Independent Fiscal Office

ANALYSIS OF REVENUE PROPOSALS

APRIL 2020

FY 2020-21 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 policy it analyzes, and will disclose the methodologies, data sources and assumptions used in published reports and estimates.

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INDEPENDENT FISCAL OFFICE

April 23, 2020

The Honorable Members of the Pennsylvania General Assembly:

This report provides an analysis of the tax and revenue proposals included in the *2020-21 Executive Budget* released in February 2020. The Independent Fiscal Office (IFO) publishes this report to fulfill its statutory duties as provided under Section 604-B (a)(4) of the Administrative Code of 1929. The statute 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 report 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 agencies and organizations that provided data or input for this report. Questions or comments regarding the contents of this report can be submitted to contact@ifo.state.pa.us.

Sincerely,

MATTHEW J. KNITTEL
Director

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Introduction

This report provides revenue estimates for the tax and revenue proposals contained in the *2020-21 Executive Budget* released in February 2020. The Independent Fiscal Office (IFO) publishes this report to fulfill its statutory duties as provided under Section 604-B (a)(4) of the Administrative Code of 1929. The statute 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 tax and revenue proposals included in the *2020-21 Executive Budget* and the corresponding impact on General Fund revenues over a five-year period. The text includes brief descriptions of the data sources and methodologies used to derive the revenue estimates, as well as an interstate comparison of corporate net income tax (CNIT) rates and filing methods. The second section analyzes the proposal to increase the state minimum wage from $7.25 to $12.00 per hour. It discusses potential employment effects, income effects and implications for General Fund revenues and expenditures. Currently, no state has a $15.00 minimum wage that could be used to inform potential outcomes from further increasing the minimum wage to that level. Hence, the section provides only general comments on the proposed increase in the state minimum wage from $12.00 to $15.00 per hour over a six-year period.

The analyses contained in this report are based on descriptions from the *2020-21 Executive Budget* and, when available, technical language provided by the administration. For this year, the administration provided language for the proposed CNIT rate reduction and enactment of combined reporting, but language was not available for the proposed increase in the minimum wage or the newly proposed transfers.

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Tax and Revenue Proposals

The *2020-21 Executive Budget* proposes (1) changes to the corporate net income tax (CNIT), (2) new transfers from the personal income tax (PIT), sales and use tax (SUT) and cigarette tax to various funds and (3) a modification of the transfer from the Video Gaming Fund to the General Fund. This analysis projects that the proposals will reduce General Fund revenues by $145 million in fiscal year (FY) 2020-21. The reduction is projected to increase to $1.1 billion by FY 2024-25.

Table 1.1
General Fund Revenue Impact Summary

	20-21	21-22	22-23	23-24	24-25
Corporate Net Income Tax	-$9	-$12	-$219	-$534	-$787
Sales and Use Tax	-5	-12	-12	-12	-12
Cigarette Tax	-115	-115	-115	-115	-115
Personal Income Tax	-14	-14	-13	-11	-176
Gaming Taxes	-2	n.a.	n.a.	n.a.	n.a.
Total	**-145**	**-153**	**-359**	**-673**	**-1,091**

Note: Figures in dollar millions. The need for reduced Video Gaming Fund transfers in future years is undetermined at this time.

Corporate Net Income Tax

The administration's proposal (1) reduces the CNIT rate from 9.99 percent to 8.99 percent for tax years beginning in 2021, 8.29 percent for tax years beginning in 2022, 7.49 percent for tax years beginning in 2023, 6.99 percent for tax years beginning in 2024 and 5.99 percent for tax years beginning in 2025 and thereafter and (2) requires corporations that are members of a unitary business group to apportion their income via a combined annual report for tax purposes, a filing method commonly known as combined reporting, effective for tax years beginning in 2021 and thereafter.[1]

Background and Methodology

The CNIT proposal was analyzed in the following order: (1) combined reporting and (2) rate reduction. The stacking order does not affect the total net impact of the proposal, but it does change the relative magnitude of the individual combined reporting and rate reduction estimates. Previous IFO analyses scored the

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[1] A unitary business is a single economic enterprise that is comprised of separate parts of a single business entity or of a commonly controlled group of business entities that are sufficiently interdependent, integrated and interrelated through their activities so as to provide a synergy and mutual benefit that produces a sharing or exchange of value among them and a significant flow of value to the separate parts. Source: "Allocation and Apportionment Regulations" Multistate Tax Commission (MTC) www.mtc.gov/uploadedFiles/Multistate_Tax_Commission/Uniformity/Uniformity_Projects/A_-_Z/AllocaitonandApportionmentReg.pdf.

impact of the rate reduction first, but the stacking order was reversed to facilitate a comparison to the Department of Revenue (DOR) estimate (utilized for the Executive Budget). Due to this reversal, the separate rate reduction and combined reporting estimates will appear larger than estimates published by the IFO in previous years.

Combined Reporting

Under mandatory combined reporting, multi-state businesses that form a unitary group are required to file a combined return as if the related entities were a single corporation. The combined return reflects the net income or loss associated with the business operations of all members of the unitary group and income is apportioned to the taxing jurisdiction based on the activity of the combined group in that jurisdiction. Supporters assert that this filing method reduces a firm's ability to shift profits to lower or no tax states through related-party transactions and is subject to less manipulation by firms. Supporters also note that the filing method will "level the playing field" because Pennsylvania-only firms cannot shift profits to other states. Opponents assert that it will subject profits to tax that have little or no economic connection to the state and constrain economic growth. They also assert that the filing method will introduce significant administrative complexity.

Determination of the unitary group is a key component of combined reporting and is generally based on the ownership of the group, as well as the relationships between the corporations within the group. Estimating the impact from the enactment of combined reporting is subject to uncertainty, largely because tax authorities lack full information regarding the characteristics of potential unitary groups. Compared to separate entity reporting, the overall taxable income and apportionment for each member of the group will change based on the group's composition, and some groups will realize an increase in tax liability, while others realize a reduction. The determination of the unitary group can be complicated, subjective and could be the subject of lengthy litigation.

Despite this uncertainty, tax administrators and most academics believe that combined reporting increases tax collections in high tax rate states because it eliminates various methods that can be used to shift profits to low or no tax states. The combined reporting methodology described later in this section relies on a basic statistical comparison and revenue trends from three states that have enacted combined reporting. The results from that comparison are corroborated by revenue estimates published by seven states that recently enacted combined reporting. Two other states did not publish an estimate due to the uncertainty of the revenue impact.

Rate Reduction

The estimate applies the proposed rate reduction to the IFO's most recent CNIT baseline projection after adjustment for combined reporting. It is noted that the baseline projection disregards the anticipated large reduction in calendar year (CY) 2020 profits due to COVID-19. Therefore, the estimate reflects the revenue impact that could be anticipated when the state economy operates close to full capacity. This assumption also facilitates a comparison to the estimates published in the Executive Budget released in February 2020 because those figures did not assume an economic downturn. The IFO estimate includes a behavioral impact that partially offsets the static revenue loss due to the lower tax rate. When fully phased in, the 40 percent reduction in the tax rate should be sufficient to have a positive impact on firms' location decisions.

Interstate Comparison

Table 1.2 provides a comparison of (1) state CNIT rates and (2) applicable reporting methods. Forty-four states currently levy a CNIT, with the highest statutory rate (12.00 percent) levied by Iowa and the third highest levied by Pennsylvania (9.99 percent).[2] Fourteen states use a graduated rate structure, while 30 levy a flat rate. Since 2008, 16 states and the District of Columbia have reduced their top CNIT rate.[3]

Table 1.2
States with Corporate Net Income Tax

State	Tax Rate	Method	State	Tax Rate	Method
Alabama[1]	6.50%	Separate	Minnesota	9.80%	Combined
Alaska	0.00 - 9.40%	Combined	Mississippi	3.00 - 5.00%	Multiple
Arizona	4.90%	Combined	Missouri[2]	4.00%	Separate
Arkansas	1.00 - 6.50%	Separate	Montana	6.75%	Combined
California	8.84%	Combined	Nebraska	5.58 - 7.81%	Combined
Colorado	4.63%	Combined	New Hampshire	7.70%	Combined
Connecticut	7.50%	Combined	New Jersey	6.5 -10.5%	Combined
Delaware	8.70%	Separate	New Mexico	4.80 - 5.90%	Combined
Florida	4.46%	Separate	New York	6.50%	Combined
Georgia	5.75%	Separate	North Carolina	2.50%	Multiple
Hawaii	4.40 - 6.40%	Combined	North Dakota	1.41 - 4.31%	Combined
Idaho	6.93%	Combined	Oklahoma	6.00%	Separate
Illinois	9.50%	Combined	Oregon	6.60 - 7.60%	Combined
Indiana	5.50%	Multiple	**Pennsylvania**	**9.99%**	**Separate**
Iowa[2]	6.00 - 12.00%	Separate	Rhode Island	7.00%	Combined
Kansas	4.00 - 7.00%	Combined	South Carolina	5.00%	Multiple
Kentucky	5.0%	Combined	Tennessee	6.50%	Multiple
Louisiana[1]	4.00 - 8.00%	Separate	Utah	4.95%	Combined
Maine	3.50 - 8.93%	Combined	Vermont	6.00 - 8.50%	Combined
Maryland	8.25%	Separate	Virginia	6.00%	Multiple
Massachusetts	8.00%	Combined	West Virginia	6.50%	Combined
Michigan	6.00%	Combined	Wisconsin	7.90%	Combined

Notes: States designated as "multiple" generally require separate reporting, but either allow taxpayers to elect another form of reporting, or may require combined reporting based on audits. Indiana's rate decreases to 5.25% on July 1, 2020.

1 State allows corporation to deduct all federal taxes paid from state taxable income.

2 State allows corporation to deduct up to 50% of federal taxes paid from state taxable income.

Source: CCH State Tax SmartCharts (April 2020).

As of 2020, 27 states and the District of Columbia require combined reporting for businesses that meet unitary group standards. The most recent states to enact combined reporting were Kentucky and New Jersey (both in 2018) and New Mexico (2019). The remaining 17 states that levy a CNIT require separate

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[2] However, Iowa allows a deduction for one-half of federal income tax paid so that the effective tax rate is 12.00 * (1 − 0.21 * 0.5) = 10.74 percent.
[3] Wolters Kluwer, Commerce Clearing House State Tax, 2020.

reporting. Six states that require separate reporting have processes in place where (1) a firm can elect to use a different filing method (e.g., consolidated) or (2) the state tax authority can require a firm to file a combined return based on audit results.

Combined Reporting Base Expansion Analysis

In 2013, the IFO issued a report which used research from states that implemented combined reporting during the previous decade to examine the revenue impact from the enactment of that filing method.[4] The report found that combined reporting could increase revenues by roughly 9 to 13 percent when compared to control states that did not enact combined reporting. As an update to that analysis, the IFO reviewed CNIT collections and gross domestic product (GDP) data for three large states (Massachusetts, New York and Wisconsin) that implemented combined reporting since 2006 to determine the impact that filing method had on state tax collections.[5]

Table 1.3
Average Annual Growth Rate of Corporate Tax Revenues and State Economies

| | | | Enacted Combined Reporting | | |
	U.S.	Control States	MA	NY	WI
CNIT Revenue[1]	2.2%	1.7%	4.2%	3.7%	3.5%
Private GDP	3.2%	3.0%	3.8%	4.1%	3.1%
Difference	**-1.0%**	**-1.3%**	**0.5%**	**-0.4%**	**0.4%**

Note: See footnote 7 for a description of the growth rate computation.
1 Data through FY 2016-17 are from the U.S. Census Bureau's Annual Survey of State Government Tax Collections. Data for the U.S. is based on U.S. corporate domestic profits.
Sources: U.S. Census Bureau and U.S. Bureau of Economic Analysis.

The analysis uses a basic statistical comparison to estimate the net tax base expansion attributable to the enactment of combined reporting. The test compares the difference in average growth rates for private state GDP and CNIT revenues for three combined reporting states, 11 control states and the United States from 2006 to 2016 using a three-year average.[6, 7] There should be a positive relationship between state economic growth and CNIT revenues over the 10-year period: higher state economic growth should be positively correlated with corporate profits and CNIT revenues. For the 11 control states and the U.S., the analysis finds that average CNIT revenue growth underperformed private GDP growth by an average of

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[4] See "Corporate Tax Base Erosion: Analysis of Policy Options," Independent Fiscal Office (March 2013) http://www.ifo.state.pa.us/releases.cfm?id=103.

[5] For combined reporting and control states that also enacted a rate reduction during the period considered in the analysis, revenues were adjusted to account for the rate change.

