
Analysis of Revenue Proposals

FY 2016-17 Executive Budget

About the Independent Fiscal Office

The Independent Fiscal Office (IFO) provides revenue projections for use in the state budget process along with impartial and timely analysis of fiscal, economic and budgetary issues to assist Commonwealth residents and the General Assembly in their evaluation of policy decisions. In that capacity, the IFO does not support or oppose any policies it analyzes, and will disclose the methodologies, data sources and assumptions used in published reports and estimates.

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INDEPENDENT FISCAL OFFICE

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April 20, 2016

The Honorable Members of the Pennsylvania General Assembly:

This document provides an analysis of the tax proposals included in the *2016-17 Executive Budget* released February 2016. The Independent Fiscal Office (IFO) publishes this report to fulfill its statutory duties as provided under 71 Pa.C.S. § 4104. The act requires that the IFO “provide an analysis, including economic impact, of all tax and revenue proposals submitted by the Governor or the Office of the Budget.”

This analysis uses various data sources to derive estimates of the revenue proposals included in the budget. All data sources and methodologies used to derive those estimates are noted in the relevant sections of this document. The IFO would like to thank the various organizations that provided input to this analysis.

Questions or comments regarding the contents of this analysis are welcome and can be submitted to contact@ifp.state.pa.us.

Sincerely,

MATTHEW J. KNITTEL
Director

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Introduction

This report provides revenue estimates for the tax proposals contained in the *2016-17 Executive Budget* released February 2016. The Independent Fiscal Office (IFO) publishes this report to fulfill its statutory duties as provided under 71 Pa.C.S. § 4104. The act requires that the IFO “provide an analysis, including economic impact, of all tax and revenue proposals submitted by the Governor or the Office of the Budget.”

The report contains two sections. The first section analyzes the various tax proposals included in the *2016-17 Executive Budget* and the corresponding impact on General Fund tax revenues over a five-year period. The specific proposals include brief descriptions of the data sources and methodologies used to derive the revenue estimates. Certain proposals also provide interstate comparisons of effective or statutory tax rates under current and proposed tax law.

The second section analyzes the proposal to increase the state minimum wage from \$7.25 to \$10.15 per hour. It discusses potential employment effects, income effects and the implications for General Fund revenues.

At the time of publication, technical language was not available to inform the revenue estimates of the proposals included in the budget. The explanations and descriptions contained in this report are based on descriptions from the *2016-17 Executive Budget* and presentations made by executive branch officials. The analysis assumes that none of the proposals impact the current fiscal year, and most become effective July 1, 2016.

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Tax and Revenue Proposals

The 2016-17 Executive Budget proposes changes to cigarette, sales and use, personal income, bank shares and insurance premiums taxes. It also proposes new tax levies on the severance of natural gas, other tobacco products (e.g., snuff) and promotional play at casinos. By FY 2020-21, the analysis projects that the proposals will increase General Fund tax revenues by \$3.6 billion. Pennsylvania residents would not bear the entire tax burden of the proposed tax change. For example, consumers in other states would likely bear a substantial portion of the proposed severance tax. For personal income taxes, the federal government would effectively offset a portion of the tax increase because many residents can claim state income taxes as a deduction on the federal tax return and reduce their federal income tax. The subsections that follow provide additional detail as well as interstate comparisons to allow policymakers to assess how the Pennsylvania tax system compares to other states under current and proposed tax law.

General Fund Revenue Impact Summary

	Fiscal Years				
	2016-17 ¹	2017-18	2018-19	2019-20	2020-21
Personal Income Tax	\$1,268.5	\$1,298.5	\$1,353.8	\$1,420.0	\$1,488.2
Sales and Use Tax	299.2	323.5	328.0	332.4	336.8
Severance Tax	217.8	517.0	593.2	747.7	968.5
Bank Shares Tax	69.6	37.0	38.1	39.2	40.4
Insurance Premiums Tax	206.5	110.0	111.7	113.4	115.2
Cigarette Tax	472.2	459.4	445.4	437.0	428.2
Other Tobacco Products Tax	146.7	151.0	155.1	159.4	163.8
Tax on Promotional Play	<u>45.3</u>	<u>45.6</u>	<u>46.1</u>	<u>46.6</u>	<u>47.2</u>
Total Revenues	2,725.8	2,942.0	3,071.4	3,295.7	3,588.3

Note: millions of dollars. Detail may not sum to total due to rounding and is prior to any transfers to other funds.

¹ Includes retroactive impacts.

Personal Income Tax

The administration’s proposal (1) increases the personal income tax (PIT) rate from 3.07 to 3.40 percent, (2) increases eligibility income from \$6,500 to \$8,700 for qualified claimants who may receive 100 percent tax forgiveness under the special tax forgiveness provisions (SP) and (3) eliminates the exemption for Pennsylvania Lottery winnings.

Methodology

Rate Increase The revenue estimate for the PIT rate increase assumes that (1) the increase is effective July 1, 2016, (2) employers withhold tax at the higher tax rate immediately upon the effective date and (3) the tax is imposed at a blended rate of 3.235 percent for tax year 2016.¹ All payments for tax year 2017 reflect the full 3.40 percent rate. The estimate uses the IFO’s most recent PIT baseline forecast, adjusted for the mid-year increase in the tax rate. The estimate includes minor reductions for behavioral and compliance effects in response to the higher tax rate.

Tax Forgiveness The estimate assumes that a single claimant with no dependents may report up to \$8,700 in eligibility income (married claimants with no dependents may report up to \$17,400) and still qualify for 100 percent tax forgiveness. Consistent with current law, each dependent adds an additional \$9,500 to the income eligibility allowance, and each \$250 increase in eligibility income reduces the amount of tax forgiveness by 10 percentage points. The estimate assumes that the expanded SP provisions are effective for tax year 2016 at a blended rate of 3.235 percent for that tax year and a rate of 3.40 percent for later years. The estimate uses data from PIT tax returns and the U.S. Census Bureau’s American Community Survey.

Lottery Winnings The estimate assumes that all Pennsylvania Lottery winnings claimed after June 30, 2016 are subject to tax at the 3.40 percent rate (imposed at the blended rate of 3.235 percent for tax year 2016). Data on prizes paid are from the Pennsylvania Lottery.

Revenue Impact

The proposals increase PIT revenues by \$1.3 billion in FY 2017-18 (first full-year impact). The estimates represent gross amounts before any proposed transfers from the General Fund. It is not clear whether newly qualified SP recipients will elect to reduce remittances or claim refunds. However, the net impact on the state’s balance sheet is unaffected by this timing issue.

	Personal Income Tax Revenues				
	2016-17	2017-18	2018-19	2019-20	2020-21
Rate Increase ¹	\$1,333.7	\$1,373.7	\$1,429.8	\$1,496.9	\$1,566.2
Tax Forgiveness ¹	-79.4	-89.9	-91.2	-92.6	-94.1
Lottery Winnings	<u>14.2</u>	<u>14.7</u>	<u>15.2</u>	<u>15.7</u>	<u>16.1</u>
Total	1,268.5	1,298.5	1,353.8	1,420.0	1,488.2

Note: millions of dollars.
¹ Includes refunds.

¹ The blended rate is equal to the current PIT rate (3.07 percent) plus the new PIT rate (3.40 percent) divided by 2.

Interstate Comparison

Interstate comparisons of statutory PIT rates may not provide an accurate snapshot of each state's relative tax burden because most states levy a graduated tax rate (i.e., rates increase as income rises) and allow personal deductions and/or exemptions. In order to compare Pennsylvania's flat PIT rate to other states, the analysis creates five taxpayer scenarios and computes tax liability for Pennsylvania and 11 comparison states that are in close proximity. The table below displays the computed effective tax rate for the five scenarios. The effective tax rate is equal to computed tax liability divided by total income, which includes income that is taxed or exempt from state income tax.

