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## Effect of a federal minimum wage increase to \$15 by 2025 on the federal budget

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*The Raise the Wage Act of 2021*, recently introduced by Senator Bernie Sanders and Representative Bobby Scott, would increase the federal minimum wage to \$9.50 this year and then gradually to \$15 by 2025.<sup>1</sup> It would then index further annual increases to median wage growth and gradually eliminate the subminimum wages for tipped workers and for teen workers. Congress is considering whether the Act could be passed as a budget reconciliation item. To inform this debate, I provide a quick estimate of the likely effects of *The Act* on changes in both aggregate federal tax revenues and expenditures at the time of full implementation in 2025. I base my estimate principally upon the findings in the causal research literature, including my own previous work on the side effects of the minimum wage (Reich and West 2015), and that of other economists, notably Dube (2019) and Borgschulte and Ho (2020). I estimate that, once it is fully implemented in 2025, the Act would have a positive effect on the federal budget of **\$65.4 billion per year**.

\*Professor, UC Berkeley and Co-Chair, Center on Wage and Employment Dynamics, UC Berkeley. I acknowledge support from CWED and I am grateful for suggestions from Mark Borgschulte, Hee-yeon Cho and Ken Jacobs.

*Professor Reich is the author of numerous scholarly studies of minimum wage effects on employment, which have influenced the views of the economic profession. He has also studied the effects of minimum wages on federal safety net programs, on adult health and on child poverty. These papers can be found at <https://irle.berkeley.edu/publications/minimum-wage-group/>*

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<sup>1</sup> (<https://edlabor.house.gov/imo/media/doc/2021-01-26%20Raise%20the%20Wage%20Act%20Fact%20Sheet.pdf>),

## 1. How increases in the federal minimum wage affect federal budgets

Federal minimum wage increases can generate additional costs for the federal government, insofar as federal employees, federal contract workers and workers on federally funded programs (such as Medicare and Medicaid) are paid below the new minimum wage. Wage increases can also lead to savings on government programs, particularly on means-tested safety net programs that phase out as incomes increase. Savings can also occur to the OASDI fund, if older workers delay their retirement.

Federal tax revenues can also be affected. Pay increases will increase payroll and income tax revenue. Minimum wage increases are unlikely, however, to affect corporate profits taxes. The available evidence, as I discuss below, suggests that businesses adjust to higher minimum wages without hurting their profits.

Federal costs and tax revenue will also be affected if higher minimum wages generate increases in core inflation. As I discuss in Appendix A, there is little evidence for such an inflationary effect.

The magnitude of these effects depends crucially on the size of the aggregate wage increase generated by the Act. I turn next to this issue.

## 2. Size of the aggregate wage increase

Using a mechanical simulation model, David Cooper (2019) estimated that about 32 million workers would receive pay increases under *The Raise the Wage Act of 2019* and that aggregate wages would increase by \$92.4 billion per year.<sup>2</sup> All these figures refer to 2025, when the increase to \$15 would be fully implemented.

A separate Presidential Executive action has set into motion \$15 minimum wages for federal employees and federal contractors.<sup>3</sup> Excluding these workers from Cooper's estimate would reduce his estimated aggregate wage effect, perhaps by as much as 10 percent.<sup>4</sup>

The causal minimum wage research literature, which measures behavioral adjustments that are not incorporated in simulations, contains findings that would increase the estimated effect of the Act on aggregate wages. These findings include longer-term positive wage effects (Rinz and Voorhies 2018), higher than simulated wage effects among black workers (Wursten and Reich

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<sup>2</sup> A new minimum wage fact sheet issued jointly today by EPI and NELP states that the aggregate wage increase of the 2021 Act would be \$107 billion per year. I am unable to verify how EPI/NELP arrive at a larger number than for the 2019 Act. I therefore use the 2019 estimate here.

<sup>3</sup> The Executive Order is silent on whether employees whose work is supported principally by federal funds (such as hospital, nursing home and home care workers) are included in the category of contract workers. About 3 million low-paid workers are employed in these industries, or about 10 percent of the total number of affected workers.

<sup>4</sup> The most credible study of automation effects (Ashenfelter and Jurajda) does not find any effects. Disemployment effects might also occur, according to some researchers. However, a substantial recent research literature finds that disemployment effects are elusive (Cengiz et al. 2019, Godoey and Reich 2021, Manning 2021).

2021) and increased work and pay among workers close to retirement (Borgschulte and Cho 2020).

The magnitudes of these offsetting adjustments are difficult to estimate.<sup>5</sup> In Appendix A, I suggest the net effects might be much larger. But for the purposes of the present exercise, I make the conservative assumption that they are a wash.

