

The State Employment Impact of a \$15 Minimum Wage

Technical Analysis By:

Dr. William Even, Miami University

Dr. David Macpherson, Trinity University

January 2021

About the Economists

DR. DAVID MACPHERSON is the E.M. Stevens Professor of Economics at Trinity University, where he also serves as department chair. Prior to joining Trinity University, he held the Rod and Hope Brim Eminent Scholar Chair in Economics, and was Director of the Pepper Institute on Aging and Public Policy at Florida State University. Earlier, he served as an assistant and associate professor of economics at Miami University. Macpherson's research has been concentrated on examining factors that cause deviations from wage equalization. In particular, he has focused on the role of trade unions, pensions, wage discrimination, industry deregulation, and the minimum wage. Macpherson has written over 60 journal articles and book chapters. He is a co-author of the undergraduate textbooks *Economics: Private and Public Choice* and *Contemporary Labor Economics*. He also co-authored the book *Pensions and Productivity*. With Barry Hirsch, he provides union data to researchers and the public through the web site www.unionstats.com.

DR. WILLIAM EVEN is a Professor of Economics in the Farmer School of Business at Miami University. He received his Ph.D. in economics from the University of Iowa in 1984. He is a research fellow with the Scripps Gerontology Center, the Employee Benefits Research Institute and the Institute for the Study of Labor. His recent research examines the effects of minimum wage laws, the Affordable Care Act, the effect of Greek affiliation on academic performance, and the relationship between skills and earnings among older workers. His research has been funded by several organizations including the U.S. Administration on Aging, the U.S. Department of Education, and the Employment Policies Institute. Even has published journal articles in a variety of outlets including the *Journal of Labor Economics*, the *Review of Economics and Statistics*, the *Journal of Human Resources*, *Economic Inquiry*, *Industrial and Labor Relations Review*, and *Industrial Relations*. His recent teaching experience includes courses in introductory microeconomics, labor economics, and undergraduate and graduate courses in econometrics.

Executive Summary

The crisis created by the spread of COVID-19 and subsequent shutdowns has severely affected America's employees and businesses, and state economies still face a long road to full recovery to pre-pandemic activity levels. As part of his pandemic relief plan, President Biden has proposed raising the federal minimum wage to \$15 and eliminating the tip credit—a plan that is estimated to cost over 2 million jobs nationwide.

The pandemic placed severe hardships on employers, slashing revenues and cash flows that resulted in layoffs and furloughs of over 20 million employees in the first three months of the outbreak in the United States.¹ For businesses in hospitality or restaurants where profit margins are already narrow, job losses and business closures were especially rampant, and recovery to pre-COVID levels remains slow.² Additional government restrictions on business reopening have continued to negatively affect businesses and employees: for establishments struggling to remain open, oftentimes cutting jobs or workers' hours has been one of the only solutions.³

In spite of mounting obstacles to staying in business, Biden's proposal to raise the federal minimum wage to \$15 and end the tip credit would create more hardship and losses for already-struggling businesses.

In this study, economists William Even and David Macpherson estimate the impacts of a similar policy by using a methodology based on assumptions developed by the nonpartisan Congressional Budget Office's assessment of the 2019 Raise the Wage Act. This methodology features updated assumptions that account for changes since 2019, including the coronavirus outbreak. The economists provide state- and demographic-level estimates of the employment impact of raising the federal minimum wage to \$15, comparing employment effects by age, sex, race and ethnicity, occupation type, and industry.

They estimate that if enacted, Biden's proposal would result in 2 million jobs lost

¹ <https://www.pewresearch.org/fact-tank/2020/06/11/unemployment-rose-higher-in-three-months-of-covid-19-than-it-did-in-two-years-of-the-great-recession/>

² <https://www.restaurantbusinessonline.com/financing/renewed-virus-surge-government-shut-downs-slow-restaurants-recovery> <https://www.restaurantdive.com/news/restaurants-will-see-transition-not-recovery-in-2021-experts-say/593195/>

³ <https://www.cnn.com/2020/07/15/small-businesses-rehire-staff-but-cut-pay-and-hours-survey-finds.html>

across the United States.⁴ This plan, which is estimated to cost employers across the country over \$99 billion, will cause massive job cuts in most states, particularly those at or near the current federal wage, including Pennsylvania (143,402 jobs lost), Ohio (108,312), Wisconsin (83,683), South Carolina (55,304), Utah (35,039), New Hampshire (13,179), West Virginia (12,331), and Delaware (10,044).

In this release, the economists also provide the estimated cost of a \$15 minimum wage to employers by state and by industry. Nationally, states' restaurant and bartending employees are projected to bear a large portion of the resulting job losses, and the economists estimate that Biden's proposal will cost the nation's restaurants and bars \$27 billion alone.

The impact on job losses in this study does not account for slowed employment growth, and in some cases job loss, in areas where the minimum wage has already been increased to \$15. In addition, the study only analyzes impacts through 2027, a period of time put forth by the Raise the Wage Act in 2019. Depending on the timeline for implementing a \$15 minimum wage and eliminating the use of the tip credit, the negative effects on businesses and their employees could be much greater.

Federal and state policymakers must take into account the impact of enacting a \$15 federal minimum wage: artificially raising labor costs for employers while they struggle to recover from the pandemic will cause states to lose hundreds of thousands of jobs.

⁴ This analysis of estimated employment impacts resulting from a federal minimum wage increase to \$15 was conducted before Florida passed their own \$15 state minimum wage. Therefore, actual job losses in Florida will result from the state policy, not from a national minimum wage raise as is estimated in this study.

The Movement to Raise the Federal Minimum Wage

Since its inception nearly a century ago, the inflation-adjusted value of the United States federal minimum wage has fluctuated from its lowest, \$4.14 in 1948, to its highest, \$10.28 in 1963.⁵ Since 1990 as the nominal federal minimum wage has risen rapidly from \$3.35 per hour, the inflation-adjusted value of minimum wage rates over the years has fluctuated around \$7.44.

In recent history, movements across the country and within individual states have pushed to nearly double the minimum wage to \$15 per hour, increase tipped wages at similar rates, and eliminate tip credits altogether. As of 2020, twenty-eight cities have enacted at least a \$15 minimum wage floor, including San Francisco and Seattle.⁶ In addition, seven states and the District of Columbia have implemented a \$15 minimum wage, most of which include phased increases to reach this new level over several years.⁷

Across the US, states have already enacted minimum wage hikes that supersede the current federal level, which currently stands at \$7.25. While each of the 50 states vary in terms of cost of living, business earnings growth, and inflation, more than half are set to raise their minimum wage levels by 2027. Of those slated to experience state-level minimum wage growth over the next six years, 17 states will raise levels by up to \$4, and nine will raise levels by more than \$4. For those states without legislation raising their minimum wage, six already have levels that are higher than the federal minimum.⁸ For a full list of already enacted minimum wage increases by 2027, see Appendix Table A1.

⁵ Adjusted to reflect 2019 dollar values. https://fred.stlouisfed.org/graph/?graph_id=529071

⁶ <https://www.littler.com/publication-press/publication/minimum-wage-tipped-and-exempt-employee-pay-2020-rates-only-update>

⁷ <https://news.bloomberglaw.com/daily-labor-report/states-with-15-minimum-wage-laws-doubled-this-year>

⁸ <https://news.bloomberglaw.com/daily-labor-report/states-with-15-minimum-wage-laws-doubled-this-year>

Currently scheduled minimum wage increases, by amount of increase.