Case A Single, working-age filer, \$50,000 of wage income

Case B Working-age couple with two school-aged children, \$50,000 of wage income

Case C Retired couple, \$25,000 of Social Security, \$10,000 of dividends and \$25,000 of pension income

Case D Working-age couple with two school-aged children, \$125,000 of wage income

Case E Working-age couple with two school-aged children, \$250,000 of wage income

	Case A	Case B	Case C	Case D	Case E
Delaware	4.2%	3.5%	0.0%	5.1%	5.8%
Indiana	3.2	2.8	1.7	3.1	3.2
Kentucky	5.1	5.1	0.3	5.6	5.8
Maryland	4.2	3.1	1.6	4.5	5.0
Michigan	3.9	2.9	0.1 ²	3.7	4.0
New Jersey	2.4	1.4	0.8	3.1	4.6
New York	4.8	2.9	0.0	5.2	6.2
North Carolina	4.9	3.6	1.9	5.0	5.4
Ohio	2.3	1.9	0.6	3.1	3.9
Pennsylvania – proposed ³	3.4	3.4	0.0	3.4	3.4
Virginia	4.8	4.1	0.0	5.1	5.4
West Virginia	4.1	3.4	2.6	5.2	5.8

¹ The analysis assumes that taxpayers utilize the standard deduction for federal purposes. For married taxpayers, it assumes that couples file jointly on the same return and all income is distributed to one spouse. Property tax or rent relief distributed via exemptions on the PIT return was not included in the analysis.

² Assumes that both spouses are age 67.

³ The current Pennsylvania effective tax rates (3.07 percent) exhibit the same pattern at the lower rate.

Source: Tax rates and brackets from the Tax Foundation. "State Individual Income Tax Rates and Brackets for 2016." <http://taxfoundation.org/article/state-individual-income-tax-rates-and-brackets-2016> (as of April 8, 2016). Data on treatment of retirement income, exemptions and credits from various state agency websites.

Although Pennsylvania has one of the lowest statutory income tax rates in the U.S., certain comparison states have lower effective tax rates once tax-exempt income and applicable exemptions and deductions are included. For example, in Case A, New Jersey and Ohio have lower effective tax rates due to personal exemptions and deductions. Across all comparison states, the effective tax rate for Case C (retired couple) is considerably lower than the other cases, and in four states, including Pennsylvania, filers pay no state income tax. For Case D and Case E, Pennsylvania levies the lowest effective rate under current law due to its flat rate structure. For 2013, Pennsylvania tax data show that 40 percent of taxable income was reported by filers with more than \$150,000 in taxable income.

Federal Income Tax Offset

Federal tax law allows taxpayers who itemize to deduct state and local income and property taxes on the federal income tax return. For 2013, the tax data show that Pennsylvania residents deducted \$10.6 billion of state and local income taxes on the federal income tax return. That amount represents somewhat more than two-thirds of total Pennsylvania state and local income taxes for that year.

The monetary value of that deduction will depend on a taxpayer's marginal tax rate, or the highest tax rate under which they pay tax. For example, if a filer's income places him/her in the 25 percent tax bracket, then a \$1,000 deduction for state income tax would reduce his/her federal tax liability by \$1,000 multiplied by 25 percent or \$250. Therefore, the same dollar amount of state and local income tax deduction has greater monetary value to upper-income taxpayers in higher tax brackets.

For FY 2017-18, the proposal increases state income tax revenues by \$1.3 billion. The analysis assumes that the same proportion of new tax revenues would be claimed as an itemized deduction on the federal tax return as was claimed in 2013 (roughly 70 percent). That amount is then distributed across six income groups using federal tax return tabulations published by the Internal Revenue Service.² Each income group is assigned a marginal tax rate based on the projected 2017 tax rate schedule. The analysis then adjusts the estimate for the interaction between the state and local income tax deduction and the federal Alternative Minimum Tax (AMT). The AMT is an alternative tax system that disallows certain deductions and effectively creates a floor on federal tax liability for some upper-income taxpayers with significant itemized deductions.

The federal tax data show the proportion of taxpayers that are subject to the AMT, and for those taxpayers, the analysis assumes that additional state income taxes cannot be deducted on the federal return because they are essentially disallowed if the filer is subject to the AMT. Once the AMT interaction is included, the analysis finds that roughly 16.5 percent of the new state tax remittances would be offset through a lower federal tax liability. For FY 2017-18, this implies a \$215 million (\$1.3 billion multiplied by 16.5 percent) reduction in federal income taxes. The majority of that offset would be realized by filers with federal adjusted gross income in excess of \$100,000.

² See <https://www.irs.gov/uac/SOI-Tax-Stats-Historic-Table-2>.

Sales and Use Tax

The administration's proposal (1) reduces the existing 1.0 percent vendor discount to a fixed dollar amount and (2) expands the sales and use tax (SUT) base to include movie admissions, digital downloads and basic cable. The share of SUT revenue transferred to special funds supporting public transportation remains unchanged. The estimates assume that all provisions are effective July 1, 2016 and all base expansion provisions include minor reductions for behavioral responses of consumers (i.e., fewer purchases due to higher prices) and compliance responses of retailers (i.e., not all will levy and remit the tax).

Methodology

Vendor Discount The current 1.0 percent discount for timely remittance of SUT collected by licensed vendors is set at \$25 for monthly filers, \$75 for quarterly filers and \$150 for semi-annual filers. The estimate utilizes sales tax return data to recalculate the discount under the new parameters.

Movie Admissions The estimate for movie admissions uses Pennsylvania data for motion picture theaters (NAICS 512131) and drive-in motion picture theaters (NAICS 512132) from the 2012 Economic Census. It then adds receipts from the 2012 non-employer statistics file published by the U.S. Census Bureau to account for independent contractors, certain sole proprietors and partnerships and other businesses not included in the Economic Census. The newly taxable portion of total receipts is estimated using the 2012 National Income Product Account (NIPA) product lines for Pennsylvania.

Digital Downloads The estimate for digital downloads uses industry projections of U.S. digital music and e-publishing sales and apportions them to Pennsylvania based on Pennsylvania's share of U.S. Personal Consumption Expenditures from the U.S. Bureau of Economic Analysis. The estimate also includes revenues attributable to audiobooks.

Basic Cable The estimate for basic cable uses state price data from the Federal Communications Commission to calculate average monthly cable rates. Those rates are then multiplied by the total number of occupied housing units from the American Community Survey (adjusted for market penetration) with basic, expanded basic and premium cable services. Adjustments are made to account for services provided to businesses and residents of group homes. The estimate is held flat in future years because under current law, viewers are assumed to migrate from basic cable services to streaming services. Therefore, although the price of basic cable may increase, the number of subscribers is assumed to decline.

Revenue Impact

The proposal increases revenues by \$323.5 million in FY 2017-18 (first full-year impact). The estimates in the table represent gross amounts before any transfers from the General Fund to special funds that support public transportation.

	Sales and Use Tax Revenues				
	2016-17	2017-18	2018-19	2019-20	2020-21
Vendor Discount	\$68.0	\$70.6	\$73.1	\$75.6	\$78.1
Movie Admissions	16.2	17.6	18.7	19.8	20.7
Digital Downloads	16.3	18.6	19.5	20.3	21.3
Basic Cable	<u>198.7</u>	<u>216.7</u>	<u>216.7</u>	<u>216.7</u>	<u>216.7</u>
Total	299.2	323.5	328.0	332.4	336.8

Note: millions of dollars.

