



Jobs and Growth Effects of Tax Rate Reductions in Ohio

BY ALEX BRILL

May 2014

This report was sponsored by American Freedom Builders, Inc., a 501(c)4 organization. The author is solely responsible for the content. Any views expressed here represent only the views of the author.

EXECUTIVE SUMMARY

This study examines the Ohio economy and tax system and models the expected impact of a proposed 8.5 percent reduction in individual income tax rates and an expansion of Ohio’s earned income tax credit and personal exemption. The model results show that proposed tax cuts in Ohio would yield increases in employment, output, and income.

Ohio Governor John Kasich has proposed a series of tax changes that includes an 8.5 percent reduction of personal income tax rates for all taxpayers, a tripling of the state’s earned income tax credit, and an increase in the personal exemption for low- and middle-income households. Reducing personal income tax rates will increase both after-tax income and incentives to supply labor in the Ohio economy.

This study reports the results of a Regional Economic Models, Inc. (REMI) model calibrated to measure the economic impact of these tax cuts in Ohio. REMI models are used widely among government agencies, consulting firms, nonprofits, and universities to look at the effects of a policy change on a baseline that REMI has carefully constructed.

The table below summarizes the model results relative to the Ohio baseline over ten years. By 2024, the proposed Ohio tax cuts would result in:

- Over 11,000 additional jobs, two-thirds of which would be in health care, retail trade, construction, and hospitality;
- Nearly 33,000 new Ohio residents;
- \$806 billion in additional economic output; and
- More than \$2.2 billion in additional, after-tax personal income.

With sound, growth-oriented fiscal policies, Ohio’s economy could realize additional growth and job creation. As the results of this analysis suggest, one sensible component of that agenda would be tax reforms that lower marginal income tax rates.

EFFECTS OF TAX CUTS COMPARED TO OHIO BASELINE, 2015-2024

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Private, non-farm employment	2,622	6,771	8,869	9,579	9,922	10,171	10,388	10,620	10,864	11,144
Migration	2,098	6,857	11,979	16,436	20,271	23,576	26,431	28,901	31,043	32,910
GDP*	\$177	\$462	\$612	\$667	\$696	\$718	\$739	\$759	\$781	\$806
Personal Income*	\$121	\$340	\$495	\$589	\$658	\$717	\$771	\$824	\$878	\$935
Disposable Personal Income*	\$409	\$1,078	\$1,436	\$1,588	\$1,698	\$1,799	\$1,898	\$2,000	\$2,103	\$2,211

* \$ millions

While the Ohio economy has lagged behind the broader U.S. economy for most of the last decade, the Ohio economy has improved recently, and the unemployment rate is now down to 6.1 percent. Nevertheless, job growth is currently lagging the U.S. rate. From a fiscal perspective, Ohio tax revenues have been steadily increasing, and personal income tax collections jumped over 8 percent last year. Against this backdrop, lawmakers are considering various tax reform proposals.

OHIO'S ECONOMY

Ohio is the seventh most populous U.S. state, with a population of nearly 11.6 million.¹ The state also ranks seventh in the nation by output, with a GDP of \$509 billion (2012).² The Ohio workforce comprises 5.3 million people,³ and per capita income is \$40,865.⁴ Top industries by employment in the state are health care and social assistance, retail trade, manufacturing, and hospitality.⁵ Manufacturing, which employs 670,000 people, is the largest sector by output.⁶

When the recession hit at the end of 2007, the impact in Ohio was disproportionately large compared with the national impact. Ohio's goods and services output fell 8.0 percent, compared with a 3.9 percent drop in national output.⁷ The labor market in Ohio was also hit hard. The state unemployment rate remained above 10 percent from May 2009 until June 2010,⁸ while the national unemployment rate hit 10 percent for just one month in 2009.⁹