Amount Increase 2019 - 2027	States Included
\$0	AL, DE, GA, HI, IA, ID, IN, KS, KY, LA, MS, NC, ND, NE, NH, OK, PA, RI, SC, TN, TX, UT, WI, WV, WY
\$0.01 - \$2.99	AK, AR, AZ, CO, FL, ME, MI, MN, MT, NY, OH, SD, VT
\$3 - \$3.99	DC, NV, OR, WA
\$4 - \$4.99	CA, MA, MD, MO, NM
\$5 - \$5.99	CT, NJ, VA
\$6 - \$6.99	IL
\$7 - \$7.99	none

The movement toward raising the federal minimum wage to \$15 has gained traction with elected officials at the federal level as well. Out of 27 Democratic candidates for president in the 2020 election, 21 expressed affinity for raising the federal minimum specifically to \$15, while two others also endorsed raising the federal minimum by a slightly lower amount.⁹ The party-nominated Biden-Harris campaign has expressed its view on the issue, building a \$15-per-hour minimum wage into the campaign’s platform.¹⁰ Advocates of raising the federal minimum wage have also endorsed the Democratic nominee as a champion for minimum-wage workers.¹¹

Facing potential ideological shifts in the Legislature and Oval Office in the upcoming November election, understanding the impacts of significantly raising the federal wage floor will be especially important to affected employees, businesses, and the greater economies subject to experience effects.

⁹ <https://www.politico.com/2020-election/candidates-views-on-the-issues/economy/minimum-wage/>

¹⁰ <https://joebiden.com/empowerworkers/#>

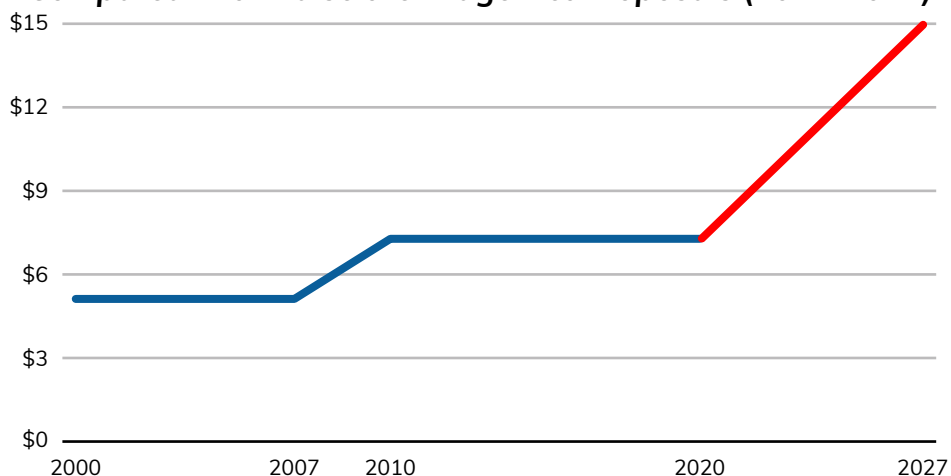
¹¹ <https://twitter.com/onefairwage/status/1305980256256323585>

Background on Raise the Wage Act (2019)

The most recent proposal that has come to fruition from nation-wide campaigns for increasing minimum wage, entitled the “Raise the Wage Act”, was passed by the U.S. House of Representatives in July 2019. If enacted, the legislation would raise the federal minimum, currently set to \$7.25, to \$8.40. Each year thereafter would see a \$1.10 increase to the minimum wage, until it reaches \$15. If this bill were to pass the Senate and be signed into law in 2021, this \$15 level would be reached by 2027. Subsequently, future annual increases to the federal minimum would be indexed to the median hourly wage for employees.¹² According to this proposal, tipped minimum wages would also increase incrementally to \$12.60-per-hour after six years, raising the federal minimum tipped wage by 491 percent. Once they reach this level, the tipped minimum would be subject to rise by \$1.50 annually until it reaches the regular minimum level, at which point the tip credit would be eliminated and the tipped minimum will equal the regular minimum.

This staggering rate of increase in the federal minimum wage is unprecedented, and would have significant impact as businesses and employees seek to adjust to these rapidly changing wage floors. From 2000 to the present, the federal minimum rose by 41 percent. If enacted, the Raise the Wage Act dictates that the federal minimum will rise by 107 percent from 2020 to 2027.

**Recent Increases in U.S. Federal Minimum Wage (2000-2020)
Compared with Raise the Wage Act Proposals (2021-2027).**



¹² <https://www.congress.gov/bill/116th-congress/house-bill/582/text>

Many states would be required to increase minimum wage levels beyond currently scheduled hikes if the federal minimum were raised to \$15 per hour. In addition, if the Raise the Wage Act is passed, a majority of states will be required to raise their minimum wage levels by \$5 or more by 2027, a significant shock to state economies and business owners in a relatively short period of time. For a full list of state minimum wage increases that would be required to comply with a federal \$15 minimum, view Appendix Table A2.

State-by-state minimum wage increases required by 2027 to comply with the Raise the Wage Act \$15 federal minimum.

Regular State Minimum Increase	States Included
\$0 - \$2.99	none
\$3 - \$3.99	CO, DC, NY, OR, WA
\$4 - \$4.99	AZ, CA, HI, MA, MD, ME, RI, VT
\$5 - \$5.99	AK, AR, CT, DE, MI, MN, NJ, SD
\$6 - \$6.99	FL, IL, MO, MT, NE, NV, OH, WV
\$7 - \$7.99	AL, GA, IA, ID, IN, KS, KY, LA, MS, NC, ND, NH, NM, OK, PA, SC, TN, TX, UT, VA, WI, WY*

*States in red denote a state that, aside from potential implementation of a \$15 federal minimum wage, do not have minimum wage increases currently slated through 2027.

The impact on tipped wages will be significant as well. If a federal minimum tipped wage is enacted to reach \$12.60 by 2027, thirty-three states will be required to raise their tipped wages by \$8 or more in the next six years. This period of steep wage growth for tipped workers would be followed by further rises, as the minimum tipped wage would continue to grow by \$1.50 annually until it matches the regular minimum wage. Such growth could be considered unsustainable for many businesses, localities, and states. To view a full list of state-by-state increases in the minimum tipped wage required to comply with a federal tipped minimum of \$12.60 by 2027, see Appendix Table A3.

State-by-state minimum tipped wage increases required by 2027 to comply with the Raise the Wage Act \$12.60 federal tipped minimum.

State Tipped Minimum Increase	States Included
\$0 - \$1.99	none
\$2.00 - \$3.99	AK, HI, MN, OR, WA
\$4.00 - \$5.99	AZ, CA, CO, MT, NV
\$6.00 - \$7.99	CT, FL, IL, ND, SD, VT
\$8.00 - \$9.99	AR, DC, IA, ID, MA, MD, MI, MO, NJ, NH, OH, PA, RI, WV
\$10.00+	AL, DE, GA, IN, KS, KY, LA, MS, NC, NE, NM, OK, SC, TN, TX, UT, VA, WI, WY

Economic Implications of a \$15 Federal Minimum Wage

The \$15 minimum does not have historical or economic precedent, and a national increase of this magnitude could have serious negative impacts on the nation and each individual state. Despite the fact that minimum wage policy intends to raise wages for the lowest earners in society, significant changes such as raising the federal minimum to \$15 may actually have negative effects on the poorest workers. In a 2018 study, David Neumark concludes:

“Research on the US fails to find evidence that minimum wages help the poor; they may actually increase the number of poor and low-income families.”¹³

Neumark notes that more than half of poor households have no workers, and also that some workers are poor because of low hours, not low wages. Increasing minimum wages to \$15 does not alleviate any of this type of poverty. In fact, new and traditional literature on the effects of minimum wage raises suggest that despite minimum wage-earners receiving higher wages due to these policies, the increased cost to business owners to employ such workers will result in reduced employment. As business owners experiencing limited profit margins and cash flow are faced with steep annual increases in employment costs, which do not necessarily match the rate of revenue increases, employers will be forced to cut costs by eliminating jobs altogether.