Interstate Comparison

For 2016, tabulations from the Federation of Tax Administrators reveal the following characteristics across the 45 states that levy sales and use tax (see table on next page):

- 17 states have no vendor discount for the timely remittance of sales and use tax;
- 28 states allow a vendor discount: 17 states place a dollar cap on the maximum amount, while 11 states allow a vendor discount with no dollar cap (includes Pennsylvania); and
- 24 states tax digital downloads, while 21 states exempt those purchases.

Sales and Use Taxation Across States for 2016

State	SUT Rate	Vendor Discount	Max / Min	Digital Downloads
Alabama	4.00%	5.0%-2.0%	\$400/month (max)	Taxable
Alaska	N/A	N/A	N/A	N/A
Arizona	5.60%	1.00%	\$10,000/year (max)	Taxable
Arkansas	6.50%	2.00%	\$1,000/month (max)	Exempt
California	7.50%	None		Exempt
Colorado	2.90%	3.33%		Taxable
Connecticut	6.35%	None		Taxable
Delaware	N/A	N/A	N/A	N/A
Florida	6.00%	2.50%	\$30/report (max)	Exempt
Georgia	4.00%	3.0%-0.5%		Exempt
Hawaii	4.00%	None		Taxable
Idaho	6.00%	None		Taxable
Illinois	6.25%	1.75%	\$5/year (min)	Exempt
Indiana	7.00%	0.73%		Taxable
Iowa	6.00%	None		Exempt
Kansas	6.50%	None		Exempt
Kentucky	6.00%	1.75%-1.5%	\$50/month (max)	Taxable
Louisiana	4.00%	0.94%		Taxable
Maine	5.50%	None		Taxable
Maryland	6.00%	1.2%-0.90%	\$500/return (max)	Exempt
Massachusetts	6.25%	None		Exempt
Michigan	6.00%	0.5%	\$6/month (min), \$15,000/month (max)	Exempt
Minnesota	6.88%	None		Taxable
Mississippi	7.00%	2.00%	\$50/month (max)	Taxable
Missouri	4.23%	2.00%		Exempt
Montana	N/A	N/A	N/A	N/A
Nebraska	5.50%	2.50%	\$75/month (max)	Taxable
Nevada	6.85%	0.25%		Exempt
New Hampshire	N/A	N/A	N/A	N/A
New Jersey	7.00%	None		Taxable
New Mexico	5.13%	None		Taxable
New York	4.00%	5.00%	\$200/quarter (max)	Exempt
North Carolina	4.75%	None		Taxable
North Dakota	5.00%	1.50%	\$110/month (max)	Exempt
Ohio	5.75%	0.75%		Taxable
Oklahoma	4.50%	1.00%	\$2,500/month (max)	Exempt
Oregon	N/A	N/A	N/A	N/A
Pennsylvania	6.00%	1.00%		Exempt
Rhode Island	7.00%	None		Exempt
South Carolina	6.00%	3.0%-2.0%	\$10,000/year (max)	Exempt
South Dakota	4.00%	1.5%	\$70/month (max)	Taxable
Tennessee	7.00%	None		Taxable
Texas	6.25%	0.5%		Taxable
Utah	4.70%	1.31%		Taxable
Vermont	6.00%	None		Taxable
Virginia	4.30%	1.6%-0.8%		Exempt
Washington	6.50%	None		Taxable
West Virginia	6.00%	None		Exempt
Wisconsin	5.00%	0.50%	\$10/period (min), \$1,000 (max)	Taxable
Wyoming	4.00%	1.95%-1.0%	\$500/month (max)	Taxable

Note: See footnotes to Federation of Tax Administrators (FTA) tables for additional detail.

Source: FTA and Commerce Clearing House (CCH).

Natural Gas Severance Tax

The administration's proposal levies a tax on the severance of unconventional (i.e., shale) natural gas within the Commonwealth. The tax rate is 6.5 percent of the value of natural gas extracted and does not allow a deduction for post-production costs. The amount paid in unconventional gas well impact fees is applied as a credit against the severance tax. The estimate assumes an effective date of July 1, 2016, with remittances due on the 20th day of the fourth month following production; therefore, collections begin in November 2016.

Methodology

The estimate is based on the projected market value of natural gas sold at the Leidy and Dominion South trading hubs. A trading hub is a fixed point where pipelines connect and natural gas is bought and sold. Prices at the hub include post-production costs such as gathering, processing and transportation. The market value, or tax base, is estimated by multiplying unconventional gas well production by the spot price at the regional hubs.³ These variables are estimated by the IFO based on data from Bentek Energy. Projected tax collections are determined by applying the 6.5 percent rate to the tax base and deducting the impact fee credit. Impact fee revenues are based on the number and age of unconventional gas wells projected to be subject to the fee and the applicable rate schedule under current statute.

The price forecast assumes that natural gas prices will increase through FY 2020-21, as more wells are connected to an expanding pipeline network that serves new markets in the northeast, midwest and south. The production forecast assumes modest gains in the near term due to (1) low regional prices and reduced drilling activity in 2016 and 2017 and (2) a reduction in output due to the imposition of the severance tax, which reduces demand when passed through to final consumers in the form of higher prices.

Revenue Impact

The top portion of the table on the next page displays production, price, tax base and impact fee data on a calendar year basis. For the impact fee, the amounts listed represent the year in which the fee is generated, as opposed to the year the fee is remitted (generally the following year). The analysis projects that impact fee revenues will continue to decline in 2016 due to low national prices (which reduce the applicable fee schedule) and a significant decline in new wells drilled.

The bottom portion of the table uses the calendar year data to generate revenue estimates on a fiscal year basis, which reflect the four-month lag between production and remittance of tax. In FY 2017-18 (first full fiscal year), the analysis projects \$517.0 million of net tax revenue, growing to \$968.5 million by FY 2020-21. For FY 2017-18 and FY 2018-19, impact fee credits increase due to a higher fee schedule.

³ In practice, firms would self-report the price they receive for gas sold during the year.

	Natural Gas Production and Price Data (Calendar Years)							
	2014	2015	2016	2017	2018	2019	2020	2021
PA Natural Gas Production ¹	4,050	4,600	4,700	4,800	5,000	5,300	5,500	5,700
Average Annual Prices ²								
Henry Hub	\$4.50	\$2.72	\$2.24	\$2.95	\$3.12	\$3.45	\$3.91	\$4.41
Regional Hub	3.18	1.46	1.37	2.09	2.33	2.72	3.22	3.71
Differential	-1.32	-1.26	-0.86	-0.86	-0.79	-0.73	-0.70	-0.70
Severance Tax Base ³	\$12,879	\$6,716	\$6,439	\$10,032	\$11,650	\$14,416	\$17,710	\$21,147
Impact Fee Revenue ⁴	223.5	185.5	127.6	149.9	203.3	214.5	222.0	229.1
	Severance Tax Revenues⁵ (Fiscal Years)							
	2016-17	2017-18	2018-19	2019-20	2020-21			
Tax on Market Value	\$345.3	\$666.9	\$796.5	\$962.2	\$1,190.5			
Less Impact Fee Credit ⁶	<u>127.6⁷</u>	<u>149.9</u>	<u>203.3</u>	<u>214.5</u>	<u>222.0</u>			
Net Severance Tax	217.8	517.0	593.2	747.7	968.5			

¹ Billions of cubic feet.
² Dollars per thousand cubic feet (mcf), converted from \$/mmbtu using U.S. and Pennsylvania heat content data. Pennsylvania regional hub price equal to a weighted average of the Dominion South and Leidy trading hubs.
³ Millions of dollars. Equal to total production multiplied by regional price.
⁴ Corresponds to year impact fee is generated, not when fee is remitted.
⁵ Millions of dollars.
⁶ Corresponds to year credit is applied.
⁷ The Henry Hub price is projected to fall below the \$2.25/mmbtu threshold, causing the impact fee schedule to decline. However, changing market conditions could cause the price to increase above \$2.25/mmbtu.