[6] The 11 control states are economically diverse states and are not highly dependent on natural resources or other particular sectors (e.g., high tech). Control states include Pennsylvania, Alabama, Florida, Georgia, Iowa, Indiana, Maryland, Minnesota, Missouri, New Jersey (prior to implementation of combined reporting) and Virginia.

[7] The analysis used three-year averages at the start and end of the period due to the inherent volatility of CNIT revenues and, by extension, the tax base. For example, the starting point for CNIT revenues is the average of FY 2004-05 to FY 2006-07 and the end point is the average of FY 2014-15 to FY 2016-17. For GDP, the starting point is the average of CY 2005 to CY 2007 and the end point uses CY 2015 to CY 2017. The GDP computation excludes the government sector.

1.1 percentage points during the time period under consideration. (See **Table 1.3**.) By comparison, revenue growth for the three states that enacted combined reporting during this period outperformed private GDP growth by an average of 0.2 percentage points.[8]

This comparison suggests that the change in filing method may have expanded the tax base in combined reporting states and led to higher CNIT revenue growth rates than would otherwise be expected. Given average state GDP growth of 3.0 to 3.5 percent per annum, a reduction in the growth rate differential of 1.0 percentage point between state GDP and CNIT revenues is roughly equivalent to a 12 percent tax base expansion for combined reporting states.[9] In other words, if combined reporting increases the average CNIT growth rate by 1.0 percentage point per annum, it is similar to a 12 percent base expansion for most states.

Combined Reporting Revenue Impacts in Other States

Since 2006, 11 states have adopted combined reporting and **Table 1.4** displays the revenue estimates related to the adoption of the reporting method in each state. The estimates only reflect the impact from combined reporting, and exclude other tax policy changes adopted simultaneously as part of larger tax reform packages across states. Estimates in Table 1.4 represent the first full fiscal year of revenue impacts except for Rhode Island, which was measured on a tax year (TY) basis.

The table illustrates state revenue estimators' consensus regarding the fiscal impact of adopting combined reporting. Since 2006, most states that adopted combined reporting estimated a base expansion between 5 to 10 percent. In 2003, Wisconsin's Department of Revenue employed an estimation methodology that used tax return data from Minnesota to match taxpayers based on federal taxpayer identification numbers.[10] Using this method, Wisconsin estimated a base expansion of 4.2 percent for non-bank corporate taxpayers. In 2007, the Wisconsin Legislative Fiscal Bureau updated the combined reporting base expansion estimate to approximately 11 percent for all corporate taxpayers (including banks).

Maryland and Rhode Island analyzed *pro forma* reports to estimate the fiscal impact from the adoption of combined reporting. Both states enacted legislation that required corporate taxpayers that were part of a unitary group to file an additional return that showed the combined income of the unitary group and its state CNIT liability if combined reporting had been in effect. In Maryland, the results of the *pro forma* reports indicated that combined reporting could increase tax collections as much as 23 percent in TY 2006, falling to an increase of approximately 4 percent by TY 2010. In 2019, Maryland updated this estimate to reflect changes in the economy and CNIT revenues and estimated an 8 percent increase in fiscal year CNIT collections due to the adoption of combined reporting.[11] In 2014, Rhode Island used the results of its *pro*

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[8] The three states that enacted combined reporting effective for tax years are as follows: New York (2006), Massachusetts (2008) and Wisconsin (2008). Because the analysis tracks the impact many years following enactment of combined reporting, it reflects any long-term actions undertaken by firms in response to the new filing method. In the absence of any response, some firms would realize a doubling or tripling of their tax liability (or greater) and they would likely require several years to adjust their operations to the new state tax regime if they elected to do so.

[9] The statistical analysis suggests a growth rate differential closer to 1.3 percentage points. The estimate uses a figure that is slightly lower to account for the recent Pennsylvania Corporation Tax Bulletin 2019-04 which provides guidance on economic nexus and clarifies the CNIT filing requirement for firms with more than $500,000 in annual gross receipts sourced to Pennsylvania with or without a physical presence in the state. The revenue impact of this change has not been quantified, but it is assumed that it would reduce the size of a base expansion due to combined reporting.

[10] This is similar to the approach utilized by DOR to produce the estimate published in the Executive Budget.

[11] Maryland S.B. 377, 2019, Fiscal Note. http://mgaleg.maryland.gov/2019RS/fnotes/bil_0007/SB0377.pdf.

forma study to estimate a CNIT increase of approximately 20 percent due to the adoption of combined reporting.[12] A post-implementation study completed in 2018 estimated that combined reporting increased CNIT revenues by 28 percent, or $37.8 million after it became effective in TY 2015. However, Rhode Island's size makes it an outlier with state CNIT collections totaling $155.0 million in FY 2018-19.

Table 1.4
Combined Reporting Base Expansion Estimates in Other States

State	Tax Year CR Effective	Year Est. Prepared	Est. Impact ($ Millions)	Est. Base Expansion	Comments
Pennsylvania	**--**	**2020**	**$989**	**29%**	**Est. uses Minnesota tax return data.**
New York	2007	2008	315 - 420	6-8%	
Wisconsin	2008	2007	76	11%	2003 est. uses Minnesota tax return data. 2007 est. includes banks.
Massachusetts	2008	2007	188	9%	
West Virginia	2009	2007	24 - 28	8-10%	Based on experience of other states.
Rhode Island	2015	2018	38	28%	Post-implementation evaluation.
Connecticut	2016	2015	39	5%	
Kentucky	2018	2018	--	--	Unable to score revenue impact.
New Jersey	2018	2016	115 - 280	5-10%	Based on experience of other states.
New Mexico	2020	2019	--	--	Unable to score revenue impact.
Maryland	--	2019	90	8%	2010 *pro forma* reporting analysis updated for changes in economy.

Notes: Base expansion and dollar impact estimates relate to the first full fiscal year of tax impacts. The base expansion estimate relates to the impact of combined reporting only and does not incorporate impact of other simultaneous tax law changes. Vermont and Michigan adopted combined reporting after 2006 but were not included in this table because detailed revenue impact analyses could not be located. Texas also adopted mandatory combined reporting for its Margin Tax during this period, but this state is not included because it does not collect a traditional corporate income tax.

Sources: Pennsylvania base expansion estimate developed by the Pennsylvania Department of Revenue. Other state estimates from a survey of select states by the National Conference of State Legislatures, various state fiscal notes, analyses and reports.

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[12] "Tax Administrator's Study of Combined Reporting," Rhode Island Department of Revenue, Division of Taxation (March 2014).

More recently, West Virginia and New Jersey based their revenue estimates of combined reporting on the experience of states that adopted the filing method. Kentucky and New Mexico were unable to score a revenue impact related to combined reporting. Both states assumed an indeterminable positive impact, and New Mexico estimators asserted that "it is impossible to estimate the impact or determine with certainty whether the total effect would be positive or negative."[13]

Revenue Impact and Estimate Comparison

Table 1.5 provides fiscal year detail for the estimated revenue impact of combined reporting and rate reduction developed by the IFO and DOR. As noted, the estimates assume normal profits growth and disregard the anticipated profits reduction in CY 2020 due to COVID-19. For the IFO, the proposal reduces revenue by $9 million for FY 2020-21. By the end of the five-year window, the net impact of the proposal is a revenue reduction of $787 million due to the CNIT rate reduction. The DOR anticipates that the proposal will require updates to the business tax system and additional staff training at a one-time cost of $1 million (not included in table).

Table 1.5
Corporate Net Income Tax Detail - Comparison of Estimates

	20-21	21-22	22-23	23-24	24-25	Total
Independent Fiscal Office						
Combined Reporting	$66	$324	$432	$411	$417	$1,651
Rate Reduction	-75	-336	-651	-945	-1,205	-3,212
Total	**-9**	**-12**	**-219**	**-534**	**-787**	**-1,561**
Department of Revenue						
Combined Reporting	293	989	1,008	1,040	1,082	4,412
Rate Reduction	-53	-573	-834	-1,171	-1,518	-4,148
Total	**240**	**416**	**174**	**-131**	**-435**	**264**

Note: Figures in dollar millions. Both estimates assume combined reporting is enacted first, followed by a rate reduction.

Source: Department of Revenue Estimate as of February 2020.

Based on a request from the Senate Appropriations Committee, the analysis concludes with a comparison of the IFO revenue estimate and key assumptions to the same proposal included in the Executive Budget. The estimated base expansion due to combined reporting is the primary driver of the difference between the estimates. Because the DOR estimate of combined reporting is higher than IFO, the estimated revenue loss from rate reduction is commensurately higher too. For TY 2021, the IFO estimates a combined reporting base expansion of 12 percent while DOR estimates a base expansion of 29 percent. Four additional factors could impact the amount of revenue generated from the adoption of combined reporting: (1) the timing of payments, (2) proposed treatment of prior and future net operating losses (NOLs), (3) any pre-existing addback provisions and (4) taxpayer behavior related to changes in liability. The text that follows discusses the potential impact of these factors.

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[13] New Mexico, H.B. 6, 2019, Fiscal Impact Report. https://nmlegis.gov/Sessions/19%20Regular/firs/HB0006.PDF.

Timing of Payments

The IFO estimate assumes that only 15 percent of firms' net additional TY 2021 liability under combined reporting will be remitted with the March and June estimated payments in FY 2020-21. The switch to combined reporting creates uncertainty regarding final state tax liability, especially in the first tax year, as unitary group members and apportionable income are determined. The administration's proposal does not include language that requires taxpayers to remit estimated payments in equal installments and current law only requires that the safe harbor must be met prior to the end of the tax year.[14]

The DOR estimate assumes a different pattern of payments based on their analysis of 2018 tax returns after passage of the federal Tax Cuts and Jobs Act (TCJA). DOR observed that 62 percent of firms antici-pating a higher tax liability due to the TCJA increased their March and June estimated payments by 26 percent overall. According to a DOR memorandum transmitted to the House Appropriations Committee, the 26 percent increase was used to apportion the revenue impact for firms with higher tax liability under combined reporting to the March and June payments.[15] The memorandum does not discuss how firms with a tax liability reduction were treated, but it appears that more of the revenue loss hits in the latter part of the year (i.e., the September or December estimated payments or final payments).

Although the TCJA expanded both the federal and state tax base, it also enacted an immediate federal rate cut of 14 percentage points, a 40 percent reduction in corporate tax liability due to the rate change alone. Firms had a strong incentive to shift taxable income out of TY 2017 (taxed at 35 percent) into TY 2018 (taxed at 21 percent). Therefore, increased TY 2018 estimated payments could be attributable to the base expansion, but could also be attributable to profits shifting or simply normal profits growth during an eco-nomic expansion. The IFO estimate does not assume that firms will voluntarily remit significantly higher payments until they are required to do so.

Table 1.6 provides additional detail on the pattern of Pennsylvania estimated payments remitted by firms for TY 2017 (before the passage of the TCJA) and TY 2018 (after the passage of the TCJA). These payments largely correspond to the majority of corporations that have a tax year that begins in January and ends in December.

The table shows that while TY 2018 payments were 17.0 percent higher than TY 2017 payments, estimated payments grew only 9.0 percent year-over-year (YOY) in March and 5.5 percent YOY in June. Pennsylvania corporate taxpayers largely reflected the impact of the federal base expansion and any profits shifting in the September and December estimated payments, (20.0 and 25.7 percent YOY growth, respectively) and March through June final payments in 2019 (20.9 percent).

The IFO estimate assumes that firms would respond in a similar manner due to the adoption of combined reporting in Pennsylvania: the great majority would not be realized in the first fiscal year following enact-ment (i.e., the March and June estimated payments). Moreover, firms will likely know the impact of rate

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[14] The safe harbor is the total minimum amount of estimated payments that must be remitted during a tax year to avoid underpayment penalties. The current year safe harbor is the actual tax due from the second preceding tax year recomputed using current year rates and base. Prepayments for first-year corporations that have no safe harbor must be based on 90% of actual tax liability.

[15] See pages 1 and 17 from DOR written responses to FY 2020-21 Budget Hearing Questions, February 28, 2020, https://www.pahouse.com/files/BudgetHearingTestimony/2020-21/03-09/REV_BdgHearingResponse_022820.pdf.

reduction immediately, and reflect that in payments, compared to the greater uncertainty of combined reporting.