In a 2019 review of traditional and new literature surrounding the minimum wage issue, Jeffrey Clemens challenges a \$15 federal minimum wage and argues that such a policy would have severe effects on minimum wage employment opportunities, especially for low-skilled workers:

“This is particularly true when we consider regions where low housing and labor costs support the social and labor market integration of both immigrants and low-skilled native-born workers. More than doubling the minimum wage, from \$7.25 to \$15.00, risks radically altering the entry-level opportunities on which these individuals rely.”¹⁴

¹³ <https://wol.iza.org/articles/employment-effects-of-minimum-wages/long>

¹⁴ <https://www.cato.org/publications/policy-analysis/making-sense-minimum-wage-road-map-navigating-recent-research>

Evidence from areas that have previously enacted significant minimum wage raises also suggests a negative impact on employment. After Seattle's minimum wage was raised to \$13 in 2016, researchers at the University of Washington found that hours worked by low-wage employees were reduced, and total payroll in such jobs declined despite the hourly wage increase, due to the decrease in hours worked.¹⁵

In San Francisco, another city with a \$15 minimum wage, as the minimum wage increased over time, each \$1 increase correlated with a 14 percent increase in the probability that a median-rated restaurant would close, according to a study from Harvard Business School.¹⁶ The authors noted that there was no significant impact of minimum wage increases on 5-star restaurants, suggesting that businesses already struggling to bring in customers may be most overwhelmed by minimum wage increases and be forced to lay off employees, and ultimately close, in order to cut losses.

Published in the Federal Reserve Bank of San Francisco's *Economic Letter*, Neumark concludes that due to the inevitability of losing jobs as a result of raising minimum wage levels, policy makers must analyze the costs and benefits of enacting heightened minimum wage policies. In addition, Neumark notes that the impact of lost jobs due to minimum wage policy must be taken into account when assessing the effects of minimum wage on alleviating poverty, as some workers may experience increases in take-home pay at the cost of other workers' jobs.¹⁷

¹⁵ <https://www.nber.org/papers/w23532>

¹⁶ https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2951110

¹⁷ <https://www.frbsf.org/economic-research/files/el2015-37.pdf>

Analysis of Raising the Federal Minimum Wage to \$15

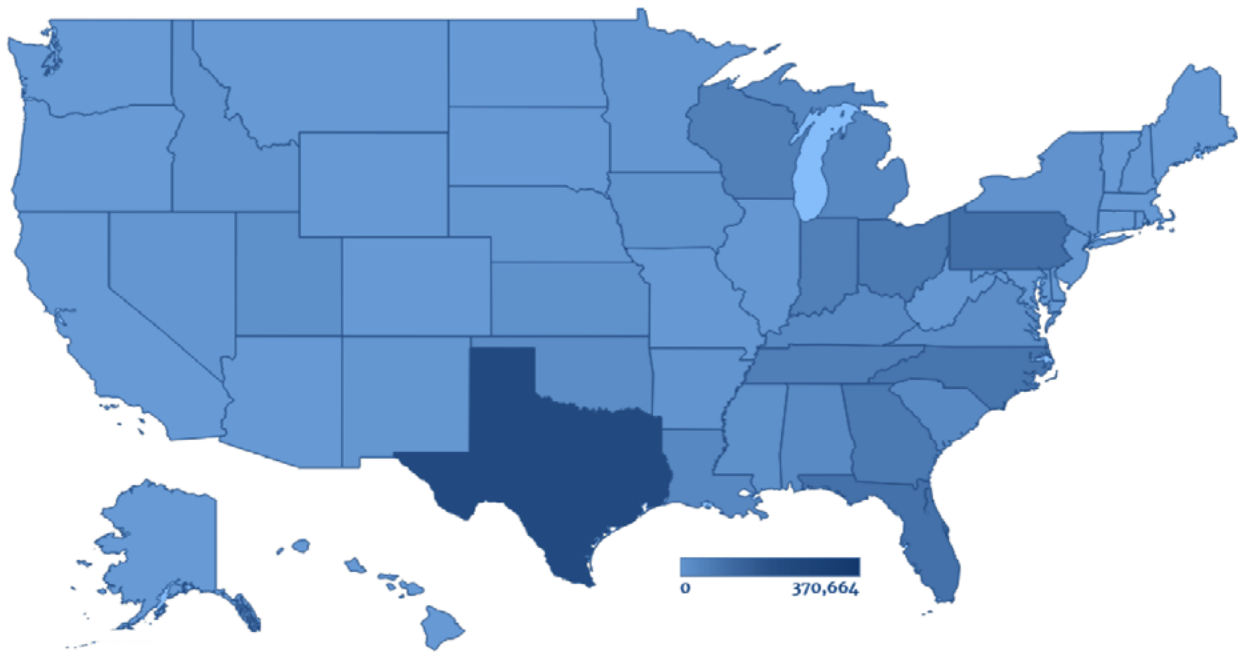
In 2019, the nonpartisan Congressional Budget Office (CBO) released a study analyzing the effects of raising the federal minimum wage from \$7.25 to \$15. Economists William Even and David Macpherson analyze the specific Raise the Wage Act proposal, which would not only raise the federal minimum to \$15, but also raise the tipped minimum wage to \$12.60 by 2027. (The full methodology can be found in the subsequent section.)

The economists use the same methodology as that in the 2019 CBO study, but update assumptions about the growth of future wages, employment, and prices to reflect CBO forecasts released in 2020. They analyze impacts for two cohorts of employees: tipped, where the proposed minimum by 2027 is \$12.60, and non-tipped, where the proposed minimum by 2027 is \$15.

Using CBO methodology and updated economic assumptions from the CBO, the economists estimate that out of 19 million workers that will be affected by a rising federal minimum wage, over 2 million jobs will be lost due to this policy. Half of the job losses will be concentrated in the Arts, Entertainment, and Recreation and Accommodation and Food Services industries, as 0.9 million jobs will be lost in restaurants and bars alone.

The following map presents total job losses projected for each state by 2027 due to raising the federal minimum wage to \$15. Texas projects to have the highest losses, totaling over 370,000 jobs lost by 2027. Pennsylvania, Florida, North Carolina, Ohio, and Georgia are all expected to see over 100,000 jobs lost in the next six years as well.

Projected Job Losses by 2027 due to the Raise the Wage Act



State	Number of Jobs Lost by 2027	State	Number of Jobs Lost by 2027
Texas	370,664	New York	30,839
Pennsylvania	143,402	Arkansas	22,057
Florida*	133,328	Idaho	19,801
North Carolina	121,581	Nebraska	18,639
Ohio	108,312	New Mexico	17,925
Georgia	106,427	Minnesota	15,409
Tennessee	84,554	Nevada	14,921
Wisconsin	83,683	New Hampshire	13,179
Indiana	83,517	West Virginia	12,331
Louisiana	60,644	New Jersey	11,825
Michigan	59,411	Illinois	10,688
South Carolina	55,304	Delaware	10,044
Kentucky	54,954	Maryland	8,723
Alabama	53,227	Missouri	8,010
Virginia	47,583	Montana	6,475
Oklahoma	44,983	South Dakota	5,817
Mississippi	36,161	Wyoming	5,798
Utah	35,039	Massachusetts	5,791
Kansas	34,425	North Dakota	4,672
Iowa	33,080	Arizona	4,157

State	Number of Jobs Lost by 2027	State	Number of Jobs Lost by 2027
Rhode Island	3,909	Connecticut	1,269
Hawaii	3,630	Dist. of Columbia	536
Colorado	3,408	California	0
Alaska	1,485	Washington	0
Vermont	1,425	Oregon	0
Maine	1,282		