Interstate Comparison

The proposed severance tax can be compared to severance taxes levied by other major natural gas-producing states by computing a lifetime effective tax rate (ETR) for each state.⁴ The lifetime ETR is the average effective tax rate over all productive years for a single well. It is equal to the net present value of severance taxes remitted divided by the net present value of the market value of gas.⁵ The lifetime ETR most accurately reflects differences between state severance taxes because some states have special provisions that reduce tax rates for the first two to four years of production or until the value of the gas extracted exceeds a portion of all drilling costs (e.g., Arkansas and Louisiana).

For the purpose of the numerator in the ETR computation, the analysis applies the same parameters to each state: (1) the well is drilled in 2016 and begins production on January 1, 2017, (2) it produces 10 billion cubic feet of natural gas over a 30-year lifetime, (3) it has a production profile (decline curve) similar to a recently-drilled Marcellus shale well and (4) natural gas extracted from the well is valued at a blended spot price for Pennsylvania regional hubs.⁶ Drilling costs and the tax policies specific to each state, including any special provisions, are used to calculate severance tax revenues for that state.

⁴ For a more detailed explanation, see *Natural Gas Extraction: An Interstate Tax Comparison*, Independent Fiscal Office (March 2014).

⁵ The computations use a discount rate of 4.5 percent.

⁶ The production profile may be found in the report noted in footnote 4 *supra*.

The table below shows lifetime ETRs for the proposed Pennsylvania severance tax and six other states using two valuations of natural gas for the denominator based on (1) the hub price and (2) the wellhead price. The proposed Pennsylvania severance tax reflects market value at the hub (i.e., no deduction for post-production costs), but most other states apply the tax to market value at the wellhead (which allows post-production deductions). The entry for Pennsylvania includes the total ETR and its components: the current natural gas impact fee and the additional proposed severance tax. The final column displays total production for 2015 and shows that Pennsylvania recorded the second highest level of output in the U.S. (including states not used for the tax comparison).

Based on the price assumptions from the first table in this subsection, the analysis finds that the total lifetime ETR for Pennsylvania is the highest among comparison states: 6.5 percent based on market value at the hub, or 8.5 percent based on value at the wellhead (before deduction of the impact fee credit). The analysis finds that the impact fee has a much lower effective tax rate: 0.9 percent at the hub, and 1.1 percent at the wellhead. Allowing for the deduction of the current impact fee yields a lifetime ETR of 5.6 percent at the hub and 7.4 percent at the wellhead.

These ETR computations underscore the fact that changing the point of comparison (hub or wellhead) does not change Pennsylvania’s relative tax ranking; it merely adjusts all ETR computations up or down by roughly the same proportion. That result occurs because the denominator is adjusted by the same amount (i.e., post-production costs) for each state.

Interstate Comparison of Lifetime Effective Tax Rates

State	Hub Price	Wellhead Price ¹	Natural Gas Production ²
Arkansas ³	3.1%	4.1%	1,017
Louisiana ⁴	2.9	3.9	1,942
Ohio ⁵	0.8	1.1	1,015
Oklahoma ⁶	4.0	5.4	2,488
Texas ⁷	2.9	3.9	8,761
West Virginia ⁸	3.7	5.0	1,319
Pennsylvania Total	6.5	8.5	4,771
Current Impact Fee	0.9	1.1	
Proposed Severance Tax ⁹	5.6	7.4	

¹ The wellhead price excludes post-production costs, which are assumed to be \$0.80/mcf in 2016 and increase with inflation.

² Natural gas production for 2015 (billions of cubic feet). Source: U.S. Energy Information Administration.

³ Arkansas assesses a value-based tax of 5.0% plus a volume-based administrative fee of 0.9 cents/mcf. A reduced value-based rate of 1.5% is assessed for the first three years, and for an additional fourth year if the operator's market revenue has not exceeded the drilling and completion costs.

⁴ Louisiana assesses a volume-based tax plus a volume-based administrative fee of 0.3 cents/mcf. The tax rate is adjusted based on the level of the Henry Hub price during the previous year. A reduced volume-based tax rate, also determined by the level of the Henry Hub price, applies for the first two years unless drilling and completion costs have been recouped.

⁵ Ohio assesses a volume-based tax of 2.5 cents/mcf and an administrative fee of 0.5 cents/mcf.

⁶ Oklahoma assesses a value-based rate of 7.0%, an excise tax of 0.085%, and an administrative fee of 0.0015 cents/mcf. A reduced value-based rate of 2.0% is assessed for the first two years.

⁷ Texas assesses a value-based tax of 7.5% plus a volume-based administrative fee of 1/15 of one cent/mcf. A reduced value-based rate is assessed on wells for the first ten years, or until the cumulative value of the reduction equals half of the drilling and completion costs.

⁸ West Virginia assesses a 5.0% value-based tax. The former volume-based tax of 4.7 cents/mcf is no longer in effect.

⁹ Proposed severance tax imposes the tax at the hub. Other states impose the tax at the wellhead.

Bank Shares Tax

The administration's proposal (1) increases the tax rate from 0.89 to 0.99 percent retroactive to January 1, 2016, (2) allows banks to choose between two apportionment methods for investment and trading activity and (3) clarifies the statute regarding the goodwill deduction.

Methodology

The revenue estimate pertains only to the increase in the tax rate. The estimate for the rate increase uses the IFO's current bank shares tax forecast, adjusted to the higher tax rate. The proposed change in the apportionment methods for investment and trading activity is assumed to be consistent with current taxpayer behavior and reflected in the tax base. Revenue losses attributable to the clarification of the goodwill deduction are assumed to be minimal.

Revenue Impact

The proposal increases revenues by \$69.6 million in FY 2016-17, and \$33.7 million is associated with the retroactivity of the tax increase to January 1, 2016.

	Bank Shares Tax Revenues				
	2016-17	2017-18	2018-19	2019-20	2020-21
Rate Increase	\$69.6	\$37.0	\$38.1	\$39.2	\$40.4
Note: millions of dollars.					

Insurance Premiums Tax

The administration’s proposal adds a 0.5 percent surcharge to the current 2.0 percent insurance premiums tax (IPT) rate imposed on premiums resulting from fire, property and casualty policies. The new surcharge is effective for tax year 2016.

Methodology

The revenue estimate utilizes the IFO’s current IPT forecast and projections for deposits to the Municipal Pension Aid Fund (MPAF) and the Fire Insurance Tax Fund (FITF), adjusted to the higher tax rate (surcharge) imposed on specified premiums. The collections from the retaliatory tax (imposed on out-of-state insurers incorporated in states that impose an IPT rate higher than the rate imposed in Pennsylvania) are reduced to reflect the newly increased Pennsylvania rates.

Revenue Impact

The proposal increases revenues by \$206.5 million in FY 2016-17, and \$98.1 million is associated with the retroactivity of the surcharge to the beginning of tax year 2016. The estimate is net of any reduction in the retaliatory tax and assumes that the entire surcharge is deposited into the General Fund (no impact on the MPAF or the FITF).

	Insurance Premiums Tax Revenues				
	2016-17	2017-18	2018-19	2019-20	2020-21
Surcharge	\$206.5	\$110.0	\$111.7	\$113.4	\$115.2

Note: millions of dollars.

Tobacco Taxes

The administration's proposal (1) increases the statewide tax from 8 cents to 13 cents per cigarette (an increase from \$1.60 to \$2.60 per pack) and (2) imposes a new tax on other tobacco products equal to 40 percent of the purchase price charged to a tobacco retailer (i.e., the wholesale price). The estimate assumes cigars, cigarillos, chewing tobacco and snuff, as well as other tobacco products are included. The fixed dollar amount of cigarette tax revenues transferred to the Children's Health Insurance Program and the Agricultural Conservation Easement Purchase Program remains unchanged. The estimates assume that a floor tax equal to one month of consumption is imposed and both tax increases are effective July 1, 2016.

