**

Total Earnings by Place of Work is the sum of **Wage & Salary Disbursements, Supplements to Wages and Salaries, and Proprietors' Income.**

### **Total Wage and Salary Disbursements**

Total Wage and Salary Disbursements are the monetary remuneration of employees, including the compensation of corporate officers; commissions, tips, and bonuses; voluntary employee contributions to certain deferred compensation plans, such as 401(k) plans; and receipts in kind that represent income.

### **Employer Contributions for Employee Pension and Insurance Funds**

This component of personal income consists of employer payments to private and government employee retirement plans, private group health and life insurance plans, privately administered workers' compensation plans, and supplemental unemployment benefit plans.

### **Employer Contributions for Government Social Insurance**

These contributions, which are subtracted in the calculation of personal income as part of contributions for government social insurance, consist of employer payments under the following Federal, state, and local government programs: Old-age, survivors', and disability insurance (OASDI); hospital insurance (HI); unemployment insurance; railroad retirement; government employee retirement; pension benefit guaranty; veterans' life insurance; publicly-administered workers' compensation; military employee programs (veterans' life and military medical insurance); and temporary disability insurance.

### **Proprietors' Income with Inventory Valuation and Capital Consumption Adjustments**

This component of personal income is the current-production income (including income in kind) of sole proprietorships and partnerships and of tax-exempt cooperatives. Corporate directors' fees are included in proprietors' income, but the imputed net rental income of owner-occupants of all dwellings is included in rental income of persons. Proprietors' income excludes

dividends and monetary interest received by nonfinancial business and rental incomes received by persons not primarily engaged in the real estate business; these incomes are included in dividends, net interest, and rental income of persons, respectively.

### **Employee and Self-Employed Contributions for Government Social Insurance**

These contributions, which are subtracted in the calculation of personal income, consist of the contributions or payments by employees, by the self-employed, and by other individuals who participate in the following government programs: Old-age, survivors', and disability insurance (social security); hospital insurance; supplementary medical insurance; unemployment insurance; railroad retirement; veterans' life insurance; and temporary disability insurance.

### **Rental, Personal Interest, and Personal Dividend Income**

Rental Income is the net income of persons from the rental of real property except for the income of persons primarily engaged in the real estate business; the imputed net rental income of the owner-occupants of nonfarm dwellings; and the royalties received from patents, copyrights, and the right to natural resources.

Personal Interest is the interest income (monetary and imputed) of persons from all sources.

Personal Dividend Income consists of the payments in cash or other assets, excluding the corporation's own stock, made by corporations located in the nation or abroad to persons who are residents of the nation. It excludes that portion of dividends paid by regulated investment companies (mutual funds) related to capital gains distributions.

### **Personal Consumption Expenditures (PCE)**

PCE is the expenditure on goods and services out of local real disposable income, and is a final demand component of **Gross Regional Product**.

### **Demand**

Demand is the amount of industry goods and services demanded by the local region (imports plus self supply).

## **Output**

Output is the amount of industry production, including all intermediate goods purchased as well as **Value Added** (compensation and profit). It can also be thought of as sales or supply. The components of Output are **Self Supply** and Exports (*Multiregions, Rest of Nation, and Rest of World*).

## **Value Added**

Value Added is a measure of the contribution of each private industry and of government to a region's **Gross Domestic Product**. It is defined as an industry's gross output (which consists of sales or receipts and other operating income, commodity taxes, and inventory change) minus its intermediate inputs (which consist of energy, raw materials, semi-finished goods, and services that are purchased from domestic industries or from foreign sources). Value Added by industry can also be measured as the sum of compensation of employees, taxes on production and imports less subsidies, and gross operating surplus.

## **Total Capital Stock**

Total Capital Stock is a total value of structures (accumulation of investment, residential and nonresidential) less depreciation.

## **Regional Residential Actual Capital Stock**

Regional Residential Actual Capital Stock is a total value of residential structures (accumulation of investment) less depreciation.

## **Regional Nonresidential Actual Capital Stock**

Regional Nonresidential Actual Capital Stock is a total value of non-residential structures (accumulation of investment) less depreciation.

### **Population**

Population reflects mid-year estimates of people, including survivors from the previous year, births, special populations, and three types of migrants (economic, international, and retired).