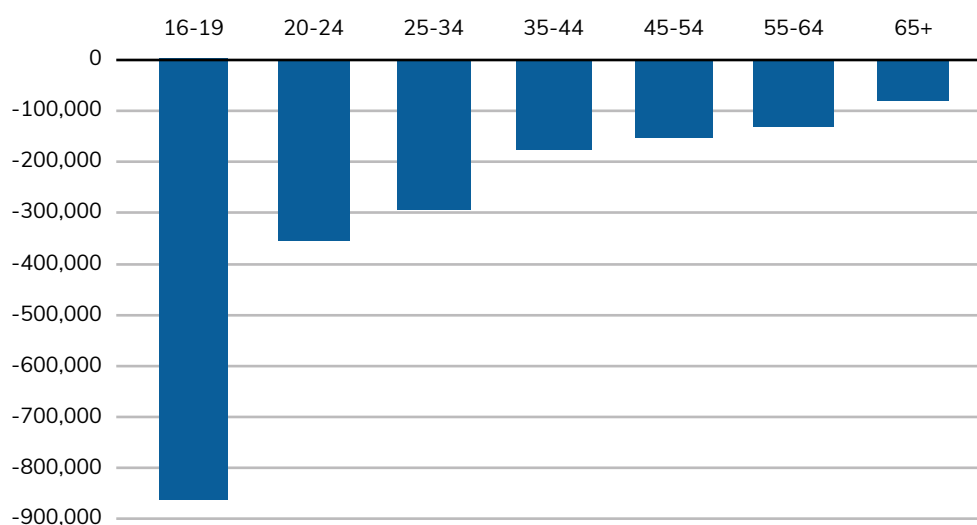
**Note: This analysis of the job impacts of a \$15 national minimum wage includes effects on Florida, which were estimated prior to the November passage of Amendment 2, a ballot measure to raise the state's own minimum wage to \$15 by 2026. The job loss estimated here is the projected result for a federally-binding wage increase where Florida's state level was lower. In a state-specific study, the economists estimated Amendment 2 would cost the state 158,000 jobs, due to the ballot measure language taking effect one year earlier than the national increase analysis, and Florida's annual indexing of its minimum wage prior to the new schedule.*

These projections account for future job losses if a federal \$15 minimum wage is enacted in 2021. However, these impacts, if realized, will add to losses already incurred due to areas that have already escalated minimum wage levels to \$15 or higher. This analysis will not capture the full impact of raising the federal minimum on employment in states that have already implemented phased plans to raise their minimum wages to \$15. States that have enacted plans to phase-in a \$15 minimum wage include California, New York, Illinois, Massachusetts, Connecticut, New Jersey, and Maryland, as well as the District of Columbia, which currently has a \$15 minimum wage.

In a study that particularly focuses on impacts in Florida, where increasing the state minimum to \$15 is on the ballot this November, the economists note the vulnerability of these projections: due to COVID-19 and other economic factors, a wider range of businesses and jobs may be affected by a rapidly rising federal minimum wage than even presented in this analysis.

By breaking down these losses demographically, the economists conclude that certain groups across the United States will be more severely affected by a national minimum wage hike. Workers from the 16 – 19 age group will be disproportionately affected in terms of job loss, accounting for 42 percent of projected job losses by 2027. The teenage category also claims the highest ratio of jobs lost per number of affected employees: over 32 percent of jobs affected by minimum wage hikes for 16-19 year olds will be lost. All age categories will experience job loss, however, with the 65 and over group projected to see nearly 75,000 lost jobs by 2027 due solely to the steadily rising national minimum wage.

Job loss distribution by age



Age Group	Affected by \$15 Minimum Wage	Job Loss for \$15 Minimum Wage	Percent of Jobs Affected to be Lost
16-19	2,629,345	855,292	32.5%
20-24	4,184,740	352,566	8.4%
25-34	3,970,502	288,514	7.3%
35-44	2,609,731	171,954	6.6%
45-54	2,423,640	147,398	6.1%
55-64	2,049,057	123,827	6.0%
65+	1,164,190	74,769	6.4%
Total	19,031,205	2,014,320	10.6%

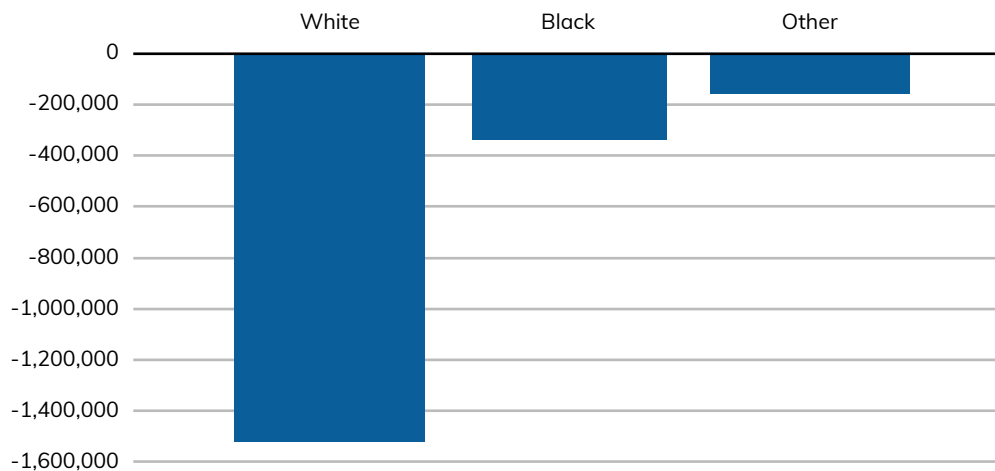
Women are also likely to experience significantly more job losses than men as a result of a \$15 federal minimum wage. Analysis by the economists shows that not only are 59 percent of minimum wage jobs held by women and slated to be affected by these wage increases, this means that 1.2 million jobs held by women will be lost by 2027 due to this policy, accounting for 61 percent of total losses.

Job loss distribution by sex

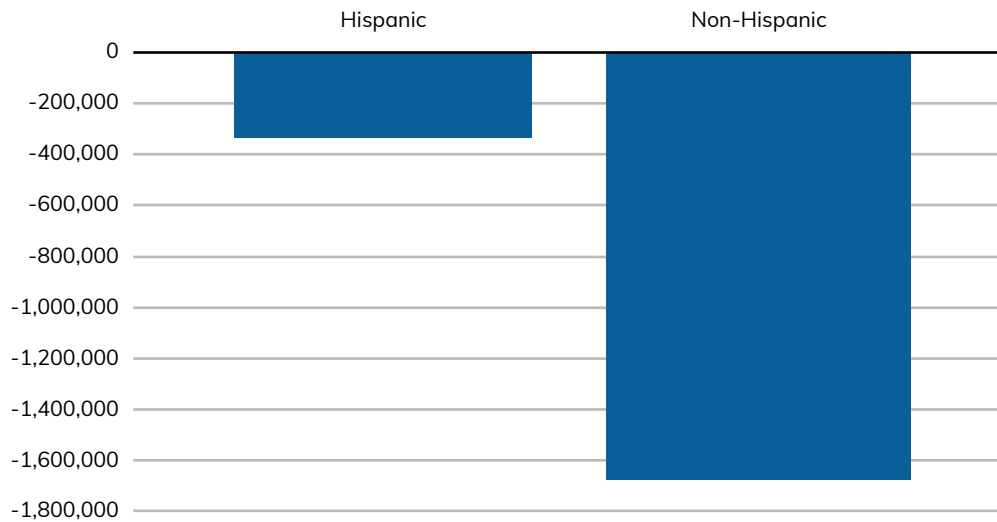
Sex	Affected by \$15 Minimum Wage	Job Loss for \$15 Minimum Wage	Percent of Jobs Affected to be Lost
Male	7,852,360	786,959	10.0%
Female	11,178,845	1,227,361	11.0%
Total	19,031,205	2,014,320	10.6%

Losses will manifest by race and ethnicity groups as well. While proposed minimum wage increases will affect jobs held largely by white and non-Hispanic workers, the percentage of losses through 2027 to affected jobs is significant and comparable across all groups. For example, the number of jobs lost for each group will account for 11 percent of affected jobs for white workers, 9 percent of affected jobs for black workers, and 11 percent of affected jobs for workers in other race categories. Nearly 10 percent of jobs affected for workers identifying as Hispanic will also be lost as a result of raising the federal minimum wage by 2027.