<table>
<thead>
<tr><th colspan="7">Table 1.6
Impact of Tax Cuts and Jobs Act on CNIT Payments</th></tr>
<tr><th>Payments</th><th>March</th><th>June</th><th>Sept</th><th>Dec</th><th>Finals</th><th>Total</th></tr>
</thead>
<tbody>
<tr><td>Tax Year 2017</td><td>$277</td><td>$414</td><td>$413</td><td>$376</td><td>$671</td><td>$2,151</td></tr>
<tr><td>Tax Year 2018</td><td>302</td><td>437</td><td>495</td><td>472</td><td>811</td><td>2,517</td></tr>
<tr><td>**Growth Rate**</td><td>**9.0%**</td><td>**5.5%**</td><td>**20.0%**</td><td>**25.7%**</td><td>**20.9%**</td><td>**17.0%**</td></tr>
</tbody>
</table>

Note: Figures in dollar millions. Payments largely correspond to firms with a tax year that ends in December. Payments for March, June, September and December are estimated payments only. Final payments include all final payments made March to June.

Source: Pennsylvania Department of Revenue, Corporate Net Income Tax Collections, TY 2017-2018.

Treatment of Net Operating Losses

The DOR estimates that the stock of prior-year NOL carryforwards is $2 billion for firms that file a Pennsylvania CNIT return. Therefore, restrictions on NOL deductions for unitary group members can have a significant impact on the revenue estimate for combined reporting.

The administration's proposal allows the same treatment of NOLs whether generated prior to or after the enactment of combined reporting for members of the new unitary group. At the unitary group level, total NOL deductions are capped at 40 percent of the unitary group's taxable income after apportionment. At the individual member level, there is no restriction in the application of NOLs, but NOL deductions are limited to the "member's share of combined unitary income after the apportionment."[16] This application of NOLs is generally more narrow than other states, and would likely have a positive impact on any revenue attributable to the enactment of combined reporting.

Addback Provision

Addback provisions are adopted predominately by separate reporting states to isolate and disallow deductions for intercompany transactions such as royalties, interest and management fees. Academic studies of addback provisions (both broad and narrow) generally find a weak to modest positive revenue impact in states that adopt these provisions.[17]

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[16] See Pennsylvania H.B. 1445, Sec. 4(h), 2020.
https://www.legis.state.pa.us/cfdocs/billInfo/billInfo.cfm?sYear=2019&sInd=0&body=H&type=B&bn=1445.
[17] Gupta et al., (2009) find a weak positive impact from addback provisions on CNIT revenues, while Fox and Luna (2010) find addback provisions have a statistically significant positive impact on CNIT revenues. In the IFO's (2013) analysis of combined reporting, addback provisions do not attain statistical significance, but the report notes these provisions could increase CNIT revenues by 2 to 5 percent.

For TY 2015, an addback provision for intangible expenses became effective for Pennsylvania CNIT filers. The DOR estimates that the addback provision generates roughly $40 to $50 million in additional CNIT revenue annually. The addback provision reverses certain tax shifting transactions that combined reporting is designed to prevent, thereby reducing the potential revenue impact from the enactment of mandatory combined reporting. Nine of the 11 states listed in Table 1.4 (page 9) enacted an addback provision prior to the enactment of combined reporting, the exceptions being New Mexico and West Virginia. Therefore, in this regard, these states are similar to Pennsylvania and the revenue estimates for combined reporting reflect the prior enactment of an addback provision.

Taxpayer Behavior

The IFO estimate includes behavioral adjustments that attempt to reflect taxpayer responses to increasing/decreasing Pennsylvania tax liability. This is accomplished in two ways. First, the combined reporting estimate considers the impact on states that enacted combined reporting over many years to gauge the long-term impact of that policy change on firm operations. Second, the negative rate reduction estimate is reduced from a pure "static" estimate to reflect that a lower tax rate should attract more economic activity and reduce any profit shifting not addressed through combined reporting. While the complete phase-in of the rate reduction will reduce net tax liability for some firms by 40 percent, combined reporting will increase tax liability for a relatively small group of firms by a factor of two, three, four or more. For combined reporting in particular, it is appropriate to assume that certain firms will attempt to adjust their long-term operations, to the extent they are able, in response to the policy change.

Table 1.7
Pennsylvania DOR Estimated Winners/Losers

Class	Count	Share of Firms	CNIT Liabilities			
			Current	CR and 5.99%	CR Only	% Change CR Only
Ties	74,427	62%	$0	$0	$0	0%
Winners	40,650	34%	2,136	958	1,597	-25%
Losers	5,863	5%	224	863	1,439	543%
Total	**120,940**	**100%**	**2,359**	**1,821**	**3,037**	**29%**

Note: Figures in dollar millions. Combined Reporting (CR) Only and % Change CR Only columns do not reflect the impact of a rate reduction. The columns Share of Firms, CR Only, and % Change CR Only are IFO calculations based on data provided by DOR in its budget hearing responses. The figures for CR Only, were generated by undoing the rate reduction impact, or multiplying the CR and 5.99% column by 9.99/5.99.

Source: Pennsylvania Department of Revenue, Budget Hearing Responses, February 28, 2020.

Table 1.7 provides a summary of estimates from the DOR analysis of 2015 tax return data used to inform the administration's net combined reporting and rate reduction estimate. The analysis examined the impact from the enactment of (1) combined reporting and (2) a rate reduction to 5.99 percent. These are the figures from the first four columns of the table. The final two columns reflect the impact of combined reporting only. The total liability of $3,037 million and the 29 percent base expansion from combined

reporting as well as the distribution of winners and losers are referenced in the DOR budget hearing response letter to the House Appropriations Committee.[18]

For combined reporting only, the analysis finds that:

- 62 percent of firms would be unaffected because they had no tax liability for the tax year;

- 34 percent of firms would realize, on average, a 25 percent reduction in liability;

- 5 percent of firms would realize, on average, a 543 percent increase in Pennsylvania tax liability. Approximately $1.2 billion of the estimated additional revenue from combined reporting is attributable to 5 percent of firms filing in Pennsylvania.

The DOR analysis illustrates that the potential revenue gains from combined reporting are very concentrated across a relatively small number of firms that will have significantly higher tax liability if they do not react to the new filing regime. The IFO estimate assumes that these firms would adjust their operations and will not voluntarily remit payments that, on average, are four or five times greater than their current tax bill. Although a rate reduction is also proposed, the reduction is phased-in over five years and it is common for states to temporarily or permanently delay scheduled rate reductions if revenues are needed. An example of this outcome is the long-delayed phase-out of the capital stock and franchise tax. Therefore, while combined reporting is effective immediately and will not be reversed, rate reduction is phased-in over five years and there exists a precedent that it would not occur as scheduled.

Table 1.8 concludes the analysis with detail from a recent DOR presentation at the Federation of Tax Administrators conference regarding changes in Pennsylvania tax liability across selected industries due to combined reporting. As noted, the DOR analysis finds that the CNIT base would expand by 29 percent under combined reporting. Tax liabilities increase for most industries other than agriculture and transportation/warehousing. The analysis finds that the mining, manufacturing and retail trade industries would realize the largest percentage increase in tax liability (49, 43 and 43 percent, respectively). These estimates reflect the impact of combined reporting only, and exclude any proposed rate reduction.

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[18] See pages 15 and 18 of DOR written responses to FY 2020-21 Budget Hearing Questions, February 28, 2020, https://www.pahouse.com/files/BudgetHearingTestimony/2020-21/03-09/REV_BdgHearingResponse_022820.pdf.

Table 1.8
PA DOR Estimated Combined Reporting Impact by Industry

Industry	Current	Combined	Difference	% Change
Agriculture	$6	$5	-$1	-19%
Mining	33	49	16	49
Utilities	116	144	28	24
Construction	60	67	7	12
Manufacturing	328	468	141	43
Wholesale Trade	418	570	152	36
Retail Trade	238	342	103	43
Transportation/Warehousing	79	71	-8	-10
Information	208	216	8	4
Finance/Insurance/Real Estate	216	238	22	10
Services	361	464	103	29
Other/Miscellaneous	297	403	106	36
Total	**2,359**	**3,037**	**677**	**29**

Note: Figures in dollar millions.

Source: Pennsylvania Department of Revenue, presentation to the Federation of Tax Administrators Revenue Estimating Conference, September 24, 2019.

Sales and Use Tax

Transfer to Commonwealth Financing Authority

The administration's proposal increases the SUT transfer to the Commonwealth Financing Authority for school construction (PlanCon) debt service payments. This provision is expected to reduce FY 2020-21 non-motor SUT revenues by $5 million. See **Table 1.9** for this transfer and the transfers that follow.

Cigarette Tax

Transfer to Tobacco Settlement Fund

The administration's proposal creates a cigarette tax transfer to the Tobacco Settlement Fund for debt service payments. This provision is expected to reduce FY 2020-21 cigarette tax revenues by $115 million.

Personal Income Tax

Transfer to Environmental Stewardship Fund

The administration's proposal creates a PIT transfer to the Environmental Stewardship Fund for Growing Greener debt service payments. This provision is expected to reduce FY 2020-21 PIT withholding revenues by $14 million.

Transfer to Workers' Compensation Security Fund

The administration's proposal creates a one-time PIT transfer to the Workers' Compensation Security Fund in repayment of a FY 2016-17 transfer to the General Fund. This transfer will occur in FY 2024-25 and will not impact FY 2020-21 revenues.

Gaming Taxes

Transfer from the Video Gaming Fund

Video gaming terminal tax revenues are transferred annually to the General Fund from the Video Gaming Fund. The administration's proposal reduces this transfer by an amount equal to the appropriation for administration and reimbursement of startup costs (net of regulatory assessments). This provision is expected to reduce FY 2020-21 gaming revenues by $2 million.

Table 1.9 General Fund Transfer Detail					
	20-21	**21-22**	**22-23**	**23-24**	**24-25**
Commonwealth Financing Authority	-$5	-$12	-$12	-$12	-$12
Tobacco Settlement Fund	-115	-115	-115	-115	-115
Environmental Stewardship Fund	-14	-14	-13	-11	-11
Workers' Compensation Security Fund	0	0	0	0	-165
Video Gaming Fund	-2	n.a.	n.a.	n.a.	n.a.
Total	**-137**	**-141**	**-140**	**-138**	**-304**

Note: Figures in dollar millions. Estimates provided by the Office of Budget. The need for reduced Video Gaming Fund transfers in future years is undetermined at this time.

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Raising the Minimum Wage

The administration proposes to raise the state minimum wage from the federal minimum of $7.25 to $12.00 per hour on July 1, 2020 and increase that amount by $0.50 every year until the minimum wage is $15.00 beginning on July 1, 2026. On July 1, 2027 and every year thereafter, the minimum wage would increase by an annual cost-of-living adjustment based on the Consumer Price Index for All Urban Consumers (CPI-U) for the Pennsylvania, New Jersey, Delaware and Maryland region. For tipped workers, the proposal does not change the base hourly wage rate of $2.83, but employers must ensure that tipped workers effectively receive the new, higher minimum wage once tips are included (referred to as the tip credit).

Since 2015, the IFO has published five analyses of various minimum wage proposals, with the most recent analysis released March 2019. The following bullets list major changes from last year's analysis that will impact the updated estimates:

- The analysis uses data from the U.S. Bureau of Labor Statistics' (BLS) Occupational Employment Statistics (OES) survey of employers for 2019.[19] Last year, the analysis used survey data from the U.S. Census Bureau's Current Population Survey. Because the OES is a large, rolling survey of 1.2 million establishments, as opposed to smaller survey of individuals, the IFO believes the new data source provides a more accurate snapshot of workers affected by a higher minimum wage. The new data source also provides more detailed occupation data, median and mean wage levels and wage distributions for each occupation at the 10th, 25th, 75th and 90th percentiles. Based on these data points, the analysis constructs a Pennsylvania-specific wage distribution for each occupation.

- The data set used for last year's analysis did not include secondary jobs.[20] The OES dataset includes both primary and secondary jobs, so an imputation for secondary jobs is not necessary.

- Consistent with last year's report, tipped workers are not included in the general analysis. Because many tipped jobs are secondary (e.g., food service workers), a large share of those jobs were imputed last year. The OES dataset should provide a more accurate snapshot of tipped workers in Pennsylvania. The IFO did not include tipped workers in the general analysis because the impact of a higher minimum wage (including tips) on those workers is much less clear.

- Despite recent disruptions due to COVID-19 and consistent with the prior analysis, this analysis assumes that the labor market in Pennsylvania is characterized by low unemployment in the absence of a higher minimum wage. Therefore, the analysis reflects longer-term outcomes and does not reflect what might occur if a higher minimum wage were enacted under current conditions.