Methodology

Cigarettes The estimate assumes that the tax increase is fully passed forward to consumers, who have a price elasticity of -0.5. This assumption implies that the projected 16 percent increase in the after-tax price of cigarettes reduces the number of taxable packs sold by 8 percent. However, the estimate also assumes that the tax increase will not affect the long-term decline in revenues (roughly -3.0 percent per annum).

Other Tobacco Products The estimate assumes that the tax increase is fully passed forward to consumers, and is based on other tobacco products tax collections in Michigan and e-cigarette tax collections in Minnesota. Actual collections for those states are adjusted to reflect tax rate and base differences between those states and the administration's proposal. A Pennsylvania-specific estimate is then determined by further adjusting for differences in the male population 18 years or older and the prevalence of other tobacco products and e-cigarette use in each state. The estimate uses a price elasticity of -0.45 to determine the sales reduction from imposition of the new tax.

Revenue Impact

The proposals increase revenues by \$610 million in FY 2017-18 (first full-year impact). The estimate includes gains in sales tax revenues, because sales tax is levied upon the after-tax price of cigarettes and other tobacco products. The net sales tax gain from the higher tobacco taxes is \$18 million for FY 2017-18.

	Tobacco Tax Revenues				
	2016-17	2017-18	2018-19	2019-20	2020-21
Cigarette	\$472.2	\$459.4	\$445.4	\$437.0	\$428.2
Other Tobacco Products	<u>146.7</u>	<u>151.0</u>	<u>155.1</u>	<u>159.4</u>	<u>163.8</u>
Total	618.9	610.4	600.5	596.4	592.0

Note: millions of dollars.

Interstate Comparison

For 2016, Pennsylvania levies the 22nd highest cigarette tax rate across states. Under the proposal, Pennsylvania's rank would increase to 10th highest. These comparisons exclude the additional \$2 per pack cigarette tax that is levied on purchases in Philadelphia. Under the proposal, the combined tax for Philadelphia would be \$4.60 per pack, highest in the nation except for the combined rate for New York City (\$5.85 per pack). Pennsylvania is the only state that does not levy tax on other tobacco products.

Tobacco Products State Tax Rates for 2016

State	Cigarettes (cents/pack)	Other Tobacco Products
Alabama	67.5	Cigars: 3.0¢-40.5¢ / 10 cigars. Tobacco/Snuff: 2¢-8¢ / ounce
Alaska	200.0	75% of Wholesale Price
Arizona	200.0	Cigars: 22.01¢-\$2.18 / 10 cigars. Tobacco/Snuff: 22.3¢ / ounce
Arkansas	115.0	68% of Manufacturer's Price
California	87.0	28.13% of Wholesale Price
Colorado	84.0	40% of Manufacturer's Price
Connecticut	365.0	50% of Wholesale Price
Delaware	160.0	15% of Wholesale Price
Florida	133.9	Tobacco/Snuff: 85% of Wholesale Price
Georgia	37.0	Other Cigars:23% of Wholesale Price. Tobacco:10% of Wholesale Price
Hawaii	320.0	Large Cigars: 50% of Wholesale Price. Tobacco/Snuff: 70% of Wholesale Price
Idaho	57.0	40% of Wholesale Price
Illinois	198.0	36% of Wholesale Price
Indiana	99.5	24% of Wholesale Price
Iowa	136.0	50% of Wholesale Price
Kansas	129.0	10% of Wholesale Price
Kentucky	60.0	15% of Wholesale Price
Louisiana	86.0	Cigars: 8-20% of Manuf. Price. Snuff/Smoking Tobacco: 20-33% of Manuf. Price
Maine	200.0	Tobacco/Snuff: \$2.02/ounce. Smoking Tobacco/Cigars: 20% of Wholesale Price
Maryland	200.0	Tobacco/Snuff: 30% of Wholesale Price. Cigars: 70% of Wholesale Price
Massachusetts	351.0	40% of Wholesale Price
Michigan	200.0	32% of Wholesale Price
Minnesota	300.0	95% of Wholesale Price
Mississippi	68.0	15% of Manufacturer's Price
Missouri	17.0	10% of Manufacturer's Price
Montana	170.0	50% of Wholesale Price
Nebraska	64.0	20% of Wholesale Price
Nevada	180.0	30% of Wholesale Price
New Hampshire	178.0	48% of Wholesale Price
New Jersey	270.0	30% of Wholesale Price
New Mexico	166.0	25% of Product Value
New York	435.0	75% of Wholesale Price
North Carolina	45.0	12.8% of Wholesale Price
North Dakota	44.0	Cigars/Tobacco: 28% of Wholesale Price. Snuff/Chew Tobacco: 16¢-60¢ / ounce
Ohio	160.0	17% of Wholesale Price
Oklahoma	103.0	Cigars Little & Large: \$1.20 / 10 cigars. Snuff/Tobacco: 60%-80% Factory List Price
Oregon	132.0	65% of Wholesale Price
Pennsylvania	160.0	None
Rhode Island	375.0	80% of Wholesale Price
South Carolina	57.0	5% of Manufacturer's Price
South Dakota	153.0	35% of Wholesale Price
Tennessee	62.0	6.6% of Wholesale Price
Texas	141.0	Cigars: 1.0¢-15.0¢ / 10 cigars. Tobacco/Snuff: \$1.22 / ounce
Utah	170.0	86% of Manufacturer's Price
Vermont	308.0	92% of Wholesale Price. Cigar: \$20-\$40 / 10 cigars. Tobacco/Snuff: \$2.57 / ounce
Virginia	30.0	10% of Manufacturer's Price
Washington	302.5	95% of Wholesale Price
West Virginia	55.0	7% of Wholesale Price
Wisconsin	252.0	71% of Manufacturer's Price
Wyoming	60.0	20% of Wholesale Price

Source: Federation of Tax Administrators.

Promotional Play Tax

The administration's proposal imposes a tax of 8.0 percent on promotional play for slot machines. The estimate assumes that the proposal is effective on July 1, 2016.

Methodology

The estimate uses slot machine promotional play (both internal and external) as reported by the Pennsylvania Gaming Control Board in their monthly revenue reports, multiplied by the proposed 8.0 percent tax rate. For FY 2014-15, Pennsylvania casinos reported \$621.9 million of promotional play.

The estimate assumes a 10 percent reduction in promotional play due to the higher tax rate. From that lower base, promotional play is assumed to grow at the same rate as gross terminal revenue generated from regular slots play. Gross terminal revenue (wagers less payouts) from slots is taxed at a rate of 55 percent, and revenues are deposited into various funds. Industry data suggest that the reduction in promotional play would reduce regular slots play by a multiple of that reduction. However, the analysis could not reliably estimate the magnitude of that decline.

Revenue Impact

The proposal increases revenues by \$45.6 million in FY 2017-18. The estimate does not include any reductions to non-General Fund revenue sources.

	Promotional Play Tax Revenues				
	2016-17	2017-18	2018-19	2019-20	2020-21
New 8% Tax	\$45.3	\$45.6	\$46.1	\$46.6	\$47.2

Note: millions of dollars.

Interstate Comparison

Currently, Pennsylvania is one of six casino gaming states that do not tax promotional play or credits. Eight states tax promotional play as part of normal table or slots revenue. Seven states exempt a certain portion (either a percentage or a dollar amount) of promotional play from tax. Three states have more complex rules that determine the tax status of promotional play. (See table on next page.)