### 3. Effects on federal tax revenues

The tax effects consist of higher payroll and income taxes, but not any effects on corporate profits. Rigorous causal studies (such as Ashenfelter and Jurajda 2021) find that minimum wage increases are passed on nearly fully in restaurant consumer prices. Cooper, Luengo-Prado and Parker (2020) find that minimum wage increases raise restaurant prices modestly, but they have no effect on core inflation. The only U.S. study with data on profits finds that minimum wages have no effect.<sup>6</sup>

**Payroll tax revenues** The FICA tax rate is 15.3 percent of the wage, up to \$142,800 dollars in wages and salaries. The tax thus applies to 100 percent of wages of workers affected by minimum wage increases. Multiplying  $.153 \times \$92.4$  billion equals **\$14.4 billion** additional payroll tax revenue per year.

Borgschulte and Cho (2020) find that minimum wages reduce retirements and increase working hours among workers over 62. A 10 percent increase in the minimum wage generates a 2.5 percent increase in full-time work among 62- to 70-year-olds, a 3.0 percent increase in weekly earnings, a 0.22 percent reduction in the number of Social Security recipients and a 0.3 percent reduction in Social Security payments.

In response to my request, HeePyung Cho, now at the Korean Institute of Public Finance, has used these elasticities to conduct a back-of-the-envelope calculation of the implications of a \$15 federal minimum wage (see Appendix B). Cho's calculation takes into account the effects of the increased labor supply of older workers on the reduced employment of workers who are younger. Cho finds that FICA revenues would increase by **\$5.0 billion**.

***The increase in payroll taxes would therefore total \$19.4 billion per year.***

**Income tax revenue** According to the IRS, the effective personal income tax rate for the bottom half of taxpayers is 4.0 percent.<sup>7</sup> The effective rate for the bottom 30 percent is likely lower.

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<sup>5</sup> CBO 2019 estimated that 23.7 million workers would obtain pay increases if the minimum wage were increased gradually to \$15, while Cooper's number was 33 million workers. Cooper (2019) argues the CBO estimate is too low, for two reasons: a) CBO used too high an estimate of underlying wage growth, forecasting that low-paid workers' nominal wages would increase by 3.5 percent per year and that real wages would increase by 1.5 percent annually; and b) CBO substantially under-estimated the number of workers receiving subminimum wages.

<sup>6</sup> Ruffini (2020) finds that nursing homes absorb minimum wages through increases in productivity and declines in employee turnover, without any effect on profits.

<sup>7</sup> <https://www.irs.gov/statistics/soi-tax-stats-individual-income-tax-rates-and-tax-shares>

Assuming it is 2 percent, **the increase in federal income tax revenues totals \$1.8 billion per year.**<sup>8</sup>

***The total increase in federal tax payroll and income tax revenues is therefore \$21.2 billion per year***

#### **4. Effects on federal expenditures**

***Offsets to safety net expenditures on low wage workers*** Means-tested programs gradually phase out benefits and eligibility as incomes rise. The rate of phase-out varies among the programs.

Jacobs et al. (2021) estimate the total transfer payments paid to workers who earn below \$15 in 2015-19. They find that 47 percent of all such year-round workers received income from at least one of five public safety net programs (Medicaid, CHIP, TANF cash assistance, SNAP and the federal EITC). They further find that such payments averaged \$107 billion per year over the period 2015-19. In contrast, 28 percent of all year-round workers received payments from at least one of these programs. These findings suggest that raising wages will reduce the public costs of the programs. Their correlational analysis cannot, of course, tell us the causal effects of minimum wage increases on reducing these transfer payments.

The Jacobs et al. estimate of \$107 billion is nonetheless conservative, as the authors do not include safety net payments to part-time workers or to workers who would be affected indirectly by a \$15 minimum wage.<sup>9</sup>

The actual offsets from minimum wage increases have been causally estimated by Reich and West (2015) on SNAP and Dube (2019) on the EITC, CTC and SNAP. The two studies obtain similar findings, although Dube's is the more rigorous. Dube finds that the offsets amount to 34 percent among nonelderly families in the bottom 30 percent of the income distribution.

***Multiplying .34x\$94.2 billion equals a reduction of federal expenditures of \$32 billion per year.***

***Offsets to Social Security expenditures*** As previously mentioned, Borgschulte and Cho (2020) estimated the effects of minimum wages on retirement. They find substantial delays in retirement. Workers who are paid more and who delay their retirement will receive bigger Social Security checks when they do retire. However, they will also be replaced by a new cohort of workers who will contribute more in taxes to the Social Security Trust Fund. Appendix A shows Cho's calculations, which I have adjusted to take into account higher benefits in later years.