Job loss distribution by race and ethnicity



Race	Affected by \$15 Minimum Wage	Job Loss for \$15 Minimum Wage	Percent of Affected Jobs to be Lost
White	13,787,650	1,519,442	11.0%
Black	3,721,099	331,912	8.9%
Other	1,522,456	162,966	10.7%
Total	19,031,205	2,014,320	10.6%



Race	Affected by \$15 Minimum Wage	Job Loss for \$15 Minimum Wage	Percent of Affected Jobs to be Lost
Hispanic	3,643,232	348,298	9.6%
Non-Hispanic	15,387,973	1,666,022	10.8%
Total	19,031,205	2,014,320	10.6%

Tipped workers will also experience more vulnerability than non-tipped workers to raising the minimum wage to \$15. This is especially impactful, as tipped workers earn more than minimum wage due to their tips, and have resisted efforts to eliminate the tipped wage. Tipped employees are guaranteed by the Fair Labor Standards Act to receive compensation equivalent to the regular minimum wage in the event that tips do not put total wages at or above the minimum.¹⁸ According to data by the U.S. Census Bureau, the average hourly wage for a tipped restaurant employee is nearly \$14, with top earners making more than \$24 per hour.¹⁹ A 2016 Census Bureau study found that increasing the tipped minimum wage by 5 or 6 percent subsequently results in a decrease in tip income of similar magnitude, and employment for tipped employees decreases as the tipped minimum wage rate increases.²⁰ By raising the federal tipped minimum wage to \$12.60 by 2027, this represents anywhere from a 27 to 491 percent increase depending on the state's current level, which could have a severe impact on weekly earnings of tipped employees.

¹⁸ <https://webapps.dol.gov/elaws/faq/esa/flsa/002.htm#:~:text=Fair%20Labor%20Standards%20Act%20Advisor,-What%20is%20the&text=An%20employer%20of%20a%20tipped,%2430%20a%20month%20in%20tips>

¹⁹ <https://tippedwage.com/>

²⁰ <https://www.census.gov/content/dam/Census/library/working-papers/2016/adrm/carra-wp-2016-03.pdf>

Restaurant servers have spoken out against eliminating the tip credit due to the fact raising their wages to a federal minimum would reduce tips, and as a result their total compensation. This hike would ultimately would create increased labor costs and a reduced number of jobs in the affected industries. After originally eliminating the tip credit, Maine voters passed a referendum in 2017 to restore the state tipped wage after tipped workers testified that eliminating the tip credit resulted in lower compensation.²¹ Servers in New York and Washington, D.C. also rallied against the push to raise the tipped wage to the city minimum wage.²² As legislators in New Mexico introduced bills in favor of raising the regular and tipped minimum wage levels, a former server reflected:

“...Most servers and bartenders earn well over the minimum wage. Many of us see ourselves as professional, commission-based salespeople. A minimum wage without a tip credit would effectively turn career servers — the most experienced of whom can earn up to \$24 an hour or more — into entry-level employees. If legislators had consulted with tipped workers, they would learn that we have no appetite for one unfair wage.”²³

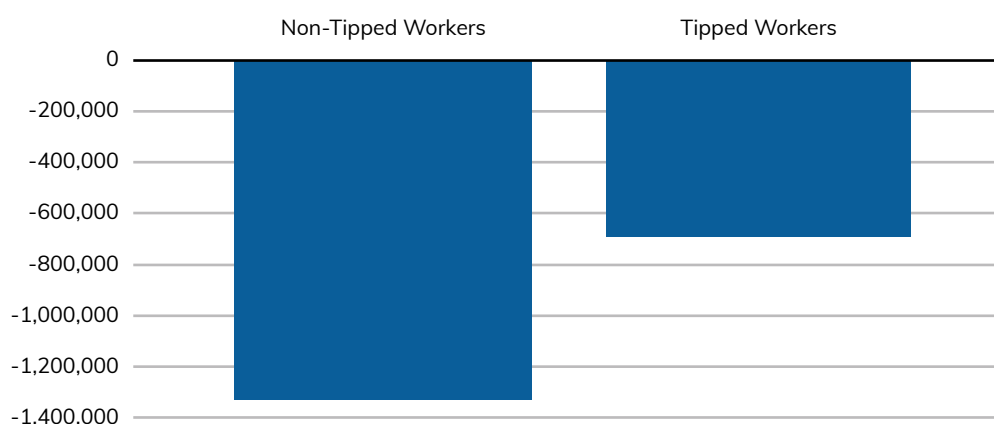
While 1.3 million non-tipped workers and 693,000 tipped workers will experience job loss by 2027, the number of jobs lost for tipped workers represents a much higher proportion of affected jobs. Nearly 31 percent of tipped workers affected by this rise in minimum wage will lose their jobs by 2027, while only 8 percent of non-tipped workers affected will lose their jobs. Raising the tipped minimum by this magnitude would be an especially cruel burden on tipped employees, as these projected earnings and employment losses would be the result of a policy that such employees have actively resisted. This also does not account for subsequent raises in the tipped minimum wage past 2027, which will continue to rise by \$1.50 annually until it reaches the same level as the non-tipped minimum, eliminating the tip credit. Such further increases may continue to add to the job loss experienced by tipped workers across the country.

²¹ <https://www.pressherald.com/2018/01/11/maine-voices-after-success-in-getting-tip-credit-restored-in-maine-its-time-to-go-national/>

²² <https://www.facebook.com/groups/1816776225063871/> <https://www.washingtonblade.com/2018/05/10/opinion-vote-no-initiative-77/>

²³ https://www.santafenewmexican.com/opinion/my_view/servers-do-not-want-a-tipped-minimum-wage-increase/article_5564d648-58f9-54e4-aa75-a6487e9577db.html

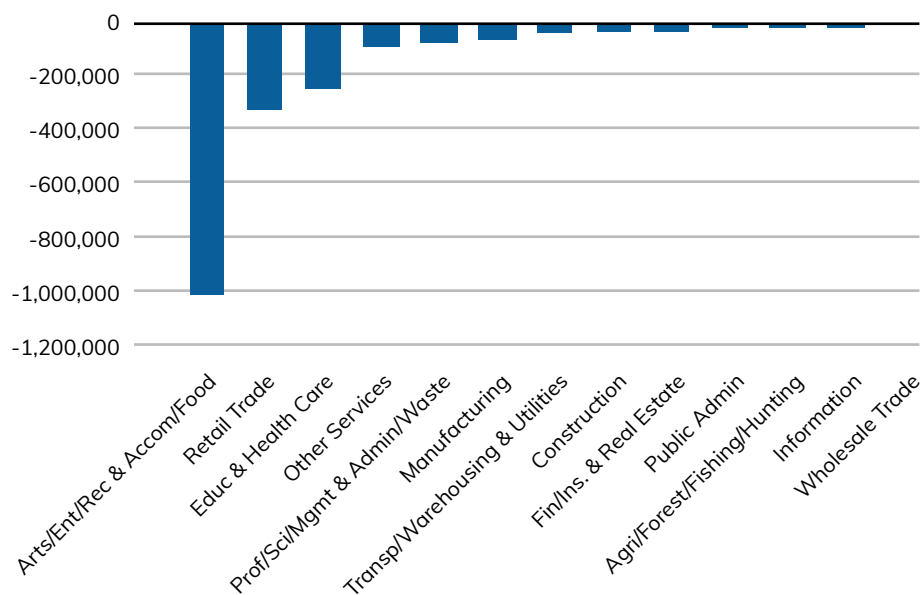
Job loss distribution by occupation type