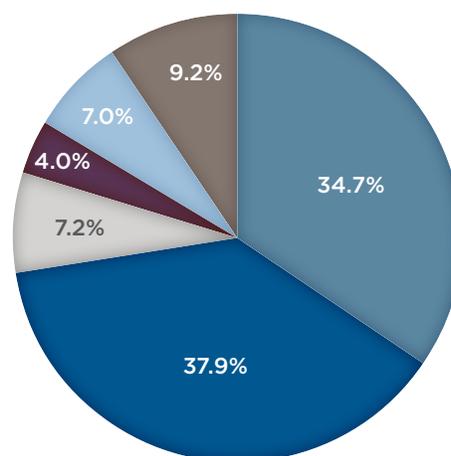
However, Ohio's recovery from the recession has been promising. Unemployment dropped below 7 percent at the beginning of 2014 and reached 6.1 percent in March 2014, the second month in a row that the state's unemployment rate was lower than the national rate.¹⁰ Ohio was one of just four states in March 2014 to experience a statistically significant drop in unemployment.¹¹ Ohio's post-recession economic growth (from 2009 to 2012) outpaced U.S. economic growth during that period 7.3 percent to 6.7 percent.¹²

Nevertheless, population growth in Ohio was flat from 2009 to 2012, while the total U.S. population grew 2.2 percent during that time.¹³

OHIO'S TAX SYSTEM

Ohio's largest source of tax revenue is its individual income tax (37.9 percent of tax revenue), while sales and use taxes generate 34.7 percent of revenue (see **Chart 1**).¹⁴ From fiscal year 2012 to fiscal year 2013, personal income tax revenue increased over 8 percent.¹⁵ With average per-capita taxes of \$2,777, Ohio ranks eighteenth in the nation in state and local tax burden.¹⁶

CHART 1. OHIO TAX REVENUE BY SOURCE, FY 2012



Source: Ohio Department of Taxation.

TABLE 1. 2013 OHIO INDIVIDUAL INCOME TAX BRACKETS

Ohio Taxable Income	Tax Rate
0 - \$5,200	0.537%
\$5,200 - \$10,400	1.074%
\$10,400 - \$15,650	2.148%
\$15,650 - \$20,900	2.686%
\$20,900 - \$41,700	3.222%
\$41,700 - \$83,350	3.760%
\$83,350 - \$104,250	4.296%
\$104,250 - \$208,500	4.988%
More than \$208,500	5.421%

Source: Ohio Department of Taxation.

Ohio's individual income tax system comprises nine brackets ranging from 0.537 percent to 5.421 percent (see Table 1).¹⁷ Beginning in 2005, rates were gradually reduced until they reached current levels.

On the business side, Ohio levies a commercial activity tax (CAT) on businesses' annual gross receipts. This tax was introduced in 2005 and partially replaced the corporation franchise tax and the tangible personal property tax.¹⁸

It is important to note that for Ohio residents, the state income tax system is intertwined with the federal income tax system. For example, the combined marginal income tax rate for a married taxpayer in Ohio with taxable income of \$100,000 is approximately 29 percent, depending slightly on whether the taxpayer itemizes deductions, as state income taxes are deductible from federal income taxes.

PROPOSED TAX REFORM

In March 2014, Governor John Kasich introduced a new tax plan in his Mid-Biennium Review aimed at encouraging economic growth in Ohio. The plan includes the following three tax reductions:

- Cut all individual income tax rates by 8.5 percent over three years (2015–2017);
- Triple Ohio's earned income tax credit (EITC), from 5 percent to 15 percent of the federal EITC;
- Increase the personal exemption from \$1,700 to \$2,700 for a taxpayer with an adjusted gross income (AGI) of \$40,000 or less, or to \$2,200 for a taxpayer with an AGI of \$40,001–\$80,000.

The Kasich plan also increases the cigarette tax from \$1.25 to \$1.55 per pack through June 30, 2015, and to \$1.85 per pack thereafter (and imposes a similar tax on e-cigarettes); alters the oil and gas severance tax; and increases the CAT rate from 0.26 percent to 0.30 percent on gross receipts in excess of \$1 million.¹⁹

MARGINAL TAX RATES AND ECONOMIC GROWTH

Tax policy represents an important tool for encouraging economic growth. As the Congressional Budget Office observed in a paper reviewing the empirical evidence related to the effects of tax policy changes on labor supply, "The extent to which workers respond to changes in their after-tax wages, and hence tax rates, can affect the supply of labor, total output, and other aspects of the economy."²⁰ Economists have long known that reducing marginal tax rates on income increases the after-tax wage for additional work. As a result, work can become more preferable to leisure or other activities.

Empirical evidence of labor supply responses finds that lower marginal tax rates lead to increases in labor supply. Married women tend to be the most responsive to such changes, and thus their labor supply decisions are most distorted by high income tax rates. As Professor Michael Keene notes in an exhaustive 2011 review of the economics literature on this topic, “Labor supply of men may be more elastic than conventional wisdom suggests. . . . For women, most studies find very large labor supply elasticities.”²¹ Lower marginal tax rates are also likely to increase savings rates, entrepreneurship activity, and the returns to higher education.