***The savings on OASDI expenditures amounts to \$12.2 billion per year.***

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<sup>8</sup> The Earned Income Tax Credit (EITC) schedule includes both an ascending and a descending schedule. For this reason, the effects of minimum wage increases on this credit is a wash (Reich and West, unpublished estimates).

<sup>9</sup> The indirect effects (spillovers) would reach to about \$19; the increased aggregate earnings of such workers would total about 40 percent of the amount received by those directly affected.

***Reduction in federal expenditures on safety net programs and OASDI: \$44.2 billion per year***

***A note on Medicare and Medicaid*** Some increased expenditures would also arise, mainly to cover mandated wage increases in Medicare and Medicaid-funded programs, to the extent that those wage increases are not already covered by President Biden's executive order. On the other hand, the estimates above do not include savings from decreased enrollments in Medicaid and improvements in the physical and mental health of Medicaid recipients that are generated by minimum wage increases. Conditional on the net effect of these offsetting savings and costs, the final savings to the federal government may be higher or lower than I project here.

The California Department of Health Services has published estimates of the effects of higher state minimum wages on federal and state Medicaid costs in California. They project substantial federal savings in 2021-22, as the state minimum wage rises for most employees to \$15.

**5. Conclusion**

***Total positive effect on the federal budget: \$65.4 billion per year***

**References**

Ashenfelter, Orley and Stepan Jurajda 2021. “Wages, Minimum Wages, and Price Pass-Through: The Case of McDonald’s Restaurants.” Industrial Relations Section Working Paper #646. Princeton University. <http://arks.princeton.edu/ark:/88435/dsp01sb397c318>

Borgschulte, Mark and HeePyung Cho 2020. “Minimum Wages and Retirement.” *ILR Review* 73, 1: 153-77. DOI: <https://doi.org/10.1177/0019793919845861>

Congressional Budget Office 2019. “The Effects on Employment and Family Income of Increasing the Federal Minimum Wage.” <https://www.cbo.gov/system/files/2019-07/CBO-55410-MinimumWage2019.pdf>

Cooper, David 2019. “Raising the federal minimum wage to \$15 by 2025 would lift wages for over 33 million workers.” <https://www.epi.org/publication/minimum-wage-15-by-2025/>

Cooper, Daniel, Maria Luengo-Prado and Jonathan Parker 2020. “The Local Aggregate Effects of Minimum Wage Increases.” *Journal of Money, Credit and Banking* 52, 1: 5-35. DOI: <https://doi.org/10.1111/jmcb.12684>

Dube, Arindrajit 2019. “Minimum Wages and the Distribution of Family Income.” *American Economic Journal: Applied Economics* 11, 4: 268–304. DOI: <https://doi.org/10.1257/app.20170085>

Godoe, Anna and Michael Reich 2021. “Are Minimum Wage Effects Greater in Low-Wage Areas?” *Industrial Relations*, in Early View DOI: <https://doi.org/10.1111/irel.12267>.

Godoe, Anna, Michael Reich and Sylvia Allegretto 2020. “Parental Labor Supply: Evidence from Minimum Wage Changes.” Revise and resubmit, *Journal of Human Resources*.  
<https://irle.berkeley.edu/parental-labor-supply-evidence-from-minimum-wage-changes/>

Jacobs, Ken, Ian Perry and Jennifer McGillvary 2021. “The Public Cost of a Low Minimum Wage.” UC Berkeley Labor Center. <https://laborcenter.berkeley.edu/the-public-cost-of-a-low-federal-minimum-wage/>

Manning, Alan 2021. “The Elusive Employment Effect of the Minimum Wage.” *Journal of Economic Perspectives*, forthcoming.

Reich, Michael and Rachel West 2015. “The Effects of Minimum Wages on Food Stamp Enrollment and Expenditures.” *Industrial Relations* 54, 4: 668–94. DOI: <https://doi.org/10.1111/irel.12110>

Rinz, Kevin and John Voorhies 2018. "The Distributional Effects of Minimum Wages: Evidence from Linked Survey and Administrative Data." CARRA Working Paper 2018-02. U.S. Bureau of the Census. <https://kevinrinz.github.io/minwage.pdf>

Ruffini, Krista 2020. “Worker Earnings, Service Quality, and Firm Profitability: Evidence from Nursing Homes and Minimum Wage Reforms.”  
[https://drive.google.com/file/d/1d6vYu\\_uN9keb9iiT2R5UJihA\\_61K0Fce/view](https://drive.google.com/file/d/1d6vYu_uN9keb9iiT2R5UJihA_61K0Fce/view)