The analysis begins with a comparison of state minimum wage rates and a review of recent minimum wage studies. The analysis then examines the characteristics of lower-wage workers based on hourly wage rates, part- or full-time status, gender, age and marital/child status. Following these descriptive statistics, the

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[19] The OES program conducts a semiannual survey designed to produce estimates of nonfarm employment and wages for about 800 specific occupations. Data from self-employed persons are not collected and are not included in the estimates. The OES program produces these occupational estimates for the nation as a whole, by state, by metropolitan or nonmetropolitan area, and by industry or ownership.

[20] A secondary job reflects multiple jobs held by a single person. The secondary job is part-time and/or pays a lower wage than the primary job.

analysis computes the impact of the higher proposed minimum wage on employment, incomes and General Fund revenues and expenditures. The analysis concludes with sections that examine tipped workers and the proposed phased-in increase from $12.00 to $15.00 per hour.

The focus of this analysis is on the immediate movement to a $12.00 minimum wage, and it provides only a brief discussion for the phased-in increase to $15.00 over the six years that follow. This approach is used to keep the analysis tractable and focused on near-term outcomes. Moreover, no state has increased its current minimum wage to $15.00 per hour. Hence, no state data exist that could be used to inform possible outcomes.

Minimum Wage Across States

As of January 1, 2020, Pennsylvania and 20 other states do not require employers to pay a wage that exceeds the federal minimum of $7.25 per hour. (See **Table 2.1** on next page.) By contrast, 17 states and the District of Columbia require employers to pay an hourly wage of $10.00 or more. By January 1, 2024, 14 states and the District of Columbia will require employers to pay an hourly wage of $12.00 or more under current law.

Currently, all border states have a minimum wage that exceeds Pennsylvania by at least $1.45 per hour, and four states (New York, Maryland, New Jersey and Delaware) have a minimum wage that is at least $2.00 higher. If Pennsylvania increases the minimum wage to $12.00 in 2020, it would be exceeded only by three states (Washington, California and Massachusetts) and the District of Columbia, and tied with three other states (Arizona, Colorado and Maine) for the fifth highest minimum wage. If Pennsylvania continues to increase the minimum wage to $15.00 over the subsequent six years, on January 1, 2027, it would join six other states (Washington, California, Massachusetts, Connecticut, New Jersey and Illinois) and the District of Columbia with a minimum wage that meets or exceeds $15.00.

Table 2.1
Minimum Wage Rates by State (as of January 1st)

State	2020 Rank	2020	2021	2022	2023	2024
Washington D.C.[1]	1	$14.00	$15.00	$15.30	$15.60	$15.90
Washington[1]	2	13.50	13.77	14.05	14.33	14.62
California[1]	3	13.00	14.00	15.00	15.30	15.60
Massachusetts	4	12.75	13.50	14.25	15.00	15.00
Arizona[1]	5	12.00	12.25	12.50	12.75	13.00
Colorado[1]	6	12.00	12.24	12.48	12.73	12.98
Maine[1]	7	12.00	12.25	12.50	12.75	13.00
New York[1]	8	11.80	12.50	12.75	13.01	13.27
Oregon[1]	9	11.25	12.00	12.75	13.50	13.75
Connecticut[1]	10	11.00	12.00	13.00	14.00	15.30
Maryland	11	11.00	11.75	12.50	13.25	14.00
New Jersey	12	11.00	12.00	13.00	14.00	15.00
Vermont[1]	13	10.96	11.18	11.40	11.63	11.86
Rhode Island	14	10.50	10.50	10.50	10.50	10.50
Alaska[1]	15	10.19	10.39	10.60	10.81	11.03
Hawaii	16	10.10	10.10	10.10	10.10	10.10
Arkansas	17	10.00	11.00	11.00	11.00	11.00
Minnesota[1]	18	10.00	10.20	10.40	10.61	10.82
Michigan	19	9.65	9.87	10.10	10.33	10.56
Missouri[1]	20	9.45	10.30	11.15	12.00	12.25
South Dakota[1]	21	9.30	9.50	9.70	9.90	10.10
Delaware	22	9.25	9.25	9.25	9.25	9.25
Illinois	23	9.25	11.00	12.00	13.00	14.00
Nebraska	24	9.00	9.00	9.00	9.00	9.00
New Mexico	25	9.00	10.50	11.50	12.00	12.00
West Virginia	26	8.75	8.75	8.75	8.75	8.75
Ohio[1]	27	8.70	8.85	9.05	9.25	9.45
Montana[1]	28	8.65	8.80	9.00	9.20	9.40
Florida[1]	29	8.56	8.73	8.90	9.08	9.26
Nevada	30	8.25	9.00	9.75	10.50	11.25
Pennsylvania	31	7.25	7.25	7.25	7.25	7.25
Other	31	7.25	7.25	7.25	7.25	7.25

Note: Over 50 localities have adopted a minimum wage above their state's minimum wage. Shaded states border Pennsylvania.

1 Inflation adjustments in this table use a 2.0% growth rate to estimate inflation adjustments for future years.

Source: The Economic Policy Institute. Minimum Wage Tracker (updated January 3, 2020).

Recent Minimum Wage Studies

The text that follows provides the main findings and results from prominent minimum wage studies that have been published recently. The studies appear in chronological order. In order to interpret the results, it is necessary to define the term "employment elasticity." The employment elasticity is the percentage change in employment divided by the percentage change in the statutory minimum wage. For example, an elasticity of -0.1 implies that a 10.0 percent increase in the minimum wage would reduce employment by 1.0 percent (-1.0 / 10.0). It is noted that for some studies, the employment elasticity applies to all workers, while for others, it only applies to affected workers (i.e., workers currently earning less than the new, higher minimum wage) and sometimes only affected workers in a particular industry or sector (e.g., fast food).

Neumark (2015)[21]

Based on a review of existing studies, this research note from the Federal Reserve Board of San Francisco finds that "the overall body of recent evidence suggests that the most credible conclusion is a higher minimum wage results in some job loss for the least-skilled workers — with possibly larger adverse effects than earlier research suggested." Neumark notes that "(a)mong the studies that find job loss effects, estimated employment elasticities of -0.1 to -0.2 are at the lower range but are more defensible than the estimates of no employment effects (p. 4)."

Institute for Research on Labor and Employment (2015)[22]

The authors examine recent studies and find general agreement on an employment elasticity for restaurant workers that ranges from -0.06 to 0.04, with consensus towards a small, negative value. However, they find substantial disagreement for teen employment. The authors make allowance for certain state-specific trends and find a negative bias in traditional minimum wage studies. The authors find that correction of that bias implies teen employment elasticities that are not significantly different than zero (i.e., no impact from a higher minimum wage).

Dube et al. (2016)[23]

The authors use U.S. data for teens and restaurant workers from the Quarterly Workforce Indicators database and focus on the period from 2000 to 2011. The paper exploits differences between border counties in states that did and did not raise their minimum wage. The authors "find striking evidence that separations, hires, and turnover rates for teens and restaurant workers fall substantially following a minimum wage increase — with most of the reductions coming within the first three quarters of the higher minimum (p. 2)." For both teens and restaurant workers, the authors could not identify a statistically significant negative effect on employment from a higher minimum wage.

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[21] "The Effects of Minimum Wage on Employment," FRBSF Economic Letter 2015-37 (December 2015).
[22] Allegretto et al. "Credible Research Designs for Minimum Wage Studies: A Response to Neumark, Salas and Wascher," University of California Berkeley, IRLE Working Paper No. 116-15 (September 2015).
[23] Dube et al. "Minimum Wage Shocks, Employment Flows and Labor Market Frictions," Journal of Labor Economics, Vol. 34(3) (2016).

University of Washington I (2016)[24]

The first of three studies that examine the impact of raising the minimum wage in Seattle. The report analyzes the increase from $9.47 to $11.00 per hour for most employers.[25] The study finds that low-wage workers' median wage increased by $1.18, and that $0.73 was due to the higher minimum wage and $0.45 was due to favorable economic conditions. The 16.2 percent increase in the statutory minimum wage (or a 10.3 percent increase relative to the median affected wage of $9.97) resulted in a 1.2 percent reduction in employment, and a modest reduction in hours worked per quarter. (Note: these results apply to all affected workers, not just teens or restaurant workers.) The strength of this study is that it utilizes detailed administrative data that tracked actual wages, hours worked and outcomes for individual workers affected across all age groups and industries. However, the analysis only includes single location establishments and excludes multi-location establishments because it was not possible to determine the exact location of workers for multi-location firms (i.e., it was not clear if the workers were employed within the city limits). Those firms employed roughly 40 percent of the workforce in Seattle.

Meer and West (2016)[26]

The authors find that the main impact of higher minimum wages on employment operates through the growth of employment, as opposed to the immediate employment level. If that hypothesis is true, then the authors find that many traditional minimum wage studies that use a difference-in-difference methodology will not accurately capture that impact and will understate the negative impact of higher minimum wages in the years following enactment. The authors use three administrative data sets and find an employment elasticity of -1.2 for all directly affected workers. The employment impacts are concentrated in lower-wage industries, younger workers and those with lower levels of education.

Center on Wage and Employment Dynamics (2017)[27]

This study also examines the increase in the Seattle minimum wage to $11.00 per hour but uses the Quarterly Census of Employment and Wages (QCEW) dataset and only examines the food service/restaurant industry because it employs a high proportion of low-wage workers and the aggregated QCEW data cannot separately identify workers directly affected by a higher minimum wage. For all types of restaurants, the analysis finds employment elasticities that are not significantly different than zero (i.e., the higher minimum wage had no discernable impact on employment). The authors note several reasons for that outcome: (1) the labor market is not perfectly competitive (i.e., firms have wage-setting power), (2) higher wages increase productivity, (3) it is difficult to replace labor in low-paid service occupations, (4) affected workers comprised a relatively small portion of total employer costs and (5) lower-wage workers spend nearly all extra income, thereby increasing overall demand.

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[24] The Seattle Minimum Wage Study Team. "Report on the Impact of Seattle's Minimum Wage Ordinance and Wages, Workers, Jobs and Establishments Through 2015," University of Washington (July 2016).

[25] For employers with less than 500 employees who offer health insurance or the employees earn tips, the minimum wage increased to $10.00 per hour.

[26] Meer, Jonathan and Jeremy West. "Effects of the Minimum Wage on Employment Dynamics," Journal of Human Resources, Volume 51 (2) (November 2016).

[27] Reich et al. "Seattle's Minimum Wage Experience 2015-16," Institute for Research on Labor and Employment, Center on Wage and Employment Dynamics, University of California, Berkeley (June 2017).

University of Washington II (2017/2018)[28]

The second (revised) study on the Seattle minimum wage examines raising the level from $11.00 to $13.00 per hour for certain employers. The authors find much larger negative employment effects from the second minimum wage hike and note that the effects appear to be non-linear: negative employment impacts become progressively stronger as the minimum wage increases. Similar to the first study, administrative data allow the authors to identify actual wages earned, hours worked and industry of employment, but the study excludes roughly 37 percent of workers employed by multi-location firms. The authors find that traditional employment elasticities are substantially understated, largely because previous studies based the percentage increase in the wage rate on the statutory floor (e.g., $7.25 for Pennsylvania) due to lack of specific data, versus what employees actually earned. The authors believe that the relatively high level of the minimum wage in Seattle, the smaller locality (i.e., a city and not a state) and inclusion of non-restaurant employees in the dataset also contributed to the much higher negative employment response. The authors conclude that the movement to a $13.00 minimum wage yielded lower incomes of $74 per month for the average low-wage worker (reflects lower employment and reduced hours). It should be noted that some researchers strongly disagree with these findings and believe methodological issues drive much of the result.[29]

Cengiz et al. (2019)[30]

The authors employ a new methodology to examine 138 state-level minimum wage changes from 1979 to 2016 where the mean real increase in the minimum wage was 10.1 percent. The analysis uses the Merged Outgoing Rotation Group dataset from the U.S. Census Bureau's Current Population Survey. The authors discuss three main results. First, higher minimum wages do not appear to impact employment, assuming that the ratio of the new minimum wage to the state median wage does not exceed 55 percent. The study found that job gains at or slightly above the new minimum wage closely matched those lost that were below the new minimum wage. Second, impacts varied across sectors: employment in the manufacturing and retail/wholesale trade sectors could be adversely impacted, while workers in all other sectors are largely unaffected. Third, positive wage "spillovers" extend up to $3 above the new minimum wage and can account for up to 40 percent of the overall income gains from a higher minimum wage.