MODELING THE IMPACT OF TAX CUTS IN OHIO

This study, using a model of Ohio’s economy from Regional Economic Models, Inc. (REMI), examines the ten-year impact of three components of the Kasich tax plan: the individual income tax rate cuts, the personal exemption increase, and the EITC expansion.²²

REMI models are used widely among government agencies, consulting firms, nonprofits, and universities to look at the effects of a policy change on a baseline that REMI has carefully constructed. (See the Appendix for more information on the REMI model generally.)

Table 2 summarizes the results of modeling the Ohio tax cuts’ impact on the state’s economy and population.²³ Because the model compares the policy change to a baseline for Ohio, the results should be interpreted as changes in each category as a result of the tax cuts relative to that baseline. For example, these results indicate that the tax cuts will yield additional increases in employment above and beyond the natural job creation that is expected over the next decade.

This section also presents the model results divided into three categories, representing the effects of the tax cuts in Ohio on 1) human capital, in terms of employment and migration; 2) output, or the increase in Ohio’s gross domestic product (GDP); and 3) income, including disposable income.

TABLE 2. EFFECTS OF TAX CUTS COMPARED TO OHIO BASELINE, 2015-2024

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Private, non-farm employment	2,622	6,771	8,869	9,579	9,922	10,171	10,388	10,620	10,864	11,144
Migration	2,098	6,857	11,979	16,436	20,271	23,576	26,431	28,901	31,043	32,910
GDP*	\$177	\$462	\$612	\$667	\$696	\$718	\$739	\$759	\$781	\$806
Personal Income*	\$121	\$340	\$495	\$589	\$658	\$717	\$771	\$824	\$878	\$935
Disposable Personal Income*	\$409	\$1,078	\$1,436	\$1,588	\$1,698	\$1,799	\$1,898	\$2,000	\$2,103	\$2,211

* \$ millions

Labor Market

Lower tax rates are expected to increase employment in Ohio. As **Chart 2** shows, the impact on private non-farm employment begins slowly as the rate cuts are phased in but reaches over 11,000 in 2024.

Chart 3 highlights the industries with the biggest employment impacts ten years after implementation of the tax cuts. Health care, retail trade, construction, and hospitality account for two-thirds of all additional jobs.

Lower tax rates also are expected to encourage people to move to Ohio. As **Chart 4** demonstrates, after ten years, the migration impact will total nearly 33,000, including workers, nonworking adults, children, and retirees. This population influx will bring more consumers to Ohio, further boosting demand for in-state goods and services.