Tipped workers	Affected by \$15 Minimum Wage	Job Loss for \$15 Minimum Wage	Percent of Jobs Affected to be Lost
Non-Tipped workers	16,792,481	1,320,779	7.9%
Tipped workers	2,238,724	693,541	31.0%
Total	19,031,205	2,014,320	10.6%

The disparate impacts of raising the federal minimum wage to \$15 are most clearly visible across industries. Due to the rising regular minimum and tipped minimum at staggering rates according to the Raise the Wage Act proposal, job losses are heavily concentrated in the Arts, Entertainment, and Recreation as well as Accommodation and Food Services industrial sectors. Over 1 million jobs in these two sectors will be lost by 2027, representing nearly 50 percent of total job losses that will be experienced as a result of this policy. Restaurants and bars alone are projected to lose over 899,000 jobs, representing 45 percent of the total projected job loss.

Job loss distribution by selected industrial sectors



Sector	Affected by \$15 Minimum Wage	Job Loss for \$15 Minimum Wage	Percent of Affected Jobs to be Lost
Agriculture, Forestry, Fishing, and Hunting, and Mining	285,472	21,407	7.5%
Construction	629,547	36,766	5.8%
Manufacturing	1,206,082	65,151	5.4%
Wholesale Trade	259,456	15,159	5.8%
Retail Trade	3,810,393	330,381	8.7%
Transportation and Warehousing, and Utilities	671,201	43,719	6.5%
Information	203,196	18,583	9.1%
Finance and Insurance, and Real Estate and Rental and Leasing	535,837	29,582	5.5%
Professional, Scientific, and Management, and Administrative and Waste Management Services	1,309,085	78,756	6.0%
Educational Services, and Health Care and Social Assistance	3,777,060	248,889	6.6%
Arts, Entertainment, and Recreation, and Accommodation and Food Services	4,776,818	1,005,843	21.1%
*Restaurants and Bars	3,792,966	899,095	23.7%
Other Services, Except Public Administration	1,163,653	98,427	8.5%
Public Administration	403,405	21,656	5.4%
All industries	19,031,205	2,014,320	10.6%

*Note: Restaurants are a subset of the Arts, Entertainment, Recreation, Accommodation, and Food Services category

Technical Analysis

Dr. William E. Even
Dr. David Macpherson

This study uses methodology similar to that employed by the Congressional Budget Office (CBO) in their 2019 analysis of the consequences of an increase in the federal minimum wage to examine the impact of proposed legislation that would increase the hourly minimum wage to \$15.00.²⁴ We investigate the impact of proposed legislation that would increase the federal hourly minimum wage to \$15.00 and the hourly tipped minimum wage to \$12.60 by 2027.²⁵

Below, we describe the data and methodology used to estimate the number of people affected and the job loss. While it was not possible to obtain all of the specific assumptions and methods used by the CBO, the methods used here are consistent with the CBO methodology and their assumptions about the impact of a minimum wage hike on job loss. We update the original CBO methodology by using the most recent CBO forecasts of future economic conditions that were released in July 2020.²⁶

The data are from the Outgoing Rotation Groups of the 2017-2019 Current Population Surveys (CPS). Unlike the CBO, we use three years of CPS data to improve the sample size for providing estimates of the employment effects at the state level. To combine the data, we adjust the earnings weights in 2017 and 2018 so that the sum of the earnings weights in those years matches that for 2019.

For workers reporting they are paid by the hour, we use the reported hourly wage. For workers who do not report an hourly wage, we estimate their hourly wage by dividing their reported usual

²⁴ Congressional Budget Office. “The Effects on Employment and Family Income of Increasing the Federal Minimum Wage.” July 2019.

²⁵ The analysis assumes the Raise the Wage Act would be passed in January 2021. In that case, the minimum wage would be \$15.00 per hour and the hourly tipped minimum wage would be \$12.60 in 2027 (<https://www.congress.gov/bill/116th-congress/house-bill/582/text>). The hourly tipped minimum would increase by \$1.50 per year after 2027 until it equals the hourly minimum wage.

²⁶ See Congressional Budget Office, “An Update to the Economic Outlook: 2020 to 2030.” July 2020. Available at www.cbo.gov/publication/56442/. The earlier CBO analysis used forecasts released in January 2019, which had higher wage growth, inflation, and employment growth projections than those released in July 2020.

weekly earnings by their usual weekly hours.²⁷ We merge the data on hourly earnings to data on the minimum wage and the tipped minimum wage for 2017-2019 by state and month.²⁸

For each worker in the data, we compare their current hourly wage to the worker's applicable minimum in the relevant month. Following the CBO methodology, if an untipped worker hourly wage is more than \$.25 below the state's minimum wage minus \$0.25, we assume the person is not covered by the Fair Labor Standards Act (FLSA).²⁹ For tipped workers, we compare their hourly wage rate to the state's tipped minimum wage and consider them not covered by FLSA if their hourly wage is more than \$.25 below the state's tipped minimum wage.³⁰ Like the CBO, we drop all workers who are judged to be not covered by the FLSA in our estimation of the effects of a change in the federal minimum wage law.

To forecast the impact of a minimum wage law that becomes fully effective in 2027, we assume that employment will increase at 0.126% per year between 2019 and 2027 based on July 2020 CBO forecasts.³¹ Also, we assume that nominal wages would grow by 2.6% per year based on CBO

²⁷ If a worker reports variable hours, we use a regression to estimate hours worked and divide weekly earnings by the prediction of their weekly hours. The regression includes controls for female and year interacted with hours worked last week, full-time status, education (5 categories), age, age squared, age cubed, age quartic, and race/ethnic status (3 categories). In addition, the model controls for female, year, and full-time status interacted with one-digit broad occupation. For tipped workers without a reported hourly wage, we use a regression to impute their hourly wage. The regression controls for occupation, gender, age, and age squared.

²⁸ Like the CBO, our analysis does not adjust for city-specific minimum wage laws.

²⁹ For example, if a state's minimum wage is \$7.25, non-tipped workers less than \$7.00 per hour are considered not covered by FLSA, and if a state's tipped minimum wage is \$2.13, tipped workers earnings less than \$1.88 per hour (excluding tips) are considered not covered. These adjustments are designed to address the possibility that respondents round answers when reporting hourly earnings. The CBO methodology compared tipped worker's wage to \$2.00 to account for rounding which is quite sensible given the federal tipped minimum of \$2.00. However, since many states have tipped minimums different than \$2.13 and we found evidence of heaping at the nearest quarter (e.g. if the tipped minimum is \$5.67 there is heaping at \$5.50). Hence, we allow a person's hourly wage to be up to \$.25 below the state's tipped minimum and still consider the worker covered by the law.

³⁰ Following the CBO, we define tipped workers as anyone who reports one of the following occupations: massage therapists; bartenders; waiters and waitresses; hosts and hostesses, restaurant, lounge, and coffee shop; barbers; hairdressers, hairstylists, and cosmetologists; miscellaneous personal appearance workers; personal care and service workers, all other; taxi drivers and chauffeurs; and Food preparation and serving related workers, all other including dining room and cafeteria attendants and bartender helpers in the other amusement, gambling, and recreation industries or traveler accommodation industry or restaurants and other food services industries.

