



PI<sup>+</sup> v2.4  
TranSight v4.4  
Tax-PI v2.4  
Metro-PI v2.4

(changes from v2.3/4.3)

### *Major Economic Data Sources*

#### **Employment**

County	BEA LAPI (sector industries; 2001-2018) <sup>1</sup> CBP (detail industries; 2016)
State	BEA SPI (summary industries; 2001-2018) <sup>2</sup> CBP (detail industries; 2016)
National	BEA SPI (summary industries; 2001-2018) <sup>2</sup> CBP (detail industries; 2016) BLS EP (detail industries; 2001-2018 and 2028) <sup>3</sup>

#### **Wages**

County	BEA LAPI (total; 2001-2018) CBP (detail industries; 2016)
State	BEA SPI (summary industries; 2001-2018) CBP (detail industries; 2016)
National	BEA SPI (summary industries; 2001-2018) CBP (detail industries; 2016)

#### **Personal Income and Earnings**

County	BEA LAPI (components and summary industries; 2001-2018)
State	BEA SPI (components and summary industries; 2001-2018)

<sup>1</sup> The BEA Local Area Personal Income (LAPI) series used for v2.4/v4.4 is based on their 10/31/2019 release. The estimates for 2001-2006 are based on the 2002 North American Industry Classification System (NAICS). The estimates for 2007-2010 are based on the 2007 NAICS. The estimates for 2011-2016 are based on the 2012 NAICS. The estimates for 2017 forward are based on the 2017 NAICS.

<sup>2</sup> The BEA State Personal Income (SPI) series used for v2.4/v4.4 is based on their 09/10/2019 release. The estimates for 2001-2006 are based on the 2002 North American Industry Classification System (NAICS). The estimates for 2007-2010 are based on the 2007 NAICS. The estimates for 2011-2016 are based on the 2012 NAICS. The estimates for 2017 forward are based on the 2017 NAICS.

<sup>3</sup> The BLS Employment Projections (EP) data used for PI<sup>+</sup> v2.4/v4.4 is based on their 09/04/2019 release.

National	BEA SPI (components and summary industries; 2001-2018) BLS EP (components; 2001-2018 and 2028) RSQE (components; 2020-2022) <sup>4</sup>
<b><u>Compensation</u></b>	
County	BEA LAPI (components and summary industries; 2001-2018)
State	BEA SPI (components and summary industries; 2001-2018)
National	BEA SPI (components and summary industries; 2001-2018)
<b><u>Commuter Flows</u></b>	
County to County	BEA (gross flow of earnings by county; 2001-2018) BEA (total number of workers commuting between counties of residence and counties of work; 1990, 2000) BEA (commuting patterns between counties of work and counties of residence by major industry; 2000) ACS (residence county to residence workplace county flows; 2009-2013)
<b><u>Technology Matrix</u></b>	
National	BLS (detailed industries; 2001-2018 and 2028)
<b><u>Detailed Industry Policy Variables</u></b>	
National	BEA Benchmark 2012 IO Table
<b><u>Final Demand</u></b>	
State	BEA (consumption for major categories; 2001-2018)
National	BEA (components; 2001-2019) RSQE (components; 2020-2022) BLS EP (components and industry value added; 2001-2018, 2028)
<b><u>GDP by Industry</u></b>	
County	BEA GDP by County (21 major categories; 2001-2018)
State	BEA GDP by State (summary industries; 2001-2018)
National	BLS EP (detailed industries; 2001-2018 and 2028)
<b><u>Occupation Matrix</u></b>	
National	BLS EP (employment by industry and occupation; 2018 and 2028)
<b><u>Price Deflators</u></b>	
State	BEA Implicit Price Deflators (aggregate; 2008-2017)
National	BEA Personal Income Price Deflator (aggregate; 2001-2018)
National	BEA Commodity Prices (detailed categories; 2001-2018)
National	BLS EP (detailed industries; 2001-2018 and 2028)

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<sup>4</sup> The 19 March 2020 RSQE Forecast (Prolonged Fallout) is used for v2.4/v4.4.

## ***Major Demographic Data Sources***

### **Population**

County	BEA (total; 2001-2018)
County	Census(age, sex, race; 2000-2018)

### **Demographic Components of Change**

County	Census (2000-2018)
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### **Labor Force**

County	BLS (total; 2000-2018)
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### **Nativity Rates**

Nation	Census(2001-2100)
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### **Birth Rates**

State	CDC (2001-2018)
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### **Survival Rates**

Nation	Census(2001-2100)
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### **Net International Migrants**

Nation	Census(2001-2100)
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### **Participation Rates**

Nation	BLS (2001-2028)
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### **Active Military**

Base	DoD (total; 2001-2009)
State	DoD (total; 2005-2018)
Nation	DoD (total, sex, race; 2001-2017)
County	American Community Survey (2005-2018)

### **Military Dependents**

Nation	DoD (total; 2001-2005)
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### **Prisoners**

County	Census(sex, race, facility; 1990; 2000; 2010)
	Bureau of Justice Statistics (50 largest jail jurisdictions mapped to counties; 2001-2017)
	Bureau of Prisons (facilities mapped to counties; 2005-2018)
	Various state-specific correctional websites

### **College Enrollment**

County	Census (2000; 2010)
	American Community Survey (2005-2018)
State	National Center for Education Statistics (2000-2017)
National	National Center for Education Statistics (2000-2017)

## **Incorporation of BLS 2018-28 Employment Projections**

National projections include the input-output table, employment, output, value-added, labor productivity, and deflators by detailed industry: final demand by component; personal income by component; labor force; and occupations by detailed industry. (Dubina, Kevin; Morisi, Teri; Rieley, Michael; and Wagoner, Andrea, "Projections Overview and Highlights, 2018–28," Monthly Labor Review, October 2019.)