CHART 3. TOP INDUSTRIES BY TEN-YEAR EMPLOYMENT RESPONSE, 2024

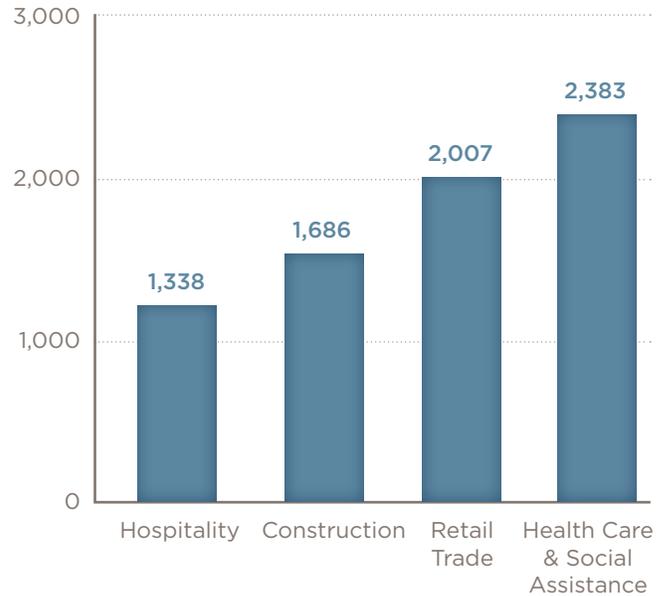


CHART 2. PRIVATE NON-FARM EMPLOYMENT RESPONSE TO TAX CUTS

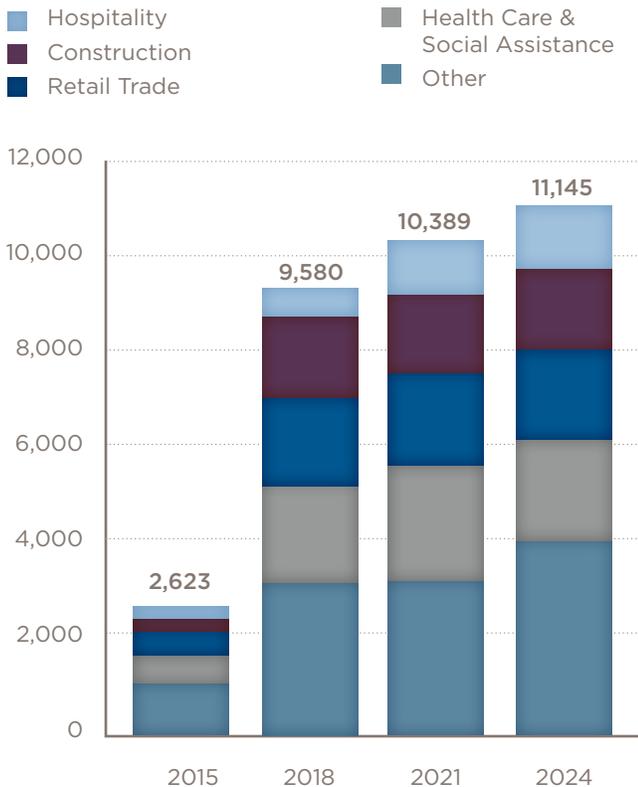


CHART 4. MIGRATION IN RESPONSE TO TAX CUTS

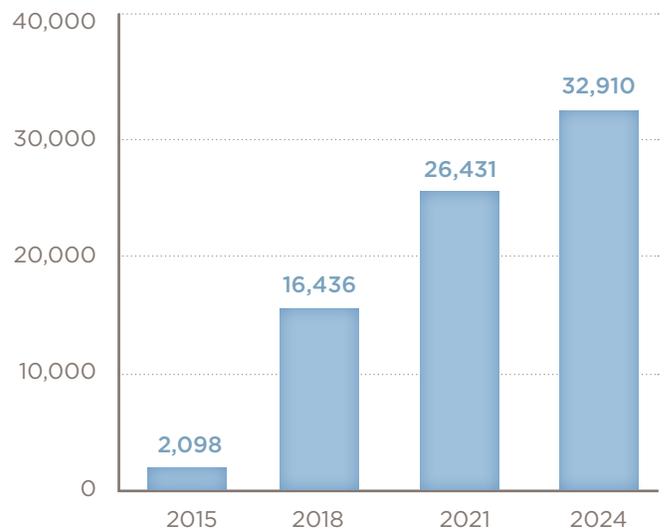
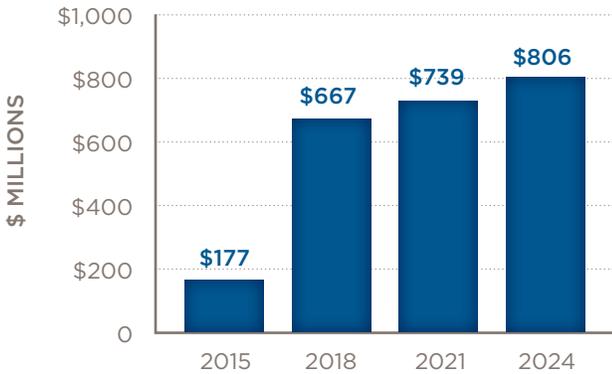