³¹ The CBO report allowed for employment and earnings growth rates that varied by age, sex, education and race. We were unable to obtain the assumed growth rates used by CBO and chose to use the same growth rates across sub-groups of the population.

projections of earnings growth between 2019 and 2027.³² If a worker's wage (or tipped wage for tipped workers) in 2027 is below the state-specific minimum wage forecast for 2027, we boost the estimate to match the level required by state law.

To estimate the number of workers affected by a minimum wage in 2027, we perform separate calculations for tipped and non-tipped workers. For non-tipped workers, we estimate the number of people with a predicted wage in 2027 lying between the forecast of the state-specific minimum wage for 2027 and the proposed 2027 minimum of \$15.00. For tipped workers, we estimate the number of people whose cash wage (i.e., the hourly wage paid by the employer, excluding tips) is between the state's forecasted tipped minimum and the proposed tipped minimum wage in 2027 (\$12.60)

After estimating which workers are affected by the proposed minimum or tipped minimum wage, we estimate the increase in the hourly cost to the employer. For non-tipped workers, the increase in the cost is the difference between the proposed \$15.00 minimum wage and the wage we predict for the worker in 2027. For tipped workers, the increase in cost is estimated as the difference between the proposed tipped minimum wage of \$12.60 and the worker's projected cash wage.

The estimated job loss uses elasticities identical to those used by the CBO. For the \$15.00 minimum wage, the elasticity for affected teenagers (workers aged 16-19) is -0.822, and for affected adults, the elasticity is -0.266.³³ The estimated job loss is calculated by summing across all affected workers the product of the relevant elasticity, the percentage increase in the hourly cost to employers resulting from the proposed change, and the worker's earnings weights adjusted to reflect employment in 2027.

Our analysis provides estimates of the number of workers affected and the job loss associated with the proposed minimum wage increase. The forecast is that in 2027, there will be 138.2 million workers covered by the FLSA. Of these workers, 19.0 million (13.8% of covered workers) will be affected by the minimum wage hike. We also estimate that there will be 2,014,320 jobs lost as a result of the minimum wage hike. For the Arts, Entertainment, and Recreation, and Accommodation and Food Services industry, the job loss is 1.0 million. In the sub-sector of restaurants and bars, the job loss is 0.9 million or about 45% of the total job loss.

The analysis also provides breakdowns of the groups of affected workers in each state by age, sex, race, tipped versus non-tipped status, and industry.

³² The assumed earnings and employment growth are based on CBO forecasts available in Congressional Budget Office, An Update to the Budget and Economic Outlook, August 2019. https://www.cbo.gov/system/files/2019-08/55551-CBO-outlook-update_0.pdf

³³ The CBO derives the long-run minimum wage elasticities by multiplying the CBO estimate of the short-run elasticities (-0.1475 for adults and -0.4550 for teens) times 1.5 (-0.2213 for adults and -0.6825 for teens). These long-run elasticities are then scaled upward to account for larger increases in the minimum wage and to account for the fact that the federal minimum wage would be indexed to inflation. The elasticities are scaled slightly downward to account for three -year adjustment period. For details, see <https://www.cbo.gov/system/files/2019-11/55681-cbo-code-for-employment-elasticities.zip>.

Appendix

Table A1. Currently scheduled minimum wage increases through 2027, by state.

State	2019 Minimum	Current 2027 Minimum	State	2019 Minimum	Current 2027 Minimum
Alabama	\$7.25	\$7.25	Montana	\$8.50	\$9.83
Alaska	\$9.89	\$11.58	Nebraska	\$9.00	\$9.00
Arizona	\$11.00	\$13.64	Nevada	\$8.25	\$12.00
Arkansas	\$9.25	\$11.00	New Hampshire	\$7.25	\$7.25
California	\$12.00	\$16.68	New Jersey	\$10.00	\$15.00
Colorado	\$11.10	\$13.64	New Mexico	\$7.50	\$12.00
Connecticut	\$11.00	\$16.65	New York	\$11.10	\$12.50
Delaware	\$9.25	\$9.25	North Carolina	\$7.25	\$7.25
District of Columbia	\$14.00	\$17.05	North Dakota	\$7.25	\$7.25
Florida	\$8.46	\$9.73	Ohio	\$8.55	\$9.89
Georgia	\$7.25	\$7.25	Oklahoma	\$7.25	\$7.25
Hawaii	\$10.10	\$10.10	Oregon	\$11.25	\$15.02
Idaho	\$7.25	\$7.25	Pennsylvania	\$7.25	\$7.25
Illinois	\$8.25	\$15.00	Rhode Island	\$10.50	\$10.50
Indiana	\$7.25	\$7.25	South Carolina	\$7.25	\$7.25
Iowa	\$7.25	\$7.25	South Dakota	\$9.10	\$10.57
Kansas	\$7.25	\$7.25	Tennessee	\$7.25	\$7.25
Kentucky	\$7.25	\$7.25	Texas	\$7.25	\$7.25
Louisiana	\$7.25	\$7.25	Utah	\$7.25	\$7.25
Maine	\$11.00	\$13.64	Vermont	\$10.78	\$12.45
Maryland	\$10.10	\$15.00	Virginia	\$7.25	\$12.55
Massachusetts	\$12.00	\$16.38	Washington	\$12.00	\$15.34
Michigan	\$9.45	\$11.29	West Virginia	\$8.75	\$8.75
Minnesota	\$9.86	\$11.35	Wisconsin	\$7.25	\$7.25
Mississippi	\$7.25	\$7.25	Wyoming	\$7.25	\$7.25
Missouri	\$8.60	\$13.10			

Table A2. State-by-state minimum wage increases required by 2027 to comply with the Raise the Wage Act \$15 federal minimum.

State	2019 Minimum	New Minimum (\$15 or higher)	Dollar Increase 2019-2027
Alabama	\$7.25	\$15.00	\$7.75
Alaska	\$9.89	\$15.00	\$5.11
Arizona	\$11.00	\$15.00	\$4.00
Arkansas	\$9.25	\$15.00	\$5.75
California	\$12.00	\$16.68	\$4.68
Colorado	\$11.10	\$15.00	\$3.90
Connecticut	\$11.00	\$16.65	\$5.65
Delaware	\$9.25	\$15.00	\$5.75
District of Columbia	\$14.00	\$17.05	\$3.05
Florida	\$8.46	\$15.00	\$6.54
Georgia	\$7.25	\$15.00	\$7.75
Hawaii	\$10.10	\$15.00	\$4.90
Idaho	\$7.25	\$15.00	\$7.75
Illinois	\$8.25	\$15.00	\$6.75
Indiana	\$7.25	\$15.00	\$7.75
Iowa	\$7.25	\$15.00	\$7.75
Kansas	\$7.25	\$15.00	\$7.75
Kentucky	\$7.25	\$15.00	\$7.75
Louisiana	\$7.25	\$15.00	\$7.75
Maine	\$11.00	\$15.00	\$4.00
Maryland	\$10.10	\$15.00	\$4.90
Massachusetts	\$12.00	\$16.38	\$4.38
Michigan	\$9.45	\$15.00	\$5.55
Minnesota	\$9.86	\$15.00	\$5.14
Mississippi	\$7.25	\$15.00	\$7.75
Missouri	\$8.60	\$15.00	\$6.40
Montana	\$8.50	\$15.00	\$6.50
Nebraska	\$9.00	\$15.00	\$6.00
Nevada	\$8.25	\$15.00	\$6.75
New Hampshire	\$7.25	\$15.00	\$7.75
New Jersey	\$10.00	\$15.00	\$5.00
New Mexico	\$7.50	\$15.00	\$7.50
New York	\$11.10	\$15.00	\$3.90
North Carolina	\$7.25	\$15.00	\$7.75