## **Updates to Local Area Personal Income**

From the BEA website:

“The estimates of 2018 local area personal income incorporate the results of BEA's annual update of local area personal income. The annual estimates for 1998-2017 were revised. The update incorporates revised source data that are more complete and more detailed than previously available, the results of the July 2019 annual update of the National Income and Product Accounts, and the results of the September 2019 annual update of state personal income.”

## **Incorporation of Improved BEA GDP by County Data**

The BEA now provides GDP by county statistics for 2001-2018 for more detailed industries. From the BEA website:

“This is BEA's first official release of GDP by county statistics for 2001–2018 for all counties in the United States. The GDP by county statistics incorporate new and additional source data and methodology improvements to the December 2018 prototype GDP by county statistics. This release also expands the industry detail.”

This new GDP by county data allowed us to extend our previous data source from a limited historical time series (2012-2015) and 3 major categories to the entire model history period (2001-2018) and 21 major industries. We take this data into account (in addition to the State GDP data for major industries previously available) when allocating national output data to counties over the historical period. There may be some significant shifts in the historical series by industry and county due to the information provided in this new data set.

## **Updated Detailed Occupation List**

The BLS redefined the detailed occupations reported in their 2018-2028 National Employment Matrix. REMI has revised the detailed occupation list according to the updated BLS occupation list.

*“Mathematical technicians (15-2091)” and “Mathematical science occupations, all other (15-2099)” are replaced by “Miscellaneous mathematical science occupations (15-2090)”.*

*“Medical and clinical laboratory technologists (29-2011)” and “Medical and clinical laboratory technicians (29-2012)” are replaced by “Clinical laboratory technologists and technicians (29-2020)”.*

*“Tour guides and escorts (39-7011)” and “Travel guides (39-7012)” are replaced by “Tour and travel guides (39-7000)”.*

*“First-line supervisors of helpers, laborers, and material movers, hand (53-1021)” and “First-line supervisors of transportation and material-moving machine and vehicle operators (53-1031)”*

are replaced by “*First-line supervisors of transportation and material-moving machine and vehicle operators (53-1048)*”.

### **Automated Studies**

This new feature allows users create and run multiple simulations and to compare simulation results to each other.

- The Forecast Ranking Study can be used to rank simulations based on custom scoring methods.
- The Multiplier study automates the process for calculating different types of multipliers for different regions and industries.

### **Automatic Forecast Running**

Multiple forecasts can be added to a queue and run automatically in sequence.

### **Default Regional Controls for Alternative National Controls**

Each alternative national forecast will generate its own default regional control and new regional controls will be built off that default control.

### **Redesign of Macroeconomic Update, Employment Update, and Population Update**

The forms have been redesigned to help guide users through the process. The grids can be autofilled with baseline values or percent changes from the baseline. Population Update can be filled using custom age aggregations and Employment Update can be filled using custom industry aggregations.

### **Detailed Government Policy Variable Translators**

Detailed Government inputs can now be specified for categories like public schools, public transportation, etc.

### **Custom Results**

- If the custom result is compatible with the policy variable, the custom result can be used as a spreading weight for policy variables.
- Coefficients from the Input-Output table can be used as constants when defining Constant Factor custom results.

### **Policy Variable Warnings**

Warning will be generated for policy variables if the variable is not expected to have an effect on the model, such as a 10% change to employment for an industry with 0 employment.

### **New Tools for Customizing Results**

- Tables can be pivoted by dragging and dropping column headers.
- Table fields options can be changed by right-clicking on the column headers

- Units for the table can be changed by right-clicking on the Units column header.
- When switching between chart and table options, the current pivot is always displayed first.
- A 'Reload' option has been added to the table and chart right-click menus to restore it to its original state.
- Tables with Origin and Destination fields can now be filtered like other fields.
- A path filter has been added to the Connections Explorer to help focus on a specific path between model results.

### **Flexible Custom Aggregations**

Custom Aggregations now have a flexible option that allows details to be assigned to multiple groups or not be assigned to any group.

### **Documentation**

- Documents have been organized into several groups.
- 'What's New' has been added to show new software features.
- Industry, commodity, and occupation lists have been removed from the documentation and are now available in 'Model Details'.

### **Importing and Exporting Settings**

All user settings can now be bundled into a single file that can be easily transferred across computers or between users.

### **National Input-Output Table Display**

- History years have been added.
- Sections of the I-O table have been color coded to improve readability.
- Hints have been added to explain the I-O coefficients.
- Filtering has been added for the rows and columns.
- I-O Columns can be viewed as in a stacked bar graph.
- A 'Jump to' feature has been added to help navigate the table.

### **Industry, Occupation, and Commodity Lists**

- The lists have been removed from the documentation folder and added to 'Model Details'.
- The lists can be customized toggling on / off different levels of detail and rearranging columns.
- The lists have Print, Save to PDF, and Save to Excel functions.
- A search box is included on each list.

### **Miscellaneous**

- Excel cells with Currency, Accounting, Percentage and other formatting can now be copied and pasted directly into inputs.

- Search feature added to Policy Variables and Result Variables lists in Model Details
- Delete buttons added for policy variables on Inputs List.
- The private, government, and farm Detailed Policy Variable Translator coefficients are now displayed together in the Model Details and they are grouped by sector.
- Cancel button added to Save Forecast dialog.