Congressional Budget Office (2019)[31]

Based on a review of a large body of research, a recent CBO study used the following median estimates for elasticities for workers directly affected by a minimum wage increase to $12.00 per hour: (1) -0.234 (adults), (2) -0.721 (teenagers) and (3) -0.25 (all workers). It is noted that these elasticities apply only to workers that earn less than the new minimum wage. If phased in by 2025 in six annual increments starting in January 2020 (roughly 80 cents per increment), the analysis found that a $12.00 minimum wage would (1) reduce employment by 0.2 percent (0.3 million jobs), (2) boost earnings for 5.0 million directly affected

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[28] Jardim et al. "Minimum Wage Increases, Wages and Low-Wage Employment: Evidence from Seattle," NBER Working Paper 23532 (May 2018).

[29] For example, see Zipperer, Ben and J. Schmidt. "The 'high road' Seattle labor market and the effects of the minimum wage increase," Economic Policy Institute (June 2017).

[30] Cengiz et al. "The Effect of Minimum Wages on Low-Wage Jobs: Evidence from the United States Using a Bunching Estimator," NBER Working Paper 25434 (January 2019).

[31] "The Effects on Employment and Family Income of Increasing the Federal Minimum Wage," Congressional Budget Office (July 2019). See Tables 1, A-1 and A-2.

workers, (3) provide a modest wage boost for 6.4 million workers earning just above $12.00 per hour and (4) reduce the number of people in poverty by 0.4 million. It is noted that many states will already have minimum wages that are $12.00 or higher by 2025, which greatly mutes the national employment impact of a higher federal minimum wage.

Border County Comparison

Many minimum wage studies compare employment trends for border counties in states that do and do not raise the minimum wage. Because economic and demographic variables are generally similar in the border counties, the higher minimum wage offers researchers a "natural experiment" that allows them to isolate the impact of the higher minimum wage. In nearly all cases, these comparisons focus on the food service sector, because that sector has a relatively large share of workers that would be directly affected by a higher minimum wage.

In September 2019, the Federal Reserve Bank of New York published an article that compared employment trends in the border counties of Pennsylvania and New York.[32] The gradual phase-in of a considerably higher minimum wage in New York facilitates the natural experiment noted above. The article compared employment and wage trends for the leisure-hospitality and retail trade sectors. For this analysis, the IFO updated and reproduced the methodology used by the article with the following modifications:

- Instead of using the leisure-hospitality sector, this analysis used the food service subsector only. The larger leisure-hospitality sector includes hotels, motels, theatres and casinos.

- This analysis excludes Orange County (New York) because it is a clear outlier in terms of population growth and shares a very short border with Pike County.

- This analysis did not include the retail trade sector due to the significant contraction of that sector from internet sales.

- Both analyses use data through 2018 because county-level data are not yet available for 2019.

Starting in 2014, New York State (NYS, excludes New York City) and New York City (NYC) started to phase in a higher minimum wage for all workers. For recent years, the schedule for fast food workers (these workers have a separate schedule) was as follows (base wage for non-tipped, non-fast-food workers is shown in parenthesis):

- January 2015: NYS $8.75 ($8.75) | NYC $8.75 ($8.75)
- January 2016: NYS $9.00 ($9.00) | NYC $10.50 ($9.00)
- January 2017: NYS $10.75 ($9.70) | NYC $12.00 ($11.00)
- January 2018: NYS $11.75 ($10.40) | NYC $13.50 ($13.00)
- January 2019: NYS $12.75 ($11.10) | NYC $15.00 ($15.00)

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[32] Bram et al. "Minimum Wage Impacts Along the New York-Pennsylvania Border," Liberty Street Economics Blog (September 25, 2019).

Figure 2.1 displays the average annual employment growth of the food services and drinking places sub-sector (NAICS 722) for 2013 through 2018 in the border counties of Pennsylvania and New York.[33,34] Over-all, employment in New York counties grew at an average rate of 1.2 percent per annum, while Pennsyl-vania counties grew at a slightly slower rate (1.0 percent). Across both states, Tioga (NY, 3.5 percent), Cattaraugus (2.6 percent) and Pike (4.0 percent) counties recorded the strongest employment growth.
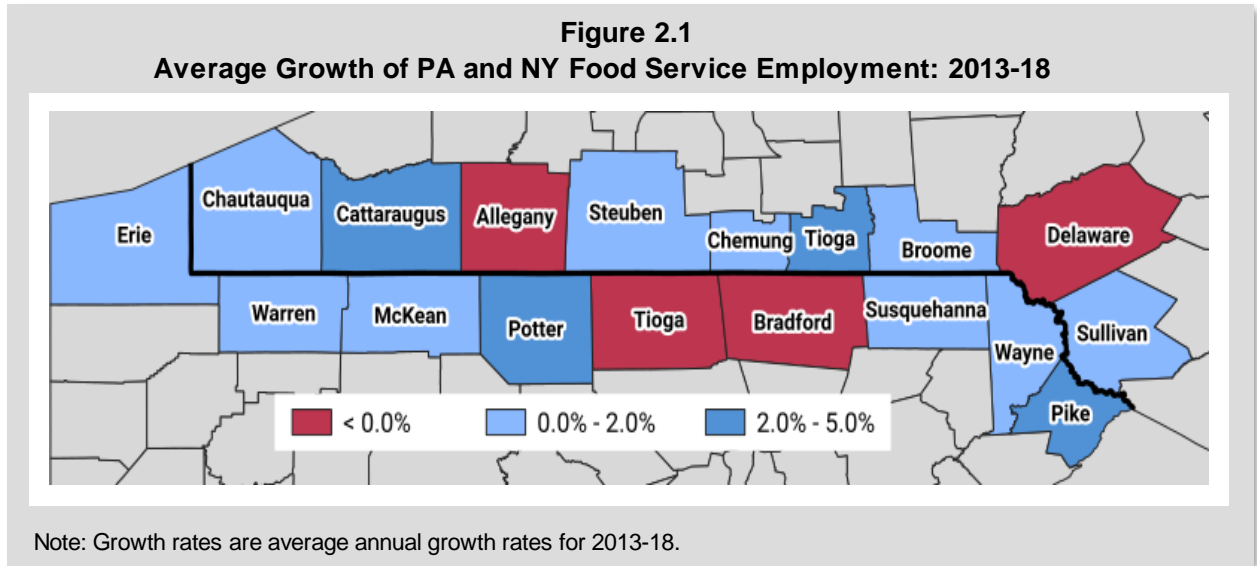

Figure 2.1
Average Growth of PA and NY Food Service Employment: 2013-18

Note: Growth rates are average annual growth rates for 2013-18.

Table 2.2 displays the average annual growth rates for population, personal income, food service employ-ment and average wages for the relevant counties in both states. These data illustrate the similar general economic and demographic conditions in the two sets of border counties, which allows the analysis to isolate the impact of a higher minimum wage. For both sets of counties, population declined at a rate of 0.6 percent per annum, while (nominal) personal income increased by 2.4 percent. Presumably largely due to the higher minimum wage, average weekly wages for employees in New York grew nearly twice as fast as Pennsylvania, while employment growth was comparable. It should be noted that the higher minimum wage in New York was phased-in over multiple years, while the current budget proposal enacts an imme-diate increase to $12.00 per hour on July 1, 2020.

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[33] Data for 2019 are not yet available and will be released in May 2020.

[34] In March 2013, the governor signed a state budget which raised the minimum wage over three years for all non-tipped workers from $7.25 to $9.00 by 2016. In September 2015, a phased-in higher wage to $15.00 by 2021 for fast food workers was enacted. In April 2016, the $15.00 phased-in wage rate was extended to all workers.

Table 2.2
Average Annual Growth Rates: 2013-18

	County Population	Personal Income	Food Sector Employment	Avg. Weekly Wage
New York	-0.6%	2.4%	1.2%	4.1%
Pennsylvania	-0.6%	2.4%	1.0%	2.3%

Note: A higher minimum wage in New York was phased in over multiple years, while the current budget proposal enacts an immediate increase to $12.00 per hour on July 1, 2020.

Source: U.S. Bureau of Economic Analysis and U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

Workers Affected by a $12 per Hour Minimum Wage

This analysis uses data from the 2019 Occupational Employment Statistics (OES) dataset from the U.S. Bureau of Labor Statistics. The OES is a semi-annual survey sent to a sample of non-farm establishments across all industries and produces estimates for employment and wages for specified occupations by state. Additional detail on hours worked and demographic characteristics are from the Merged Outgoing Rotation Group dataset from the 2018 Current Population Survey (CPS).[35]

Table 2.3
Workers Affected by a $12 Minimum Wage for 2019

	Employment Status (000s)		Employee Gender (000s)		
	Part-Time	Full-Time	Male	Female	Total
$7.25 to $7.99	56	22	35	42	78
$8.00 to $9.99	241	188	196	232	428
$10.00 to $10.99	119	141	113	147	260
$11.00 to $11.99	109	169	109	168	278
$12.00 to $14.99	150	615	350	414	764
$15.00 or more	324	3,592	2,169	1,747	3,916
Total	**998**	**4,727**	**2,973**	**2,752**	**5,725**
Directly Affected	**525**	**520**	**453**	**589**	**1,044**
Indirectly Affected	**150**	**615**	**350**	**414**	**764**

Note: Data do not include tipped workers. Indirectly affected workers earn $12.00 to $14.99 per hour.

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics 2019. Detail for part-time/full-time and gender calculated by IFO using data from U.S. Census Bureau, Current Population Survey and Merged Outgoing Rotation Group dataset (2018) compiled by the National Bureau of Economic Research.

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[35] The CPS is a survey sponsored jointly by the U.S. Census Bureau and the U.S. Bureau of Labor Statistics. It provides data on the labor force, employment levels, unemployment rates and various demographic characteristics.

For 2019, the OES dataset for Pennsylvania represents 5.90 million jobs, including secondary jobs.[36,37] The majority of workers affected by an increase in the minimum wage are hourly-paid workers. The dataset also includes workers employed in occupations that typically receive tips. The impact of the higher minimum wage on those workers is discussed in a later subsection.

Table 2.3 provides a breakdown based on wage level for all non-tipped jobs.[38,39] For 2019, the analysis includes 5.73 million non-tipped jobs. For employment status, 998,000 were part-time (less than 35 hours per week) and 4.73 million were full-time jobs. For "directly affected" workers who earn less than $12.00 per hour, half of the primary jobs were part-time, and 56 percent were female workers.

For both categories, the analysis finds that 1.04 million non-tipped workers would be impacted by a $12.00 minimum wage (i.e., directly affected) and another 764,000 workers earning between $12.00 to $14.99 would likely also be affected due to wage compression or spillovers (indirectly affected). Researchers find that workers earning just above the minimum wage will likely also receive a higher hourly wage rate as employers attempt to maintain some wage differentials.

	Table 2.4 Workers Affected by a $12 Minimum Wage for 2019							
	Age (000s)				Type of Household (000s)			
	16-19	20-24	25-39	40+	Single no kids	Single kids	Married no kids	Married kids
$7.25 to $7.99	28	19	12	18	59	2	9	8
$8.00 to $9.99	105	96	95	132	284	34	51	60
$10.00 to $10.99	27	60	74	100	153	25	44	39
$11.00 to $11.99	15	35	92	136	130	29	66	52
$12.00 to $14.99	19	111	267	367	349	80	181	154
$15.00 or more	5	202	1,290	2,419	1,340	245	1,233	1,098
Total	**200**	**522**	**1,830**	**3,172**	**2,316**	**414**	**1,583**	**1,411**
Directly Affected	**175**	**210**	**273**	**386**	**626**	**90**	**170**	**159**
Indirectly Affected	**19**	**111**	**267**	**367**	**349**	**80**	**181**	**154**

Note: Data do not include tipped workers. Indirectly affected workers earn $12.00 to $14.99 per hour.

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics 2019. Detail for age and type of household calculated by IFO using data from U.S. Census Bureau, Current Population Survey and Merged Outgoing Rotation Group dataset (2018) compiled by the National Bureau of Economic Research.

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[36] Excludes independent contractors and self-employed individuals.

[37] The OES data reflect the number of jobs in Pennsylvania as opposed to the number of residents employed. Secondary jobs are typically part-time jobs held by persons who also have a primary job.

[38] Wages for certain occupations are suppressed in the OES dataset. For primary and secondary school employees, wage data from the Pennsylvania Department of Education was used to calculate the wage distribution. For all other occupations with suppressed wages, this analysis assumed that the employees earned above $15.00 per hour.

[39] For this analysis, tipped occupations include: bartenders, wait staff, food servers, hosts/hostesses, barbers, hair-dressers, miscellaneous personal appearance workers, miscellaneous personal care and service workers, baggage handlers and gaming service workers.