### **Gross Private Domestic Fixed Investment**

Gross Private Domestic Fixed Investment consists of purchases of residential and nonresidential structures and of equipment and software by private businesses and by nonprofit institutions. (Owner-occupied housing is treated like a business in the NIPAs.). It is measured without a deduction for consumption of fixed capital (CFC), includes replacements and additions to the capital stock, and excludes investment by U.S. residents in other countries.

### **Intermediate Demand**

Intermediate Demand is the demand for material inputs to the production of final goods

### **Local Consumption Demand**

Local Consumption Demand is the demand for consumer goods.

### **Government Demand**

Government Demand is the demand for goods and services by government expenditures.

### **Investment Activity Demand**

Investment Activity Demand is the demand for capital goods.

### **Self Supply**

Self Supply is the amount of local demand supplied locally (Regional Purchase Coefficient multiplied by Demand).

### **Total Imports**

Total Imports is the amount of goods and services produced outside of the region that are consumed locally.

### **Imports from Rest of Nation**

Imports from Rest of Nation is the amount of goods and services produced in the rest of nation that are consumed locally.

### **Imports from Rest of World**

Imports from Rest of World is the amount of goods and services produced in the rest of the world that are consumed locally.

### **Total Exports**

Total Exports is the amount of local production exported out of the local region.

### **Exports to Rest of Nation**

Exports to the Rest of Nation is the amount of local production exported out of the local region to the rest of the nation.

### **Exports to Rest of World**

Exports to the Rest of the World is the amount of local production exported out of the local region to the rest of the world.

### **None**

None represents no indicator, and the value will be set at zero for future years.

### **Constant Value**

Constant value represents a flat amount, with the last calibrated value extended forward throughout the forecast period at the set amount.

### **Personal Current Transfer Receipts**

Personal Current Transfer Receipts are payments to persons for which no current services are performed. It consists of payments to individuals and to nonprofit institutions by Federal, state, and local governments and by businesses. Government payments to individuals include retirement and disability insurance benefits, medical payments (mainly Medicare and Medicaid), income maintenance benefits, unemployment insurance benefits, veterans' benefits, and Federal grants and loans to students. Government payments to nonprofit institutions exclude payments by the Federal Government for work under research and development contracts. Business payments to persons consist primarily of liability payments for personal injury and of corporate gifts to nonprofit institutions.

### **Capital Portion of Value Added Plus Proprietors' Income**

Capital Portion of Value Added Plus Proprietors' Income is a proxy for corporate income.

### **Value Added Less Earnings**

Value Added Less Earnings is a proxy for corporate profits.

### **Federal Government Civilian Spending**

Federal Government Civilian Spending is the amount the Federal Civilian sector spends on employees, goods, and services in the local area. Federal Civilian government spending is allocated to the local area based on its share of Federal Civilian employment in the last history year relative to the nation.

## Expenditure Indicators

Expenditure Indicators are Economic and Demographic variables that most closely gauge the expected level of spending for individual categories (types) of expenditures.

### **Population**

Population reflects mid-year estimates of people, including survivors from the previous year, births, special populations, and three types of migrants (economic, international, and retired).

### **State Government Employment**

Employment comprises estimates of the number of jobs, full-time plus part-time, by place of work. Full-time and part-time jobs are counted at equal weight. Employees, sole proprietors, and active partners are included, but unpaid family workers and volunteers are not included.

### **Prisoner Population**

Prisoner Population is the number of prisoners. Prisoners include people incarcerated in state or federal prisons, or in local jails.

### **Dependent Share of Population**

Dependent Share of Population is the portion of the population that is not employed.

### **Gross Domestic Product (GDP)**

GDP is the market value of goods and services produced by labor and property in the region, regardless of nationality.

### **None**

None represents no indicator, and the value will be set at zero for future years.

### **Constant Value**

Constant value represents a flat amount, with the last calibrated value extended forward throughout the forecast period at the set amount.

# Getting Additional Help

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Help is available in the following forms:

- REMI Technical Support
- REMI's Web site, [www.remi.com](http://www.remi.com)

## Contacting REMI Technical Support

You may contact REMI Technical Support at 413-549-1169. Be sure to be sitting near your computer so a REMI support person can help you with your problem.

## REMI's Web Site

REMI's Web site, [www.remi.com](http://www.remi.com), contains a Frequently Asked Questions (FAQ) page, a glossary of terms, and extensive productive documentation. There is also a listing of upcoming REMI conferences. You can also contact a member of the REMI staff anytime by sending an e-mail to [info@remi.com](mailto:info@remi.com).