CHART 5. GDP RESPONSE TO TAX CUTS



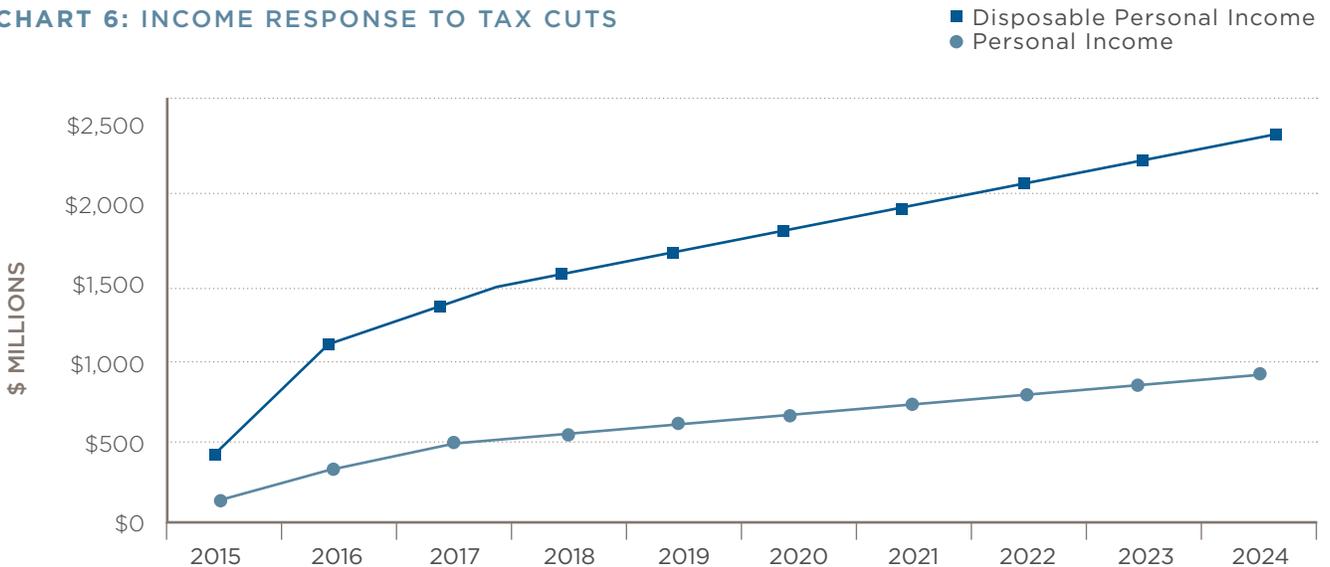
Output

Chart 5 highlights the growth in state GDP resulting from the tax cuts. By 2024, output will have increased \$806 million as a result of the tax cuts.

Income

Chart 6 demonstrates that the tax cuts would increase personal income (the sum of wages, business income, dividends, interest, and other income received at the household level) as well as disposable personal income (personal income minus taxes), resulting in higher consumption and economic growth in Ohio.

CHART 6: INCOME RESPONSE TO TAX CUTS



CONCLUSION

Reducing individual income tax rates in Ohio would result in an increase in employment, higher after-tax wages, and additional output. Lower marginal tax rates would also lead to net migration into Ohio and attract more employers to the state. This study examines the isolated effect of lower marginal income tax rates, an expansion of the EITC, and an increase in the personal exemption for low- and middle-income households. It does not consider the impact of these tax cuts on the state budget. Governor Kasich's tax plan offsets the revenue loss from these cuts with additional tax changes described above. Though beyond the scope of this study, the budget and economic impact of those tax increases — or alternative tax offsets or budget cuts — is also worth considering.

With sound, growth-oriented fiscal policies, Ohio's economy could realize additional growth and job creation. As the results of this analysis suggest, one sensible component of that agenda would be tax reforms that lower marginal income tax rates.

APPENDIX

About the Author

Alex Brill is the CEO of Matrix Global Advisors, an economic consulting firm. He is also a research fellow at the American Enterprise Institute and served as an advisor to the Simpson-Bowles Commission. Previously, he was chief economist and policy director to the House Ways and Means Committee. Prior to his time on the Hill, he served on the staff of the President's Council of Economic Advisers. This report was sponsored by American Freedom Builders, Inc., a 501(c)4 organization. The author is solely responsible for the content. Any views expressed here represent only the views of the author.

About REMI*

The REMI model incorporates aspects of four major modeling approaches: Input-Output, General Equilibrium, Econometric, and Economic Geography. Each of these methodologies has distinct advantages as well as limitations when used alone. The REMI integrated modeling approach builds on the strengths of each of these approaches.

The REMI model, at its core, has the inter-industry relationships found in Input-Output models. As a result, the industry structure of a particular region is captured within the model, as well as transactions between industries. Changes that affect industry sectors that are highly interconnected to the rest of the economy will often have a greater economic impact than those for industries that are not closely linked to the regional economy.