Tax Treatment of Promotional Credits or “Free Play”

State	Tax Treatment
Delaware	Permitted to issue 20% of prior year's net terminal income tax free
Colorado	Taxed as normal revenue
Florida	Not taxed
Illinois	Taxed as normal revenue
Indiana	Each licensee is permitted to offer up to \$5 million in promotional credits per year tax-free.
Iowa	Taxed as normal revenue
Kansas	Not taxed
Louisiana	Taxed as normal revenue
Maine	Taxed as normal revenue
Maryland	Up to 20 percent of the total video lottery terminal proceeds from the previous fiscal year may be used as tax-free promotional play.
Massachusetts	Not taxed
Michigan	Taxed as normal revenue
Mississippi	If promotional credits have a cash value (i.e., can be readily exchanged for cash), they are taxed as normal revenue. Non-cash value credits are not included as revenue and not taxed.
Missouri	Taxed as normal revenue
Nevada	Not taxed
New Jersey	The first \$90 million in promotional credit is taxed as part of gross revenue, but once that threshold is passed, anything above it is not taxed.
New Mexico	For gaming taxes, a promotional system can be operated in one of the following scenarios: 1. All promotional credits played shall be counted as revenue, and all prizes shall be deducted in calculating net win for gaming tax purposes. 2. All promotional credits played are excluded from revenue and associated prizes are not deductible in calculating net win for gaming tax purposes. 3. All promotional credits played shall be excluded from revenue, and associated prizes, calculated as the total monthly payout percentage multiplied by the total promotional credits played, are not be deductible. 4. An alternate methodology submitted by the licensee and approved by the Board.
New York	Promotional (free play) credits up to a maximum of 15% of a facility's net win are excluded from revenue calculations.
Ohio	Not taxed
Oklahoma	Taxed as normal revenue
Pennsylvania	Not taxed
Rhode Island	Ten percent of the previous year's net terminal income plus \$750,000 may be used as tax-free promotional play.
South Dakota	Taxed as normal revenue. However, following a 2014 court decision, a new method will go into effect that requires cash prizes deducted must be "adjusted to include an amount equal to 90 percent of the free play value." The new promotional play rules will take effect July 1, 2015, but some operators may choose to begin following the rules before then.
West Virginia	The Lottery reviews the amount of the tax-free promotional play operators are permitted to issue every quarter. Currently, operators are allowed to issue about 2-3% of amount played (i.e., handle) as tax-free promotional credits.

Note: Includes commercial casinos only.

Source: American Gaming Association.

Other Revenue Proposals

In addition to the taxes discussed in the previous subsections, the proposals contained in the *2016-17 Executive Budget* will affect other funds and tax revenues. The text that follows describes those impacts.

Tipping Fee

The administration's proposal increases the tipping fee for solid waste landfill disposals from \$6.25 to \$8.00 per ton. In addition, the tax base is expanded to include construction and hazardous waste. The changes are effective July 1, 2016. Revenue attributable to the increased fee will be deposited into the Oil and Gas Lease Fund. For FY 2016-17 (first full-year of implementation), the administration projects \$35 million of additional revenues.

Change to Corporate Net Income Tax Filing Deadline

The administration's proposal changes the corporate net income tax filing deadline from April 15 to May 15 for calendar-year filers effective for tax year 2016. The change aligns corporate filing deadlines in Pennsylvania with federal filing deadlines, which, beginning in tax year 2016, were extended 30 days. Filing deadlines for fiscal-year filers remains 30 days after the corporation's federal due date. The revenue impact should be nominal.

Transfers to School Employees' Retirement Restricted Account

The administration proposes transferring \$560.6 million from the General Fund to the School Employees' Retirement Restricted Account in FY 2016-17. This amount reflects a portion of the estimated impact from the proposed increase in the PIT rate from 3.07 percent to 3.40 percent effective July 1, 2016.

Transfer from the Dormitory Sprinkler System Account

The administration proposes returning \$4.5 million of funds not needed for sprinkler project debt service to the General Fund in FY 2016-17.

Transfer of Slots License Fee

The administration proposes to deposit the slot license fee for the second Philadelphia category 2 slots facility in the General Fund. The Pennsylvania Supreme Court recently remanded that license back to the Pennsylvania Gaming Control Board for further investigation and proceedings. As a result, it is likely that the \$50 million slot machine license fee will not be received until after FY 2016-17.

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Raising the Minimum Wage

The administration's proposal increases the state minimum wage from the federal minimum of \$7.25 per hour to \$10.15 per hour. The analysis assumes that the proposal is effective January 1, 2017 and that tipped workers who receive a minimum wage of \$2.83 per hour are unaffected.

Minimum Wage by State						
	2017 Rank	2016	2017	2018	2019	2020
District of Columbia	1	\$11.50	\$11.74	\$12.01	\$12.29	\$12.58
Oregon - Portland metro	2	\$9.75	\$11.25	\$12.00	\$12.50	\$13.25
Oregon - other		\$9.50	\$10.00	\$10.50	\$11.00	\$11.50
Massachusetts	3	\$10.00	\$11.00	\$11.00	\$11.00	\$11.00
New York City metro	3	\$9.00	\$11.00	\$13.00	\$15.00	\$15.00
New York - other		\$9.00	\$9.70	\$10.40	\$11.10	\$11.80
California	5	\$10.00	\$10.50	\$11.00	\$12.00	\$13.00
Connecticut	6	\$9.60	\$10.10	\$10.10	\$10.10	\$10.10
Vermont	7	\$9.60	\$10.00	\$10.50	\$10.75	\$11.01
Alaska	8	\$9.75	\$9.95	\$10.18	\$10.41	\$10.66
Washington	9	\$9.47	\$9.67	\$9.89	\$10.12	\$10.36
Rhode Island	10	\$9.60	\$9.60	\$9.60	\$9.60	\$9.60
Minnesota	11	\$9.00	\$9.50	\$9.72	\$9.94	\$10.18
Maryland	12	\$8.75	\$9.25	\$10.10	\$10.10	\$10.10
Hawaii	12	\$8.50	\$9.25	\$10.10	\$10.10	\$10.10
Nebraska	14	\$9.00	\$9.00	\$9.00	\$9.00	\$9.00
Michigan	15	\$8.50	\$8.90	\$9.25	\$9.46	\$9.69
West Virginia	16	\$8.75	\$8.75	\$8.75	\$8.75	\$8.75
South Dakota	16	\$8.55	\$8.75	\$8.95	\$9.15	\$9.35
New Jersey	18	\$8.38	\$8.56	\$8.76	\$8.96	\$9.18
Arkansas	19	\$8.00	\$8.50	\$8.50	\$8.50	\$8.50
Colorado	20	\$8.31	\$8.48	\$8.68	\$8.88	\$9.09
Delaware	21	\$8.25	\$8.25	\$8.25	\$8.25	\$8.25
Illinois	21	\$8.25	\$8.25	\$8.25	\$8.25	\$8.25
Nevada	21	\$8.25	\$8.25	\$8.25	\$8.25	\$8.25
Ohio	21	\$8.10	\$8.25	\$8.45	\$8.65	\$8.85
Florida	25	\$8.05	\$8.22	\$8.41	\$8.60	\$8.81
Arizona	26	\$8.05	\$8.20	\$8.40	\$8.60	\$8.80
Montana	26	\$8.05	\$8.20	\$8.40	\$8.60	\$8.80
Missouri	28	\$7.65	\$7.80	\$8.00	\$8.20	\$8.40
Maine	29	\$7.50	\$7.50	\$7.50	\$7.50	\$7.50
New Mexico	29	\$7.50	\$7.50	\$7.50	\$7.50	\$7.50
Pennsylvania	31	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25
Remaining 20 States	31	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25

Note: For 2016, 23 localities have enacted a minimum wage above the state minimum. These local ordinances are not included in the table.
Source: Economic Policy Institute and The Wall Street Journal.