Table 2.4 provides similar breakdowns based on age and marital/child status. The data show that 200,000 (3 percent) jobs were held by workers between the ages of 16 and 19, and 88 percent earned a wage under $12.00 per hour. College age workers (20 to 24) held 522,000 jobs, and 40 percent earned less than $12.00 per hour. For workers age 40 and older, most (76 percent) earned $15.00 or more per hour.

The columns to the right provide detail on marital and child status. For jobs, roughly 60 percent of workers directly affected by a $12.00 minimum wage are single with no children. An additional 16 percent are married with no children.

Employment Impact from a $12 per Hour Minimum Wage

Table 2.5 displays the projected employment impact due to the enactment of a $12.00 minimum wage. The top third of the table shows the average wage by wage group and part/full-time status, and the percentage change if the minimum wage increases to $12.00 per hour. For the lowest paid workers, the proposal increases the hourly wage by nearly 60 percent. For the highest paid workers affected, the increase is nearly seven percent. While not directly affected by the proposal, the analysis assumes that workers earning $12.00 to $14.99 per hour would also realize a modest wage increase of five percent.

The middle portion of the table displays the number of workers and the employment response parameters, based on a review of minimum wage studies. For very low-wage workers who are mostly high school and college age, the analysis assumes an elasticity of -0.175, which implies a 1.75 percent employment reduction for a 10.0 percent increase in the (average) wage paid for that group. Research finds that employment of this age cohort is more sensitive to wage changes because they are part-time, less experienced and have a high degree of turnover. Moreover, the percentage increase in the wage is very large for this group, and employers would be especially sensitive to their employment compared to other groups under a $12.00 minimum.

The analysis assumes that the elasticities (1) are slightly higher for part-time workers and (2) would decline for each group as the percentage increase in the wage paid declines. The projected employment impact is then equal to: number employed * percent change in wage * responsiveness parameter or elasticity. The analysis finds a reduction in part-time jobs of 18,000 (3.4 percent of directly affected part-time workers) and 9,000 for full-time jobs (1.7 percent), and an overall reduction of 27,000 (2.6 percent). The proposal disproportionately affects part-time jobs because they comprise a greater share of low-wage workers. The analysis also assumes a reduction in total hours worked. Recent studies find that some of the negative employment impact would manifest itself in reduced work hours, as opposed to fewer jobs. This effect is included in the computation of the income gains in the subsection that follows. The net impact on labor is the same as reduced employment levels, but the manifestation is different.

It is noted that the projected employment contraction would not all occur at the same time or in the same manner. While some part-time workers might be released, other firms may simply defer filling vacant positions over an extended period of time. Research finds that new entrants to the labor market will be affected more than current employees.

Table 2.5
Employment Impact: $12 Minimum Wage in 2019

	Average Wage		Percent Change from Increased Wage	
	Part-Time	Full-Time	Part-Time	Full-Time
$7.25 to $7.99	$7.54	$7.68	59.2%	56.2%
$8.00 to $9.99	$8.90	$9.26	34.9%	29.7%
$10.00 to $10.99	$10.37	$10.44	15.7%	14.9%
$11.00 to $11.99	$11.22	$11.27	6.9%	6.4%
$12.00 to $14.99	$13.29	$13.66	5.0%	5.0%
	Number of Workers (000s)		**Response Parameter**	
	Part-Time	Full-Time	Part-Time	Full-Time
$7.25 to $7.99	56	22	-0.175	-0.150
$8.00 to $9.99	241	188	-0.125	-0.100
$10.00 to $10.99	119	141	-0.075	-0.050
$11.00 to $11.99	109	169	-0.025	-0.025
$12.00 to $14.99	150	615	0.000	0.000
Total	**675**	**1,135**		
	Projected Reduction (000s)		**Retain Employment (000s)**	
	Part-Time	Full-Time	Part-Time	Full-Time
$7.25 to $7.99	-6	-2	50	20
$8.00 to $9.99	-11	-6	230	182
$10.00 to $10.99	-1	-1	118	140
$11.00 to $11.99	0	0	109	169
$12.00 to $14.99	0	0	150	615
Total	**-18**	**-9**	**657**	**1,126**

Note: Data do not include tipped workers. Indirectly affected workers earn $12.00 to $14.99 per hour.

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics 2019. Detail for part-time/full-time calculated by IFO using data from U.S. Census Bureau, Current Population Survey and Merged Outgoing Rotation Group dataset (2018) compiled by the National Bureau of Economic Research.

Income Effects for Affected Workers

Table 2.6 provides the analysis for the projected impact on income levels from the higher minimum wage for affected workers. The top portion of the table displays the current wage distribution, number of workers and total income of those workers. For the income computations, the analysis assumes that part-time employees work 20 hours per week for 50 weeks per year while full-time employees work 40 hours per week for 50 weeks per year. Total wage income for all workers shown is $34.4 billion.

The middle portion of the table adjusts the minimum wage to $12.00 per hour and includes the projected employment contraction from Table 2.5. Based on recent studies, the computations also assume that work-ers who previously earned less than $11.00 per hour would work roughly six to seven hours less per quarter (0.5 hours per week). As noted, the analysis also assumes a five percent wage increase for workers earning between $12.00 to $14.99 per hour. Total wage income increases to $37.7 billion.

The bottom portion of the table displays the differential. Total wage income increases by $3.3 billion. If federal payroll tax is deducted (7.65 percent, employee share only), the increase declines to $3.1 billion. The bottom of the table shows an average annual net income gain of $1,764 for part-time workers ($34 per week) and $2,843 for full-time workers ($55 per week). (Note: these figures are for directly affected workers only. They do not include the modest gains for indirectly affected workers.)

It is noted that the presentation in Table 2.6 is an oversimplification because it assumes that all workers under $12.00 per hour would receive exactly $12.00 per hour under the proposal. In practice, while there would be some "wage compression" due to the higher minimum wage, employers would likely attempt to maintain some of the wage differentials that were effective prior to the higher minimum wage. Therefore, the estimates in Table 2.6 could be viewed as a lower bound. However, to the extent those wages are raised above $12.00 per hour, it would also imply a larger negative employment response.

Table 2.6
Income Impact of a $12 Minimum Wage in 2019

	Number of Jobs (000s)			Total Income ($ millions)		
	Part-Time	Full-Time	Total	Part-Time	Full-Time	Total
Current Minimum Wage						
$7.25 to $7.99	56	22	78	$422	$338	$760
$8.00 to $9.99	241	188	429	2,144	3,480	5,624
$10.00 to $10.99	119	141	260	1,234	2,945	4,179
$11.00 to $11.99	109	169	278	1,223	3,811	5,034
$12.00 to $14.99	150	615	765	1,994	16,803	18,796
Total	**675**	**1,135**	**1,810**	**7,017**	**27,376**	**34,394**
$12.00 Minimum Wage						
$7.25 to $7.99	50	20	70	578	464	1,042
$8.00 to $9.99	230	182	413	2,683	4,247	6,930
$10.00 to $10.99	118	140	258	1,383	3,292	4,675
$11.00 to $11.99	109	169	278	1,306	4,049	5,355
$12.00 to $14.99	150	615	765	2,093	17,643	19,736
Total	**657**	**1,126**	**1,783**	**8,043**	**29,695**	**37,738**
Change Based on Current Wage Levels						
$7.25 to $7.99	-6	-2	-8	156	126	282
$8.00 to $9.99	-11	-6	-16	539	767	1,306
$10.00 to $10.99	-1	-1	-2	149	346	495
$11.00 to $11.99	0	0	0	82	239	321
$12.00 to $14.99	0	0	0	100	840	940
Total	**-18**	**-9**	**-27**	**1,026**	**2,319**	**3,344**
Average Gain per Directly Affected Worker				**1,764**	**2,843**	**2,301**

Note: Data do not include tipped workers. Indirectly affected workers earn $12.00 to $14.99 per hour.

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics 2019. Detail for part-time/full-time calculated by IFO using data from U.S. Census Bureau, Current Population Survey and Merged Outgoing Rotation Group dataset (2018) compiled by the National Bureau of Economic Research.

General Price Impact

The analysis projects that the net wage income of low-wage workers will increase by $3.3 billion under the proposal. A pertinent question is the source of that extra income and how it will impact consumers and businesses. Potential sources include higher consumer prices, lower business profits, reduced employee benefits and business savings due to reduced employee turnover and higher productivity.[40] As discussed further in the subsection that follows, the analysis assumes that 60 percent of the higher wages is passed forward to Pennsylvania consumers through higher prices, or $2.0 billion of wage costs ($3.3 billion * 0.60).

Due to a lack of detailed data, it is not possible to estimate the exact increase in prices for the sectors and products/services that would be affected by a higher minimum wage. However, general data and reasonable assumptions can provide an order of magnitude regarding the potential impact on statewide price levels:

- For 2019, total wages paid to all Pennsylvania workers was $355 billion, and the analysis projects that will increase by $3.3 billion (0.9 percent) due to the higher minimum wage for non-tipped workers.[41]

- For 2019, total personal consumption expenditures (i.e., spending by all final consumers, excludes business and government) will be roughly $596 billion. If all higher wage costs were passed forward to consumer purchases, economy-wide price levels would increase by roughly 0.6 percent ($3.3 / $596 billion) if the same mix and quantity of goods and services were purchased. If higher employer payroll taxes are included, the figure increases slightly.

- However, the analysis assumes that only 60 percent of the cost would be passed forward in higher prices, so the economy-wide price level would increase by 0.3 percent (rounded).

This illustration is an oversimplification of the true price adjustment process and is meant only to provide a general order of magnitude for the potential impact on statewide price levels in the year the higher minimum wage is enacted.

The impact on prices would vary across the state economy depending on the sector, consumer responsiveness to prices of specific goods and services and local market conditions. Due to the relatively high proportion of lower-wage workers, the food service and retail trade sectors would be most affected by a $12.00 minimum wage. Other data can be used to gauge the potential price implications for those sectors. For example, the analysis finds that roughly 20 percent of the higher wage income/costs ($3.3 billion) would flow to the food service sector, or $670 million ($3.3 billion * 0.20). Data from the U.S. Department of Labor show total wages for that sector of $6.3 billion (excludes special food services, such as caterers), so that wage income would increase by 11 percent ($670 million / $6.3 billion).[42] Federal tax data show that wage compensation comprises roughly 20 percent of total costs for the food service sector, and if so, prices would need to increase by 2.1 percent (0.11 * 0.20) if all higher wage costs were passed forward and quantity purchased did not change. If employer payroll taxes on the higher wages are included, the figure increases to 2.3 percent. Allowing for a reduction in sales due to higher prices roughly doubles the price

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[40] The higher productivity would arise from the retention of more productive workers, the implementation of cost cutting and efficiency measures and greater job satisfaction of workers who retain employment.

[41] Wages include the U.S. Bureau of Economic Analysis adjustment for residence. Excludes self-employed and independent contractors. Includes bonuses and some tips.

[42] These data are from the Quarterly Census of Employment and Wages.

increase required to fully fund higher wages to 4.6 percent. Finally, the analysis assumes that only 60 percent of the costs are passed forward, which implies a price increase across the entire sector of 2.8 percent.[43]

For the retail trade sector, the analysis finds that 25 percent of the higher wage income/costs would flow to that sector, or $830 million ($3.3 billion * 0.25). Using the same methodology as the food service sector implies a price increase of 0.8 percent for the sector due to the higher minimum wage. If retailers purchase goods from other industries that are also affected by the higher minimum wage, those costs would also get pushed forward into final consumer prices and the price increase would be greater.

Due to higher price levels, all consumers would lose a small amount of real purchasing power to fund most of the higher wages paid to low-wage workers under a higher minimum wage. Research finds that other funding sources include lower business profits, reduced employee benefits, productivity gains and lower costs related to employee turnover.

Impact on General Fund Revenues

In order to estimate the impact from the higher minimum wage on General Fund revenues, the analysis must specify the source of the income gains to low-wage workers. Based on recent studies, this analysis makes the following assumptions regarding the source of the wage gains:

- 5 percent is exported to out-of-state consumers;
- 15 percent is from higher worker productivity and lower turnover (i.e., business savings);
- 10 percent is from lower profits of pass-through entities (partnerships, S corporations and sole proprietors);
- 10 percent is from lower profits of C corporations; and
- 60 percent is from higher prices paid by Pennsylvania consumers.