General Equilibrium is reached when supply and demand are balanced. This tends to occur in the long run, as prices, production, consumption, imports, exports, and other changes occur to stabilize the economic system. For example, if real wages in a region rise relative to the U.S., this will tend to attract economic migrants to the region until relative real wage rates equalize. The general equilibrium properties are necessary to evaluate changes such as tax policies that may have an effect on regional prices and competitiveness.

REMI is sometimes called an “Econometric model,” as the underlying equations and responses are estimated using advanced statistical techniques. The estimates are used to quantify the structural relationships in the model. The speed of economic responses is also estimated, since different adjustment periods will result in different policy recommendations and even different economic outcomes.

The New Economic Geography features represent the spatial dimension of the economy. Transportation costs and accessibility are important economic determinants of interregional trade and the productivity benefits that occur due to industry clustering and labor market access. Firms benefit from having access to a large, specialized labor pool and from having access to specialized intermediate inputs from supplying firms. The productivity and competitiveness benefits of labor and industry concentrations are called agglomeration economies, and are modeled in the economic geography equations.

** From www.remi.com/the-remi-model.*

NOTES

- ¹ Ohio Development Services Agency, “Economic Overview: Ohio,” updated April 2014, available at www.development.ohio.gov/files/research/E1000.pdf.
- ² Ohio Development Services Agency, Office of Research, *Gross Domestic Product from Ohio* (August 2013), 13, available at www.development.ohio.gov/files/research/E1001.pdf.
- ³ U.S. Bureau of Labor Statistics (BLS), State and Area Employment, Hours, and Earnings, March 2014 (seasonally adjusted).
- ⁴ U.S. Bureau of Economic Analysis, Regional Data, GDP & Personal Income, 2013.
- ⁵ Regional Economic Models, Inc. (REMI), PI+ model of Ohio.
- ⁶ BLS, State and Area Employment, Hours, and Earnings, March 2014 (seasonally adjusted).
- ⁷ Ohio Development Services Agency, Office of Research, *Gross Domestic Product from Ohio*, 59.
- ⁸ BLS, Local Area Unemployment Statistics, Ohio statewide unemployment rate (seasonally adjusted).
- ⁹ BLS, Labor Force Statistics from the Current Population Survey, U.S. unemployment rate (seasonally adjusted).
- ¹⁰ BLS.
- ¹¹ Ibid.
- ¹² Ohio Development Services Agency, Office of Research, *Gross Domestic Product from Ohio*, Table A17.
- ¹³ Ibid.
- ¹⁴ Ohio Department of Taxation, *2012 Annual Report*, 28, available at www.tax.ohio.gov/Portals/0/communications/publications/annual_reports/2012_annual_report/2012_AR_internet.pdf.
- ¹⁵ State of Ohio, *Comprehensive Annual Financial Report: Fiscal Year Ended June 30, 2013* (December 20, 2013), 252, available at www.media.obm.ohio.gov/OBM/stateaccounting/financial-reporting/cafr/2013/cafr_2013.pdf.
- ¹⁶ Tax Foundation, “Ohio’s State and Local Tax Burden,” October 23, 2012, available at www.taxfoundation.org/article/ohios-state-and-local-tax-burden.
- ¹⁷ Ohio Department of Taxation, “Ohio Individual Income Tax Rates: 2005–2013,” available at www.tax.ohio.gov/ohio_individual/individual/annual_tax_rates.aspx.
- ¹⁸ Ohio Department of Taxation, *2012 Annual Report*, 36.
- ¹⁹ Governor John R. Kasich, 2014 Mid-Biennium Review, “Tax Cuts for Growth,” available at www.transforming.ohio.gov/TaxCuts.aspx.
- ²⁰ Robert McClelland and Shannon Mok, “A Review of Recent Research on Labor Supply Elasticities,” Congressional Budget Office Working Paper 2012-12 (October 2012), available at www.cbo.gov/sites/default/files/cbofiles/attachments/10-25-2012-Recent_Research_on_Labor_Supply_Elasticities.pdf.
- ²¹ Michael P. Keane, “Labor Supply and Taxes: A Survey,” *Journal of Economic Literature* 49, no. 4 (December 2011): 1071.
- ²² This analysis employs the REMI PI+ model, which “generates realistic year-by-year estimates of the total regional effects of any specific policy initiative.” (See www.remi.com/products/pi.)
- ²³ The model results are based on an extrapolation of the revenue estimates found in the 2014 Mid-Biennium Review, available at www.transforming.ohio.gov/TaxCuts.aspx.