The table on the previous page ranks states based on the projected minimum wage for 2017 and shows projections through 2020. For 2017, Pennsylvania and 20 other states require that employers pay the federal minimum of \$7.25 per hour. By contrast, five states, New York City and the District of Columbia require employers to pay an hourly wage of \$10.00 or more. Oregon and New York use a multi-tiered system that requires employers to pay a higher rate in certain metro areas to offset the higher cost of living. By 2020, Alaska, Washington, New York, Maryland, Minnesota and Hawaii are also projected to require a minimum wage that exceeds \$10.00 per hour.

Workers Directly Affected by a Higher Minimum Wage

The analysis uses data from the Merged Outgoing Rotation Group dataset from the 2015 Current Population Survey (CPS). The CPS provides data on the labor force, employment levels, unemployment rates and various demographic characteristics. The monthly survey includes 60,000 U.S. households and is designed so that state-specific observations can be weighted to yield population totals for individual states.⁷

The CPS asks respondents to report their hourly wage or weekly salary, occupation, number of hours worked per week, age, sex and other demographic information. Many hourly-paid workers report compensation that falls below the federal minimum and most are employees who earn tips, such as food servers and bartenders. Employers may pay less than the federal minimum if a tipped worker earns at least \$30 per month in tips or commissions and total compensation equals an hourly wage rate of \$7.25 or more. For Pennsylvania, such employees can be paid a wage of \$2.83 per hour.

For 2015, the CPS dataset for Pennsylvania represents 5.60 million workers: 3.53 million reported an hourly wage, and 2.08 million reported that they were non-hourly workers. The great majority of workers

Workers Directly Affected by a \$10.15 Minimum Wage for 2015				
Hourly Wage Rate	Employees (000s)			Impact
	Part-Time	Full-Time	Total	
Less Than \$7.25	49.0	21.7	70.7	unaffected
At \$7.25	54.1	18.4	72.5	direct
\$7.26 to \$10.14	491.5	458.9	950.4	direct
\$10.15 to \$11.50	97.2	217.1	314.3	potential
\$11.51 to \$15.00	172.2	816.5	988.7	unaffected
More Than \$15.00	<u>216.7</u>	<u>2,990.8</u>	<u>3,207.6</u>	unaffected
Total	1,080.6	4,523.5	5,604.2	
Directly-Affected Workers (000s)	545.6	477.3	1,022.9	
Projected Employment Contraction	-19.8	-10.1	-29.8	
Receive Higher Wage	525.8	467.3	993.1	

Source: U.S. Census Bureau, Current Population Survey and Merged Outgoing Rotation Group dataset (2015) compiled by the National Bureau of Economic Research.

⁷ Although included in the survey, self-employed persons would not be affected by a higher minimum wage and are excluded from all tabulations in this section.

affected by an increase in the minimum wage are hourly-paid workers. However, the analysis includes certain non-hourly paid workers if their computed hourly wage was less than \$10.15 per hour.⁸

For 2015, the data reveal that 70,700 workers reported a wage less than \$7.25 per hour. All of those workers were employed in occupations that received tips. This figure is lower than a recent report issued by the Pennsylvania Department of Labor and Industry because the analysis assumed that workers who reported a wage of \$7.00 to \$7.24 per hour misreported their wage and actually received the federal minimum.⁹ Roughly 70 percent of workers who reported an hourly wage less than the federal minimum were employed on a part-time basis, where part-time is defined as an employee who works less than 35 hours for a typical week. The analysis assumes these workers are not affected by the proposal.

The analysis defines “directly affected” workers as those who earn a wage of \$7.25 to \$10.14 per hour. For 2015, the analysis finds 1.023 million workers who would have been directly affected by a \$10.15 minimum wage, and somewhat more than half (53.3 percent) were employed on a part-time basis. (See table on previous page.) It is noted that group includes some workers employed in occupations that may have received tips, but also reported an hourly wage that is greater than or equal to \$7.25 and less than \$10.15. For this analysis, there were 108,600 such workers in occupations such as bartenders (9,200), food servers (45,400), other servers (7,600), hosts (8,800) and hairdressers (13,700). It is possible that many would be unaffected by the proposal if their combined wages plus tips at least equals the new minimum wage. These workers are included in the analysis because employers paid them a wage that exceeds the current federal minimum, despite the fact that many likely received tips. The inclusion of these workers reflects a broad definition of directly-affected workers.

Many analyses also discuss workers who might be “potentially affected” by a higher minimum wage. Employers may want to maintain wage differentials between certain workers, and may increase wages for those who earn somewhat more than \$10.15 per hour. In a recent report, the Congressional Budget Office (CBO) called these effects “ripple effects” that could apply to workers who earn up to \$11.50 per hour (for states with a minimum wage of \$7.25). For 2015, the CPS data reveal 314,300 such workers who could be potentially affected by the increase in the minimum wage. The CBO report notes that “available research suggests that the average effect on the wages of those workers would be positive,” however the agency did not have a basis to estimate the number of workers whose earnings would increase.¹⁰ Following that convention, those workers were not included in the analysis. This exclusion offsets the broad treatment discussed in the previous paragraph.

⁸ Following the convention used by the U.S. Congressional Budget Office (CBO), the analysis includes non-hourly paid workers who earn an effective hourly wage that is below the proposed \$10.15 minimum wage. For respondents who reported weekly earnings instead of an hourly wage, an effective hourly wage was computed as their reported usual earnings per week divided by their reported usual hours worked per week. See *The Effects of a Minimum Wage Increase on Employment and Family Income*, CBO (February 2014).

⁹ The approach follows the convention used by the CBO study. The adjustment applied to 17,900 workers, and the great majority were employed in occupations that did not receive tips. The analysis also corrected obvious errors in reported hourly wages, such as wage rates that were less than \$1 per hour. For those cases, other reported data or an industry-wide average for the occupation were used to determine an hourly wage rate. See *Analysis of the Pennsylvania Minimum Wage*, Pennsylvania Department of Labor and Industry (March 2016).

¹⁰ See *supra* note 8, at page 21.

Potential Employment Impact of a Higher Minimum Wage

In a November 2015 research brief, the Independent Fiscal Office used parameters from a February 2014 CBO study to determine the impact of a higher minimum wage on employment.¹¹ Based on an extensive survey of academic research, the CBO study derived two parameters to estimate how teen and adult employment levels would respond to a higher minimum wage. For teens, the CBO study used an elasticity parameter of -0.45, implying that a 10.0 percent increase in the minimum wage would reduce employment levels for teens directly affected by 4.5 percent. For adults, the elasticity was considerably lower (-0.15). Based on these parameters and the composition of workers who would be directly affected by a higher wage, the CBO study projected that 16.5 million U.S. workers would receive a higher wage of \$10.10 per hour, and an employment contraction of 500,000 workers, or roughly 3 percent of workers directly affected. The CBO study notes that this employment impact includes the overall increase in demand that would be driven by workers who receive (and spend) a higher wage.¹²

Under the current minimum wage, the analysis assumes that the number of directly-affected workers does not change from the tabulations on page 22, and the average wage paid to those workers increases by 2.5 percent by 2017. Under the proposed minimum wage (\$10.15), the application of the CBO parameters yields a projected employment contraction of 29,800 (2.9 percent) workers, and a higher wage received by the 993,100 workers who retain employment. It is likely that any employment contraction would be spread over more than one year, and would be reflected through the failure to fill vacancies, the release of employees, and a slower rate of hiring compared to a counterfactual where the minimum wage did not increase. Therefore, any employment contraction would not take place immediately on the date a higher wage became effective.