The first and second bullets represent pure revenue gains because those effects do not need to be offset by less spending or lower incomes elsewhere in the state economy. However, the last three bullets do require offsets. Therefore, the gains from the additional taxable income that now flows to low-wage workers must be reduced for the taxable income that would have flowed to other residents or businesses in the absence of the higher minimum wage. For pass-through entities, the lower profits would have been taxed at the personal income tax (PIT) rate of 3.07 percent. For C corporations, the lower profits would have been taxed at 9.99 percent, but the analysis assumes an effective rate of 8.0 percent due to losses and loss carryforwards. Finally, the $2.0 billion spending shift from higher prices (60 percent of the $3.3 billion in higher incomes for low-wage workers) would have been spent on other goods and services throughout the state economy, and a portion of that spending would have translated into taxable income. Overall, the net effect from the shift in spending patterns and income distribution yields $30 million in higher PIT revenues. The main causes of the increase are the higher productivity/lower turnover from retained workers

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[43] This example and the one that follows assume a general price elasticity of demand of -0.5 (i.e., quantity demanded falls by 5 percent if price increases by 10 percent). Both computations exclude any impact of a higher minimum wage for tipped workers. It is noted that the price increase would be higher for fast food establishments compared to the entire food service sector.

and the fact that most of the redirected spending is funneled to Pennsylvania labor, as opposed to spending on general goods and services where some amounts would flow to out-of-state residents or businesses.

Other General Fund revenue effects from the higher minimum wage include the following:

- The higher wages for low-income filers reduces net claims for Tax Forgiveness (+$10 million).[44]

- Employers must remit the employer share of payroll tax (7.65 percent) on the higher employee wages, which reduces taxable profits. The analysis assumes half would be paid by pass-through entities and half by corporations (-$10 million).

- Overall spending and economic output will increase under the proposal because low-wage workers have a higher marginal propensity to spend any income they receive. This result is noted in nearly all minimum wage studies. This extra spending also has "multiplier effects" that increase the size of the state economy and increases PIT, sales and use tax (SUT) and other consumption tax revenues (+$25 million).

- A general cutback due to a potential shift to underground economic activity. Given the higher wage rate, some firms might elect to pay employees under the table (negative, but not quantified).

Overall, the analysis finds a $55 million increase in General Fund revenues. However, it is noted that the revenue impact from the multiplier effects would not materialize fully in the first year following enactment.

Impact on State and Local Government Expenditures

Due to the increase in the minimum wage, many low-income families would be pulled above the federal poverty level (FPL) and would be eligible for less state assistance. **Table 2.7** details the number and share of families at various ratios of income to FPL in 2018. For that year, the FPL was $16,460 for a family of two, $20,780 for a family of three, $25,100 for a family of four, and an extra $4,320 for each additional dependent above that size. The top half of the table shows that roughly eight percent (263,075) of all Pennsylvania families had income below the FPL and likely qualified for certain state and federal programs. An additional 13 percent (424,550) of families had incomes between 100 and 200 percent of the FPL and likely also qualified for certain state programs (e.g., subsidized child care). The lower half of the table details the number of families within various income groups. Roughly 11 percent of all Pennsylvania families (359,114) earned less than $25,000 and most likely qualified for state and federal subsidy programs depending on the number of family members.

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[44] The simulation used the 2016 Personal Income Tax micro data file for filers who claimed Tax Forgiveness and reported compensation income.

Table 2.7
Families in Pennsylvania by Poverty Level and Income (2018)

	Number of Families	Share of Families
Income to Poverty Level Ratio		
Under 0.50	111,243	3.4%
0.50 to 0.74	71,048	2.2
0.75 to 0.99	80,784	2.5
1.00 to 1.24	97,296	3.0
1.25 to 1.49	99,835	3.1
1.50 to 1.74	109,245	3.4
1.75 to 1.84	48,895	1.5
1.85 to 1.99	69,279	2.1
2.00 to 2.99	488,494	15.1
3.00 to 3.99	473,619	14.6
4.00 to 4.99	399,127	12.3
5.00 and over	1,186,392	36.7
Total	**3,235,257**	**100.0**
Family Income		
Less than $10,000	113,234	3.5%
$10,000 to $14,999	64,705	2.0
$15,000 to $24,999	181,174	5.6
$25,000 to $34,999	236,174	7.3
$35,000 to $49,999	368,819	11.4
$50,000 to $74,999	595,287	18.4
$75,000 to $99,999	488,524	15.1
$100,000 to $149,999	627,640	19.4
$150,000 to $199,999	271,762	8.4
$200,000 or more	287,938	8.9
Total	**3,235,257**	**100.0**

Note: Income excludes capital gains.
Source: U.S. Census Bureau. 2018 American Community Survey.

Higher Minimum Wage Impacts on Various Prototype Households

Although a higher minimum wage increases gross household income (assuming the same hours worked), it is unclear if it directly translates, dollar-for-dollar, into a higher standard of living for households. Certain tax credits and many safety-net programs (e.g., Supplemental Nutrition Assistance Program (SNAP) benefits, child care subsidies and subsidized healthcare) will phase out as incomes increase.

To illustrate this point, the analysis creates three prototype households at hourly wage rates of $10.00 and $12.00. The prototype households are as follows:

(1) Single adult with no children, works full-time (40 hours/week for 52 weeks/year).

(2) Single adult works full-time with a six-year old child (enrolled in child care).

(3) Married couple with two children, ages three and seven (both enrolled in child care). Both parents work full-time.

Table 2.8 displays the results for the prototype households using the two wage rates.

- The first household (single adult with no children) has gross income of $20,800 ($10.00 hourly wage) and $24,960 ($12.00 hourly wage), a 20.0 percent increase. After deduction of federal and state income taxes, and Social Security and Medicare payroll taxes, the household's net income is $17,730 ($10.00 hourly wage) and $20,975 ($12.00 hourly wage), a gain of $3,245 (18.3 percent). All other listed benefits are the same under both wage rates.

- The second household (single adult with one child) also has gross income of $20,800 and $24,960 under the two wage rates. The household qualifies for the Earned Income Tax Credit, Child Tax Credit and Child Care Tax Credit for both wage rates. After deduction of the taxes noted, the household's net income increases from $23,919 ($10.00) to $26,969 ($12.00), a gain of $3,050 (12.8 percent).[45] At a $10.00 hourly wage, the household qualifies for SNAP (estimated $1,222 annual benefit) and the child care subsidy with an annual family co-payment of $1,508. However, if the hourly wage is $12.00, the household's annual SNAP benefit declines $780 (-63.9 percent) to $442 and the annual child care subsidy family co-payment increases by $728 (48.3 percent) to $2,236. Hence, nearly one-half of the net income gain is eliminated due to reduced benefits. Also note that this household is no longer eligible for Medicaid, but is eligible for subsidized health care through the Children's Health Insurance Program (CHIP). This type of program eligibility shift affects state safety net program costs described in the next section.

- The third household (married couple with two children) has gross income of $41,600 and $49,920 under the two wage rates. The household qualifies for the Earned Income Tax Credit, Child Tax Credit and Child Care Tax Credit for both wage rates. After deduction of the taxes noted, this household's net income increases from $43,611 ($10.00) to $49,286 ($12.00), a gain of $5,675 (13.0 percent).[46] At a $10.00 hourly wage, the household also qualifies for SNAP (estimated $370 annual benefit) and the child care subsidy with an annual family co-payment of $3,536. It also qualifies for Women, Infant and Children (WIC) benefits. However, if the hourly wage is $12.00, the household no longer qualifies for SNAP or WIC. Additionally, the annual child care subsidy family co-payment increases by $1,404 (39.7 percent) to $4,940.

These simple examples illustrate the impact of various credit and benefit phase-outs on households. Due to the credit phase-outs, the net income of affected households does not always increase by the same percentage as the increase in the hourly wage rate. Various benefit phase-outs also reduce the overall gains from the higher wage rate.

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[45] The Child Tax Credit and Earned Income Tax Credit are refundable, which means the tax filer receives the tax credit as a refund if they have no tax liability. As a result, the tax filer's after-tax net income can exceed their gross income.
[46] See previous footnote.

Table 2.8
Impact of Increase in Hourly Wage Rate on Households

	Hourly Wage	Single, no children	Single, w/6 yr old child	Married, w/3 & 7 yr old children
Gross annual income[1]	$10.00	$20,800	$20,800	$41,600
	$12.00	$24,960	$24,960	$49,920
Total federal taxes[2]	$10.00	$840	-$5,349	-$6,470
	$12.00	$1,310	-$4,684	-$4,718
Income after federal, state & SS/Medicare payroll taxes[3]	$10.00	$17,730	$23,919	$43,611
	$12.00	$20,975	$26,969	$49,286
CHIP or Medical Assistance[4]	$10.00	Not Eligible	Medical Assistance	Free CHIP
	$12.00	Not Eligible	Free CHIP	Free CHIP
WIC benefits[5]	$10.00	n.a.	Not Eligible	Eligible
	$12.00	n.a.	Not Eligible	Not Eligible
Annual SNAP benefits[6]	$10.00	Not Eligible	$1,222	$370
	$12.00	Not Eligible	$442	Not Eligible
Annual child care subsidy	$10.00	n.a.	$1,508	$3,536
	$12.00	n.a.	$2,236	$4,940
LIHEAP[8]	$10.00	Crisis	Cash & Crisis	Crisis
	$12.00	Crisis	Cash & Crisis	Crisis
Subsidized housing[9]	$10.00	Yes	Yes	Yes
	$12.00	Yes	Yes	Yes

Note: Assumes all families live in Dauphin County and all adults in the household make the same wage. All children in the prototype households are in child care. Unless otherwise noted, all calculations are based on 2020 tax/calendar year.

1 Assumes all adults work 40 hours per week, 52 weeks per year and do not have any unearned income.

2 Assumes married couple files jointly, families with children have the child care subsidy copay as their only qualifying child care expense. This line includes the Earned Income Tax Credit, Child Tax Credit and Child Care Tax Credit. Negative values indicate a refund. Source: U.S. Internal Revenue Service (https://apps.irs.gov/app/tax-withholding-estimator/tax-credits).

3 State taxes are calculated by multiplying gross income by 3.07%. None of the prototype households qualify for state tax forgiveness. Social Security (SS)/Medicare payroll taxes are calculated by multiplying gross income by 7.65%.

4 CHIP benefits are determined using 2020 federal income guidelines for determining CHIP eligibility. If the child falls below CHIP guidelines, it is assumed that they qualify for Medical Assistance.

5 WIC benefits are based on the FY 2019-20 income guidelines. It serves new mothers and infants and children under 5 years old.

6 SNAP benefits are based on the federal fiscal year 2019-20 income guidelines. For the prototype households with children, the qualifying child care expenses are based on the child care subsidy family co-pay. All prototype households are assumed to have $250 in excess of shelter expenses/month.

7 Based on FY 2019-20 published data in 49 Pa.B. 3160; June 15, 2019.

8 Based on FY 2019-20 income guidelines. Cash grants are used to help pay for monthly heating bills. Crisis Interface Program assists families who need repairs to their heating systems as well as help those who are in danger of losing their heating source or do not have heat.

9 All prototype households qualify for subsidized housing (i.e., Section 8 Housing). However, there are significant waiting lists and many who qualify do not actually receive this housing.

Impact on State Safety Net Programs

For the Executive Budget, the Department of Human Services (DHS) estimated the budgetary impact of a $12.00 minimum wage. All savings and costs presented in this subsection pertain to the state programs, and any federal net savings for Medical Assistance, Temporary Assistance for Needy Families (TANF) and

SNAP are not included. For FY 2020-21, DHS projects that the department would incur net costs of $10.7 million, which increase to $100.4 million by FY 2022-23 (reflecting the proposed minimum wage increases up to $13.00 in July 2022). (See **Table 2.9**.) This analysis does not account for changes in the federal matching rate or program eligibility impacts resulting from the recent COVID-19 disruptions and enactment of federal stimulus bills.

Table 2.9
Impact of Minimum Wage on DHS Program Expenditures

Program	20-21	21-22	22-23
CHIP	$3.5	$17.5	$21.8
Medical Assistance - Capitation	-20.5	-105.0	-129.2
Community HealthChoices	25.6	50.5	81.5
ICF/ID	0.0	1.4	3.0
Child Care Services[1]	0.0	56.2	69.8
Child Care Assistance[1]	0.1	41.3	51.3
County Child Welfare	2.1	2.1	2.2
Total	**10.7**	**64.2**	**100.4**

Note: Amounts in dollar millions. Estimates are for state expenditures only. Estimates reflect the proposed minimum wage increases to $12 in 2020, $12.50 in 2021 and $13.00 in 2022. ICF/ID is intermediate care facilities and intellectual disabilities.