State	2019 Minimum	New Minimum (\$15 or higher)	Dollar Increase 2019-2027
North Dakota	\$7.25	\$15.00	\$7.75
Ohio	\$8.55	\$15.00	\$6.45
Oklahoma	\$7.25	\$15.00	\$7.75
Oregon	\$11.25	\$15.02	\$3.77
Pennsylvania	\$7.25	\$15.00	\$7.75
Rhode Island	\$10.50	\$15.00	\$4.50
South Carolina	\$7.25	\$15.00	\$7.75
South Dakota	\$9.10	\$15.00	\$5.90
Tennessee	\$7.25	\$15.00	\$7.75
Texas	\$7.25	\$15.00	\$7.75
Utah	\$7.25	\$15.00	\$7.75
Vermont	\$10.78	\$15.00	\$4.22
Virginia	\$7.25	\$15.00	\$7.75
Washington	\$12.00	\$15.34	\$3.34
West Virginia	\$8.75	\$15.00	\$6.25
Wisconsin	\$7.25	\$15.00	\$7.75
Wyoming	\$7.25	\$15.00	\$7.75

Table A3. State-by-state minimum tipped wage increases required by 2027 to comply with the Raise the Wage Act \$12.60 federal tipped minimum.

State	Tipped Minimum	Tipped Minimum	Increase by 2027
Alabama	\$2.13	\$12.60	\$10.47
Alaska	\$9.89	\$12.60	\$2.71
Arizona	\$8.00	\$12.60	\$4.60
Arkansas	\$2.63	\$12.60	\$9.97
California	\$12.00	\$16.68	\$4.68
Colorado	\$8.08	\$12.60	\$4.52
Connecticut	\$6.38	\$12.60	\$6.22
Delaware	\$2.23	\$12.60	\$10.37
District of Columbia	\$4.45	\$12.60	\$8.15
Florida	\$5.44	\$12.60	\$7.16
Georgia	\$2.13	\$12.60	\$10.47
Hawaii	\$9.35	\$12.60	\$3.25
Idaho	\$3.35	\$12.60	\$9.25
Illinois	\$4.95	\$12.60	\$7.65
Indiana	\$2.13	\$12.60	\$10.47
Iowa	\$4.35	\$12.60	\$8.25
Kansas	\$2.13	\$12.60	\$10.47
Kentucky	\$2.13	\$12.60	\$10.47
Louisiana	\$2.13	\$12.60	\$10.47
Maine	\$5.50	\$12.60	\$7.10
Maryland	\$3.63	\$12.60	\$8.97
Massachusetts	\$4.35	\$12.60	\$8.25
Michigan	\$3.59	\$12.60	\$9.01
Minnesota	\$9.86	\$12.60	\$2.74
Mississippi	\$2.13	\$12.60	\$10.47
Missouri	\$4.30	\$12.60	\$8.30
Montana	\$8.50	\$12.60	\$4.10
Nebraska	\$2.13	\$12.60	\$10.47
Nevada	\$8.25	\$12.60	\$4.35
New Hampshire	\$3.26	\$12.60	\$9.34
New Jersey	\$2.63	\$12.60	\$9.97
New Mexico	\$2.13	\$12.60	\$10.47
New York	\$7.50	\$12.60	\$5.10
North Carolina	\$2.13	\$12.60	\$10.47
North Dakota	\$4.86	\$12.60	\$7.74

State	Tipped Minimum	Tipped Minimum	Increase by 2027
Ohio	\$4.30	\$12.60	\$8.30
Oklahoma	\$2.13	\$12.60	\$10.47
Oregon	\$11.25	\$15.02	\$3.77
Pennsylvania	\$2.83	\$12.60	\$9.77
Rhode Island	\$3.89	\$12.60	\$8.71
South Carolina	\$2.13	\$12.60	\$10.47
South Dakota	\$4.55	\$12.60	\$8.05
Tennessee	\$2.13	\$12.60	\$10.47
Texas	\$2.13	\$12.60	\$10.47
Utah	\$2.13	\$12.60	\$10.47
Vermont	\$5.39	\$12.60	\$7.21
Virginia	\$2.13	\$12.60	\$10.47
Washington	\$12.00	\$15.34	\$3.34
West Virginia	\$2.62	\$12.60	\$9.98
Wisconsin	\$2.33	\$12.60	\$10.27
Wyoming	\$2.13	\$12.60	\$10.47

**Table A4. Additional Employer Costs by Industry
Due to \$15 Federal Minimum Wage, US.**

Industry	Employees Affected	Employer Cost
Restaurants and other food services	4,235,435	\$27,304,726,564
Elementary and secondary schools	908,107	\$3,969,136,035
Grocery stores	934,129	\$3,767,058,121
Construction	691,264	\$2,987,765,435
Other amusement, gambling, and recreation industries	531,556	\$2,290,270,293

Table A5. Additional Employer Costs Due to Raising the Federal Minimum Wage to \$15, By State.

State	Number of Employees Affected	Increased Employer Costs
United States	21,086,103	\$99,002,520,005
Alaska	50,065	\$181,257,601
Alabama	484,085	\$2,608,000,753
Arkansas	324,786	\$1,456,232,360
Arizona	221,645	\$401,608,797
California	0	\$0
Colorado	177,551	\$472,175,732
Connecticut	24,576	\$117,703,696
District of Columbia	6,037	\$51,398,779
Delaware	91,367	\$414,582,152
Florida*	1,901,198	\$8,157,425,277
Georgia	1,051,289	\$5,407,657,597
Hawaii	123,706	\$505,343,360
Iowa	347,277	\$1,549,220,332
Idaho	190,398	\$932,685,313
Illinois	143,362	\$899,284,914
Indiana	694,653	\$3,348,941,053
Kansas	283,686	\$1,397,799,985
Kentucky	450,540	\$2,336,349,913
Louisiana	489,957	\$2,858,072,682
Massachusetts	77,893	\$485,124,905
Maryland	64,706	\$500,254,755
Maine	42,537	\$90,276,192
Michigan	777,826	\$3,058,541,538
Minnesota	432,512	\$1,348,103,167
Missouri	224,566	\$541,695,614
Mississippi	325,986	\$1,953,008,405
Montana	89,997	\$336,089,806
North Carolina	1,040,186	\$5,419,867,771
North Dakota	60,249	\$268,601,374
Nebraska	187,504	\$767,098,600
New Hampshire	117,039	\$531,898,081
New Jersey	78,870	\$542,152,059
New Mexico	221,766	\$966,421,688
Nevada	311,806	\$1,149,308,726

New York	1,508,162	\$5,069,154,481
Ohio	1,100,005	\$4,722,008,279
Oklahoma	376,960	\$2,060,690,067
Oregon	0	\$0
Pennsylvania	1,219,929	\$5,878,547,994
Rhode Island	86,119	\$333,463,135
South Carolina	468,266	\$2,575,532,137
South Dakota	71,196	\$252,133,723
Tennessee	674,699	\$3,603,582,230
Texas	2,951,376	\$16,809,621,765
Utah	300,643	\$1,295,802,031
Virginia	374,380	\$1,494,064,225
Vermont	50,325	\$158,172,154
Washington	0	\$0
Wisconsin	562,620	\$2,574,736,875
West Virginia	181,145	\$869,982,213
Wyoming	50,657	\$250,845,714

**This analysis of estimated employment impacts resulting from a federal minimum wage increase to \$15 was conducted before Florida passed their own \$15 state minimum wage. Therefore, actual cost to employers in Florida will result from the state policy, not from a national minimum wage raise as is estimated in this study.*

Employment Policies

INSTITUTE

