REMI PI+ v1.3
(changes from PI+ v1.2)

Major Economic Data Sources

Employment

County	BEA REIS (sector industries; 2001-2009)[1]
	BLS QCEW (summary industries; 1990-2009)[2]
	CBP (detail industries; 2008)
State	BEA SPI (summary industries; 1990-2009)[3]
	BLS QCEW (summary industries; 1990-2009)
	CBP (detail industries; 2008)
National	BEA SPI (summary industries; 1990-2009)[3]
	BLS QCEW (summary industries; 1990-2009)
	CBP (detail industries; 2008)
	BLS EP (detail industries; 1993-2008 and 2018)[4]

Wages

County	BEA REIS (total; 2001-2009)
	BLS QCEW (summary industries; 1990-2009)
	CBP (detail industries; 2008)
State	BEA SPI (summary industries; 1990-2009)
	BLS QCEW (summary industries; 1990-2009)
	CBP (detail industries; 2008)
National	BEA SPI (summary industries; 1990-2009)
	BLS QCEW (summary industries; 1990-2009)
	CBP (detail industries; 2008)

Personal Income and Earnings

County	BEA REIS (components and summary industries; 2001-2009)
State	BEA SPI (components and summary industries; 1990-2009)
National	BEA SPI (components and summary industries; 1990-2009)
	BLS EP (components; 1993-2008 and 2018)
	RSQE (components; 2010-2013)[5]

[1] The county BEA REIS data used for PI+ v1.3 is based on their 04/21/2011 release.
[2] Initial estimates of county-level 70 sector employment and wage data for the states of Michigan, Nevada, and Texas were provided by the University of Michigan.
[3] The state and national BEA SPI data used for PI+ v1.3 is based on their 03/23/2011 release.
[4] The national BLS EP data used for PI+ v1.3 is based on their 12/11/2009 release.
[5] The 30 June 2011 forecast from RSQE is used for PI+ v1.3.

Compensation

County	BEA REIS (components and summary industries; 2001-2009)
State	BEA SPI (components and summary industries; 1990-2009)
National	BEA SPI (components and summary industries; 1990-2009)

Commuter Flows

County to County	BEA (gross flow of earnings by county; 1990-2009) 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)

Technology Matrix

National	BLS (detail sectors; 1993-2008 and 2018)

Final Demand

National	BEA (components; 1990-2009) RSQE (components; 2010-2013)[5] BLS EP (components and industry value added; 1993-2008, 2018)

Occupation Matrix

National	BLS EP(employment by industry and occupation; 2008 and 2018)

Major Demographic Data Sources

Population

County	BEA (total; 1990-2009)
County	Census (age, sex, race; 1990-2009)

Demographic Components of Change

County	Census (1990-2009)

Labor Force

County	BLS (total; 1990-2009)

Natality Rates

Nation	Census (1999-2100)

Birth Rates

State	CDC (1990-2008)

Survival Rates

Nation	Census (1999-2100)

Net International Migrants

Nation	Census (1999-2100)

Participation Rates

Nation	BLS (1990-2050)

Active Military

Base	DoD (total; 1994-2009)
Nation	DoD (total, sex, race; 1990-2009)

Military Dependents

Nation	DoD (total; 1990-2005)

Prisoners

County	Census (sex,race,facility; 2000)
Nation	Bureau of Justice Statistics (facility; 1990-2009)

Integrated Custom Industry Policy Variables

The Custom Industry Policy Variable Module has been fully integrated into the PI^{+} interface, providing easier navigation and application of this feature. A custom industry definition, once specified and saved by the user, is now available for use in future simulations as a direct policy variable scenario whose magnitude may be specified when applied.

Forecast Period Extended

The forecast period has been extended through the year 2060.

Note on 2018 GDP assumptions: The BLS projections assume a full employment economy and since the economic recovery to date has been slower than typical, and is expected to continue this way for the next few years, the growth required to hit the 2018 projections published by the BLS in November 2009 may be unrealistic. REMI has chosen to continue to benchmark its 2018 forecast with that of BLS, with the exception of the Computers, peripherals + software and Brokerage charges + investment counseling consumption categories.

New Regional Population Update

The regional population update is a new feature in the regional control that can be used to adjust the population forecast. It will create amenity and migration policy variables to match the population to a target forecast.

Improved Data Handling for Employment Update

The employment update form is more flexible in the ways it can accept data in multiregional models. In addition to the sector by year view, it can be pivoted to a region by year view and a flat view where data can be entered all regions, sectors, and years at once.

New Migration Equation/Response

The domestic net economic migration response to changes in relative employment opportunity was last estimated in July 2002 using 1972-2000 data and a standard OLS regression approach. The new equation estimates separate responses for relative employment opportunity and relative real compensation rate, utilizing the Instrumental Variable (IV) approach and data from the 2001-2008 time period.

Estimates of Migration Equation Parameters

	New (for PI+ v1.3)	**Previous** (from July 2002 work)
Relative employment opportunity (REO)	**0.303**	0.280
Relative real compensation rate (RWR)	**0.412**	0.280[6]

See "Reestimating The REMI Migration Equation Coefficients to Correct for Endogeneity.pdf" for additional information.

[6] Parameter estimated for REO also used for RWR.

New Investment Response

The speeds of adjustment for residential and non-residential investments in structures were last estimated in February 2001 using a data set from 1974-1998. The new estimates utilize a data set from 1995-2007. As in the past estimates, investment is specified as a stock-adjustment process, with the actual capital stock adjusting to the desired capital stock.

Estimates of Investment Speed of Adjustment

	New	Previous	Original
	(for PI+ v1.3)	(from February 2001 work)	(from Rickman, Shao, Treyz 1993 article)
Residential Investment in Structures	**0.128**	0.097	0.127
Non-Residential Investment in Structures	**0.064**	0.070	0.061

See "New Estimates for Investment Speed of Adjustment.pdf" for additional information.

New Housing Price Response

The U.S. housing price elasticities were last estimated in September 2001 using 1971-1998 data. The regional scaling factors were estimated in September 2007 using data from the 1998-2004 period. The current estimates of U.S. elasticities also utilize data for 1998-2004, intentionally aligning with the previous regional scaling factor estimates, and avoiding the recent housing price bubble and collapse.

Estimates of U.S. Housing Price Elasticities

	New	Previous
	(for PI+ v1.3)	(from September 2001 work)
Real disposable income elasticity of housing price	**0.211**	0.322
Population elasticity of housing price	**0.548**	0.429

See “New Estimates of Housing Prices Elasticities.pdf” for additional information.

Calculator Enhancements

A 'Growth' tab has been added to the calculator which will fill in cells using a starting value and a growth rate. To better organize the calculator, the 'Linear' and 'Exponential' tabs were combined to form a new tab called 'Interpolate', and the '% change' and '+-Value' tabs were combined to form a tab called 'Adjust'.

New Custom Units and Currency Types in Results View

A new feature that allows the user to customize the units and currency display of the results has been incorporated.

New Industry NAICS Labels

A new feature that allows the user to label the industries according to NAICS code in addition to or instead of the name has been incorporated.

New Demographic Policy Variables

'Group Ages' and 'Group Races'

When selecting demographic policy variables with multiple age and race groups, it is possible to group all of the selected age and race categories to a single policy variable by checking the 'Group Ages' and 'Group Races' boxes. Policy variables will be created for each age-race combination and the entered values will be spread across them using default age and race distributions. If the checkboxes are left unchecked, then values can be entered for each individual age-race combination.