1 It is assumed that federal funds will be used to cover $74.2 million in child care program costs in FY 2020-21.

Source: Pennsylvania Department of Human Services.

The largest state savings result from individuals who are no longer eligible for Medical Assistance. DHS estimates that roughly 48,400 adults and 19,000 children would no longer qualify for Medical Assistance based on income eligibility at the $12.00 minimum wage level. Those savings are offset by an increase in CHIP spending and higher reimbursement rates to child care and direct care workers. For community-based programs for persons with physical disabilities and seniors, DHS assumed that direct care workers receive an average wage of $11.51 per hour and utilized 2018 consumer data to compute the impact. For the child care subsidy programs, DHS assumed that (1) the average wage of child care workers is $10.42 and (2) 40 percent of children in child care receive a subsidy.

Due to staggered eligibility screenings and payment processing timeframes, the FY 2020-21 estimate does not represent a full year of impacts. It is also assumed that federal funds can be used to cover $74.2 million in child care program costs in FY 2020-21. In future fiscal years, state funds will be needed to pay for these additional costs for child care services and child care assistance.

Compared to prior estimates, net DHS program costs have increased because those individuals who transition off of Medical Assistance tend to have a higher federal matching rate resulting in less state savings. In addition, the federal matching rate for children who are no longer eligible for Medical Assistance benefits but transition to the CHIP program has been reduced, which increases state costs for those children compared to prior years.

Impact on Tipped Workers

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. Under current law, 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 yields an hourly wage rate of $7.25 or more. For Pennsylvania, such employees can be paid a wage as low as $2.83 per hour.

Table 2.10 details the minimum wages for tipped workers by state as of January 1, 2020. The table contains three groups of states:

- Eight states (Washington, California, Oregon, Alaska, Hawaii, Minnesota, Montana and Nevada) set their tipped minimum wage at the regular state minimum wage and do not allow employers to include tips in the calculation of the minimum wage. For those eight states, four have a lower tipped wage for small businesses (California, Minnesota and Montana) and/or businesses that provide health insurance to their employees (Nevada).

- Twenty-six states and Washington D.C. have tipped minimum wages above the federal minimum cash wage of $2.13, including Pennsylvania and all border states. All of these states require employers to pay a cash wage between $2.23 (Delaware) and $9.00 (Arizona).

- The remaining 16 states only require employers to pay the federal minimum tipped cash wage ($2.13). One state (Nebraska) has a combined cash and tipped minimum wage greater than the federal minimum of $7.25 per hour.

Table 2.11 lists the employment status and gender for all tipped Pennsylvania workers. For the purpose of the table, tipped workers include the following occupations: bartenders, wait staff, food servers, hosts/hostesses, barbers, hairdressers, miscellaneous personal appearance workers, miscellaneous personal care and service workers, baggage handlers and gaming service workers. It is noted that the figures do not include independent contractors, such as those working for Uber or Lyft. Other workers may also receive tips (e.g., counter service workers), but those jobs are included with non-tipped workers. Various sales personnel who may receive commissions are also included with non-tipped workers because the data do not allow the analysis to separately identify those workers.

Table 2.10
State Minimum Wages for Tipped Employees (as of January 1, 2020)

Jurisdiction	Combined Cash & Tip Min. Wage	Min. Cash Wage
State requires employers to pay tipped employees full state minimum wage before tips		
Washington	$13.50	$13.50
California	13.00	13.00
Oregon	11.25	11.25
Alaska	10.19	10.19
Hawaii	10.10	10.10
Minnesota	10.00	10.00
Montana	8.65	8.65
Nevada	8.25	8.25
State requires employers to pay tipped employees a min. cash wage above the federal min. ($2.13/hr)		
Arizona	12.00	9.00
Colorado	12.00	8.98
New York	11.80	7.85
Connecticut	11.00	6.38
Maine	12.00	6.00
Illinois	9.25	5.55
Florida	8.56	5.54
Vermont	10.96	5.48
Massachusetts	12.75	4.95
North Dakota	7.25	4.86
Missouri	9.45	4.73
South Dakota	9.30	4.65
Washington D.C.	14.00	4.45
Iowa	7.25	4.35
Ohio	8.70	4.35
Rhode Island	10.50	3.89
Michigan	9.65	3.67
Maryland	11.00	3.63
Idaho	7.25	3.35
New Hampshire	7.25	3.26
New Jersey	11.00	3.13
Pennsylvania	7.25	2.83
Arkansas	10.00	2.63
West Virginia	8.75	2.63
New Mexico	9.00	2.35
Wisconsin	7.25	2.33
Delaware	9.25	2.23
State minimum cash wage payment is the same as the federal Fair Labor Standards Act ($2.13/hr)		
Nebraska	9.00	2.13
Other	7.25	2.13

Note: Other includes Alabama, Georgia, Indiana, Kansas, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Utah, Virginia and Wyoming. Shaded states border Pennsylvania.

Source: The Economic Policy Institute. Minimum Wage Tracker (updated January 3, 2020).

Table 2.11					
Tipped Workers Affected by a $12 Minimum Wage for 2019					
	Employment Status (000s)		**Employee Gender (000s)**		
	Part-Time	**Full-Time**	**Male**	**Female**	**Total**
Total Jobs	111	66	50	127	177

Source: U.S. Bureau of Labor Statistics, Occupational Employment Statistics 2019. Detail for part/full-time and gender calculated by IFO using data from U.S. Census Bureau, Current Population Survey and Merged Outgoing Rotation Group dataset (2018) compiled by the National Bureau of Economic Research.

Recently, New York City increased the cash wage for tipped food service workers from $7.50 per hour (2017) to $8.65 (2018) and $10.00 (2019). When combined with the credit for tips received, the overall wage rate was $11.00 (2017), $13.00 (2018) and $15.00 (2019).[47] Tipped food service workers are generally employed by full-service restaurants and data from the U.S. Bureau of Labor Statistics reveal an employment reduction for that subsector in New York City for 2018 (-1.5 percent) and 2019 (-1.6 percent). (See **Table 2.12**.)[48] For New York State excluding New York City, the combined hourly wage rate (cash plus tip credit) increased from $9.70 (2017) to $10.40 (2018) to $11.10 (2019). Employment at full-service restaurants also declined in 2018 (-0.4 percent) and 2019 (-2.1 percent).

Table 2.12			
New York Food Service and Total Employment Growth Rates			
New York City (NYC)			
Calendar Year	**Limited Food Service**	**Full Food Service**	**Total Employment**
2015	6.4%	5.5%	3.0%
2016	4.8	1.7	2.2
2017	6.2	3.5	2.0
2018	3.8	-1.5	2.1
2019	2.9	-1.6	2.2
New York State (excludes NYC)			
Calendar Year	**Limited Food Service**	**Full Food Service**	**Total Employment**
2015	1.9%	1.8%	0.8%
2016	2.4	1.6	1.0
2017	2.5	1.4	0.7
2018	1.0	-0.4	0.7
2019	0.5	-2.1	0.2

Notes: For NYC, applies to full food service establishments with more than 10 employees. For tipped workers and base minimum wage, rates are higher in Westchester County and Long Island than New York State excluding NYC: 30 cents higher (2017), 60 cents (2018) and 90 cents (2019).

Source: State and Area Employment, U.S. Bureau of Labor Statistics, non-seasonally adjusted data.

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[47] Applies to employers with 11 or more employees.
[48] See https://www.bls.gov/sae/. Data are for non-seasonally adjusted payroll employment.

For New York City and New York State, the minimum wage rate for tipped workers (cash plus tip credit) was the same as the base hourly minimum wage rate for non-fast food workers. The data from Table 2.12 show that employment patterns at full-service restaurants diverged notably from overall employment patterns. For fast food workers, despite hourly minimum wage rates increasing by $1.00 (New York State) or $1.50 (New York City) in each of the past three years, employment at limited-service restaurants posted moderate to strong gains.

Moving from a $12 to $15 per Hour Minimum Wage

Following the enactment of a $12.00 minimum wage, the proposal increases the minimum wage by 50 cents per annum beginning July 1, 2021. By July 1, 2026, the minimum wage reaches $15.00 and is indexed to inflation annually thereafter. Currently, no state has a $15.00 per hour minimum wage, so it is not possible to assess the potential implications for Pennsylvania. However, a few items can be noted:

- For 2019, there were 1.81 million positions that paid less than $15.00 per hour. That figure represents 30.6 percent of all payroll jobs (tipped and non-tipped) in the state.

- For those workers, the phased-in increase would represent a significant wage gain. For example, for the first year the increase would be 4.2 percent ($0.50 / $12.00). By the final year, the increase would be 3.4 percent ($0.50 / $14.50).

- Similar to the increase to $12.00, much of any negative employment impact would likely be borne by new entrants to the labor market, and existing workers would reap most of the gains.

- Firms might respond to higher wages through a reduction in benefits such as healthcare and retirement plans. Low-wage workers earning under $12.00 per hour likely receive few benefits, but workers earning $12.00 to $14.99 per hour likely receive some form of healthcare or retirement savings benefits.

Revenue Estimate Comparison

Based on a request from the Senate Appropriations Committee, the analysis concludes with a comparison of the IFO revenue estimate and key assumptions to the same proposal included in the Executive Budget. Based on a letter sent from the Department of Revenue to the House Appropriations Committee, the administration projects the following impacts on General Fund revenues for FY 2020-21 due to a $12.00 minimum wage:[49]

- Wage income for low-income workers increases by roughly $4.7 billion and PIT for those workers increases by $144 million. (The comparable figures for IFO are $3.3 billion and $102 million.) Due to the higher wage, profits of pass-through entities decline by $3.2 billion and PIT remittances of those owners fall by $99 million. Therefore, lower profits finance 69 percent of the higher wages for low-income workers. Additionally, Tax Forgiveness falls by $11 million. The net PIT impact is a gain of $54 million.

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[49] See DOR written responses to FY 2020-21 Budget Hearing Questions, February 28, 2020, https://www.pahouse.com/files/BudgetHearingTestimony/2020-21/03-09/REV_BdgHearingResponse_022820.pdf.

- Sales and use tax revenues increase due to higher wage income and spending of low-income workers ($124 million). That is partially offset by lower taxable spending of small business owners due to lower profits (-$41 million). The net gain of $80 million (includes a negative impact of -$3 million for lower employment growth) is largely driven by the assumption that low-income workers spend a much higher share of their new income on taxable items as compared to the income lost by business owners.

- The administration's net revenue impact is **$133 million**, compared to the IFO estimate of **$55 million**. Three factors motivate the administration's higher revenue estimate: (1) the inclusion of wage gains for tipped workers, (2) the assumption that 31 percent of the wage gains do not need to be financed or offset (20 percent for IFO) and (3) a higher differential in the share of income gains (losses) spent on taxable items by low-wage workers (business owners and other consumers).

Summary

Similar to other policy changes, policymakers face tradeoffs from a higher minimum wage. There will be many who benefit from the change, but a smaller group will be adversely impacted too. Policymakers will need to decide whether the projected gains outweigh the drawbacks.

The analysis found the following gains from a $12.00 per hour minimum wage for non-tipped workers:

- Roughly 1.02 million payroll jobs would be directly affected and net wage income for low-wage workers would increase by $2.4 billion, roughly $34 per week for part-time workers and $55 per week for full-time.

- There would be spillover effects for workers earning $12.00 to $15.00 per hour. The analysis assumes a five percent wage increase, which yields $940 million of gains for 765,000 payroll jobs.

- The size of the state economy would expand because low-wage workers will spend nearly all of the new income they receive. General Fund revenues would increase by roughly $55 million per annum once all economic multiplier effects have been fully realized.

- Although businesses would incur higher labor costs, they should also realize cost savings through an increase in worker productivity and reduced labor turnover.

The analysis also found the following drawbacks from the proposal:

- An employment reduction of 27,000 positions, 18,000 part-time and 9,000 full-time (excludes tipped workers).

- More difficult entry into the labor market for inexperienced workers, especially high school and college students who work part-time.

- The Department of Human Services projects that state expenditures would increase by $10.7 million in FY 2020-21 as a result of a $12.00 minimum wage. Prior year estimates reported a savings, but the current year estimates reflect a higher federal matching rate for individuals leaving Medical Assistance (less state savings) and a lower federal matching rate for children moving to CHIP (higher state costs). State safety net program costs are estimated to increase to $100.4 million in FY 2022-23.

- Higher price levels for sectors affected by the higher minimum wage, in particular the food service and retail trade sectors.

- Stronger negative employment effects for rural areas that have a lower cost of living and a greater share of small, regional employers.

- Lower profit levels that can be reinvested into business operations.

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