Potential Income and Revenue Impact of a Higher Minimum Wage

The table on the next page displays the potential income effect from a higher minimum wage. As noted, the CPS data show that slightly more than one-half of directly-affected workers are part-time employees, and the analysis assumes that the typical part-time employee works a 20-hour workweek. Based on the CPS data and the assumption of a small gain in the median part-time wage, the analysis projects that the typical part-time worker who is directly affected and retains employment would receive a wage increase of \$1.52 per hour. The projected gross income gain across all part-time workers is \$833 million ($525,800 * 20 * 52 * \1.52).

The analysis assumes that the median full-time employee works a 40-hour workweek. For those workers, the median wage increase is \$0.82 per hour and the gross income gain is \$799 million. Across all workers who retain employment, the income gain is \$1.63 billion.

The analysis projects that roughly two-thirds (19,800) of the employment contraction would be realized by part-time workers. For a typical 20-hour workweek and median wage under the current minimum wage rate, this implies a gross income reduction of \$177 million for those workers. For full-time workers, the reduction is \$195 million.

¹¹ See *Raising the Minimum Wage in Pennsylvania*, IFO Research Brief 2015-4 (November 2015).

¹² See *supra* note 8, at pages 26 and 27.

Potential Income Impact from a \$10.15 Minimum Wage

	Part-Time	Full-Time	Total
Workers Receiving a Higher Wage (000s)	525.8	467.3	993.1
Typical Workweek (hours)	20.0	40.0	n.a.
Median Hourly Wage Gain	\$1.52	\$0.82	n.a.
Gross Annual Income Gain (\$ millions)	\$833	\$799	\$1,632
Employment Contraction (000s)	-19.8	-10.1	-29.8
Typical Workweek (hours)	20.0	40.0	n.a.
Median Wage	\$8.63	\$9.33	n.a.
Gross Annual Income Loss (\$ millions)	-\$177	-\$195	-\$373
Total Gross Income Change (\$ millions)	\$655	\$604	\$1,259
Total Net Income Change (\$ millions)	\$605	\$558	\$1,163

Across all directly-affected workers, the gross income gain is \$1.26 billion. However, employers must withhold the employee's share of payroll taxes (7.65 percent) on the additional wage income, yielding a net income gain of \$1.16 billion that may be spent. By comparison, total wages received by Pennsylvania residents was \$306.5 billion for 2015, so the gross income gain is 0.4 percent of total wages, and a lower share if all types of income are included.

Many studies assume that most higher wage costs are pushed forward to final consumers, and a smaller portion reduces profits.¹³ Under that assumption, the higher minimum wage largely functions as an income transfer to low-wage workers who retain employment from consumers and business owners who are indirectly affected through higher prices and/or lower profits. Non-residents would also absorb a portion of the higher wage cost, such as tourists who would pay higher prices at restaurants or retail outlets.

Consumer survey data suggest that this shift in household income would yield higher overall spending levels because low-income workers have a higher propensity to spend any income they receive compared to higher-income consumers and business owners.¹⁴ This differential in the propensity to spend facilitates the higher income and spending levels identified by many minimum wage studies. This effect is referred to as the "multiplier effect" and studies have used various estimates for that effect:

- A March 2016 study by the Center on Wage and Employment Dynamics assumes that a \$1 change in income for low-income households has a much larger impact on Gross Domestic Product (GDP or total purchases) compared to higher-income households.¹⁵ For higher-income households (above \$75,000), a \$1 increase in household income boosts total demand by an average of

¹³ Studies also assume that the higher wage manifests itself through reductions in non-wage benefits and training, business savings through lower turnover costs, changes in employment composition, improvements in efficiency, and wage compression. See *Why Does the Minimum Wage Have No Discernible Effect on Employment?*, Center for Economic and Policy Research (February 2013).

¹⁴ The U.S. Bureau of Labor Statistics publishes data on the spending habits of consumers in the Consumer Expenditure Survey. See <http://www.bls.gov/cex/>.

¹⁵ See *The Effects of a \$15 Minimum Wage in New York State*, Center on Wage and Employment Dynamics, Institute for Research on Labor and Employment, University of California, Berkeley (March 2016), p. 28.

80 cents because a portion is saved or remitted as tax. For low-income households, a \$1 increase in household income boosts demand by \$1.20.

- A study by the Economic Policy Institute assumes that a \$1 increase in wages for workers directly affected by a higher minimum wage would increase GDP by 53 to 74 cents. The lower estimate assumes that 50 percent of the higher minimum wage is passed through to consumers, while the other half reduces corporate profits. The higher estimate assumes that only 20 percent is passed through to consumers.¹⁶
- Researchers at the Chicago Federal Reserve find that although a higher minimum wage could increase GDP by an amount roughly equal to the net income gains of directly-affected workers in the year following the wage increase, the impact on real GDP would be “close to zero over the long run.”¹⁷

The multiplier effect should translate into a modest net increase in spending and output. As noted, the CBO study includes this impact. However, the study does not provide detail regarding the origin of the income transfer and the portion attributable to lower profits, higher prices, or other factors. In general, if more of the income transfer is attributable to lower corporate profits, then that outcome implies a higher net multiplier from the income transfer. That outcome occurs because the corporate profits multiplier (i.e., the increase in GDP from an incremental \$1 of profits) is relatively low as corporations (1) retain earnings, (2) remit significant federal and state tax and (3) pay dividends to higher-income households who have lower propensities to spend than low-income workers. Conversely, low-income workers spend all of their income (and borrow against it), so that the net impact on GDP from an income transfer could be significant. If the income transfer is facilitated through higher prices, then any net multiplier effect is smaller because higher prices affect all consumers, not just those with higher incomes.

Due to the complexity of the analysis, it is not possible to provide a reliable point estimate of the General Fund revenue impact from raising the minimum wage. For example, an analysis would need to identify and account for the following factors:

- The origin of the income transfer to low-wage workers. As noted, if the income transfer is attributable to lower corporate profits, it would imply a higher net multiplier. However, the analysis must also account for the fact that corporate profits are taxed at a much higher rate than personal income. The analysis would need to consider the types of corporations that would be affected and their apportionment factors to determine how much of the higher wage cost impacts the Pennsylvania corporate tax base.
- The share of new income received by low-wage workers that would be offset by the higher tax forgiveness thresholds. Tax and survey data suggest that roughly one-quarter to one-third of the new income received by low-wage workers could qualify for tax forgiveness. However, there is considerable uncertainty regarding that parameter.
- The share of new income received by low-wage workers that would be spent on items subject to sales and use tax.

¹⁶ See *How Raising the Federal Minimum Wage Would Help Working Families and Give the Economy a Boost*, Economic Policy Institute, Issue Brief No. 341 (August 2012) p. 13. If 100 percent of the higher wage costs is passed forward to consumers, then the dollar increase in GDP is roughly 20 cents.

¹⁷ See *How Does a Federal Minimum Wage Hike Affect Aggregate Household Spending?*, Chicago Fed Letter No. 313 (August 2013). The study assumes that all higher wage costs are passed forward to final consumers.

- The portion of any price increase or profit reduction that is borne by non-residents.

Assuming that the proposal yields a modest increase in overall GDP due to the income transfer to low-wage workers, it is likely that the proposal would also result in a modest increase in General Fund revenues through higher personal income and sales and use tax. Although it is not possible to provide a reliable point estimate, a plausible estimate could range from \$10 to \$40 million of revenues.

With regard to expenditures, the Commonwealth would be impacted by higher costs related to the increase in the statewide minimum wage. Recently, the administration issued an Executive Order (2016-02) which increased the minimum wage to \$10.15 per hour for all state employees and certain workers employed by entities under contract with the state. The administration estimates that the Executive Order will increase expenditures by \$4.1 million per annum. It is not immediately clear how a statewide increase in the minimum wage would impact General Fund expenditures. In general, expenditures related to service providers who receive state funds indirectly, such as certain healthcare or daycare workers, would likely increase. However, the state would also likely realize savings through lower enrollment in certain social safety net programs.