West, Rachel and Michael Reich 2014. “A Win-Win for Working Families and State Budgets.” Center for American Progress and UC Berkeley Institute for Research on Labor and Employment, <https://irle.berkeley.edu/a-win-win-for-working-families-and-state-budgets/>

Wursten, Jesse and Michael Reich 2021 “Racial Inequality and Minimum Wages in Frictional Labor Markets.” IRLE Working Paper no. 101-21. <https://irle.berkeley.edu/racial-inequality-and-minimum-wages-in-frictional-labor-markets/>

## **Appendix A Discussion of further possible adjustments**

**Wage effects** Kevin Rinz and John Voorhies, two Census Bureau employees, studied the one- and five-year effects of minimum wages on wage trajectories. Their study is particularly informative because they had access to longitudinal administrative Social Security earnings data. They were thus able to follow the same individuals and using data that do not suffer from tail measurement error, such as has plagued the Current Population Survey.

Rinz and Voorhies (2018) show the one- and five-year effects in Figures 8 and 9 of their paper. For the bottom 20 percent of the wage distribution, which is where minimum wage workers concentrate, the five-year effects are nearly three times as large as the one-year effect. While they are unable to identify the pathway for such large increases, they speculate that reductions in employee turnover mean that many low-paid workers obtain promotions and climb a career pay ladder.

The aggregate wage effects identified causally by Rinz and Voorhies would substantially change the effects of a \$15 federal minimum wage on government spending and taxes.

In addition, Wurster and Reich (2021) causally identify much larger wage effects among black workers than can be explained by their lower wages. These authors show that higher minimum wages increase low-skilled black workers' access to automobiles, thereby overcoming spatial frictions that had limited their labor market opportunities.

**Labor supply effects** A small but growing body of causal research studies have found that minimum wages have significant positive effects on labor supply. Supply effects may explain why studies that examine only labor demand find such small effects. Recent studies in this vein include Godoey, Reich and Allegretto (2020), who find increased work among father and mothers of young children; and Borgschulte and Cho (2020), who find increased employment rates among workers 62-70, even after taking into account the effects on workers in their 50s.

Borgschulte and Cho's causally identified elasticities imply that aggregate wage increases are at least \$30 billion higher than Cooper's mechanical estimate.

**Inflation** The most credible study is by Daniel Cooper, Maria Luengo-Prado and Jonathan Parker (2020). These authors use the Bureau of Labor Statistics' Consumer Expenditure Survey in 28 metro areas to examine effects of minimum wages on prices and spending. They find a small but statistically significant effect on restaurant prices but no effect on core inflation. They also find that nominal spending at restaurants increased at about twice the rate of price increase at restaurants. This finding suggests that minimum wages improved restaurants' economic condition, both by permitting price increases and because of increased consumer demand.

## Appendix B Minimum Wage Effects on OASDI Payments and FICA Collections

Mark Borgschulte, University of Illinois and HeePyung Cho, Korea Department of Finance

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Average effective minimum wage as of 2019: \$11.80 (Tedeschi)

<https://www.nytimes.com/2019/04/24/upshot/why-america-may-already-have-its-highest-minimum-wage.html>

□ Percentage change (log difference) between \$15 and \$11.8  $\approx$  24 percent increase

### 1. OASDI Payout

□ Coefficient from Borgschulte and Cho (2020) Table 5 Column 8: -0.051

□ Total OASDI benefit payments in 2019: \$994 billion

<https://www.ssa.gov/policy/trust-funds-summary.html#:~:text=A%202019%20annual%20surplus%20of,estimated%20annual%20expenditures%20for%202020.>

□ **Change in OASDI payout amount: \$994 billion \* (-0.051) \* 0.24 = - \$12.2 billion**

### 2. FICA Revenue

□ Earnings Elasticities (including 0 earner) from Table 3 Column 5

i. Age 50-61: -0.014

ii. Age 62-70: 0.301

iii. Age 16+: 0.078 (insignificant, estimated today using our existing data)

□ Wage Income Share (calculated from ACS 2019)

i. Age 50-61: 0.282

ii. Age 62-70: 0.088

□ OASDI Tax revenues in 2019: \$914.3 billion

<https://www.taxpolicycenter.org/briefing-book/what-are-major-federal-payroll-taxes-and-how-much-money-do-they-raise>

□ **Change in OASDI tax revenue**

i. Using elasticities of Age 16+: \$914.3 billion \* 0.078 \* 0.24 = + \$17.1 billion

ii. Using elasticities of 50-61 and 62-70: \$914.3 billion \* (-0.014) \* 0.24 \* 0.282 + \$914.3 billion \* (0.301) \* 0.24 \* 0.088 = +\$4.95 billion