MISSOURI STATE AUDITOR'S OFFICE
FISCAL NOTE (18-080)

Subject

Initiative petition from Richard Von Glahn regarding a proposed amendment to Chapter 290 of the Revised Statutes of Missouri. (Received December 6, 2016)

Date

December 22, 2016

Description

This proposal would amend Chapter 290 of the Revised Statutes of Missouri.

The amendment is to be voted on in November 2018.

Public comments and other input

The State Auditor's office requested input from the **Attorney General's office,** the **Department of Agriculture,** the **Department of Economic Development,** the **Department of Elementary and Secondary Education,** the **Department of Higher Education,** the **Department of Health and Senior Services,** the **Department of Insurance, Financial Institutions and Professional Registration,** the **Department of Mental Health,** the **Department of Natural Resources,** the **Department of Corrections,** the **Department of Labor and Industrial Relations,** the **Department of Revenue,** the **Department of Public Safety,** the **Department of Social Services,** the **Governor's office,** the **Missouri House of Representatives,** the **Department of Conservation,** the **Department of Transportation,** the **Office of Administration,** the **Office of State Courts Administrator,** the **Missouri Senate,** the **Secretary of State's office,** the **Office of the State Public Defender,** the **State Treasurer's office, Adair County, Boone County, Callaway County, Cass County, Clay County, Cole County, Greene County, Jackson County, Jasper County, St. Charles County, St. Louis County, Taney County,** the **City of Cape Girardeau,** the **City of Columbia,** the **City of Jefferson,** the **City of Joplin,** the **City of Kansas City,** the **City of Kirksville,** the **City of Mexico,** the **City of Raymore,** the **City of St. Joseph,** the **City of St. Louis,** the **City of Springfield,** the **City of Union,** the **City of Wentzville,** the **City of West Plains, Cape Girardeau 63 School District, Hannibal 60 School District, State Technical College of Missouri, Metropolitan Community College, University of Missouri, St. Louis Community College, University of Central Missouri, Harris-Stowe State University, Lincoln University, Missouri State University, Missouri Southern State University, Missouri Western State University, Northwest Missouri State University, Southeast Missouri State University,** and **Truman State University**.

Lara Granich and **Missouri Jobs with Justice Voter Action** provided information as proponents of the proposal to the State Auditor's office.

Robert Bonney, Chief Executive Officer of the Missouri Restaurant Association provided information as an opponent of the proposal to the State Auditor's office.

Assumptions

Officials from the **Attorney General's office** indicated they assume that any potential costs arising from the adoption of this proposal can be absorbed with existing resources.

Officials from the **Department of Agriculture** indicated no fiscal impact on their department.

Officials from the **Department of Economic Development** indicated they will defer to the Office of Administration regarding any costs associated with this initiative petition.

Officials from the **Department of Higher Education** indicated this initiative petition would not have a fiscal impact on their department because public employers are exempt.

Officials from the **Department of Health and Senior Services** indicated this proposal would have no direct fiscal impact on their department since government employees are exempt from its provisions. However, employees of certain entities that receive funding through the department's budget would be impacted, such as Medicaid Home and Community Based Services vendors/providers and Area Agencies on Aging.

Officials from the **Department of Insurance, Financial Institutions and Professional Registration** indicated this petition does not apply to public employers with respect to its employees. Therefore, this petition, if passed, would have no cost or savings to their department.

Officials from the **Department of Mental Health** indicated this proposal creates no direct obligations or requirements to their department that would result in a fiscal impact.

Officials from the **Department of Natural Resources** indicated it appears Sections 290.502.4 and 290.512.3 would exclude public employers from the provisions of 290.502 subsection (3) and 290.512 subsection (2). They are a part of the definition of public employers. Therefore they assume there would be no direct fiscal impact from this proposal.

Officials from the **Department of Corrections** indicated they defer to the Office of Administration.

Officials from the **Department of Labor and Industrial Relations** indicated no fiscal impact on their department.

Officials from the **Department of Revenue** indicated this petition will have no fiscal impact on their department. They defer to the Office of Administration - Budget and

Planning Division for a statewide response on how this petition may impact state revenues.

Officials from the **Department of Public Safety** indicated they see no fiscal impact due to this initiative petition.

Officials from the **Department of Social Services** indicated no fiscal impact on their department. They defer to the Office of Administration for response to this fiscal note request.

Officials from the **Governor's office** indicated there should be no added cost or savings to their office.

Officials from the **Missouri House of Representatives** indicated no fiscal impact.

Officials from the **Department of Conservation** indicated that no adverse fiscal impact to their department would be expected as a result of this proposal.

Officials from the **Department of Transportation** indicated no fiscal impact.

Officials from the **Office of Administration** indicated this proposal amends Sections 290.502, 290.512, 290.527, RSMo and adds Section 290.529, RSMo.

Section 290.502, RSMo, increases the minimum wage to $9.00 per hour, beginning January 1, 2019 and by another $1.00 per hour each year until it reaches $14.00 per hour beginning January 1, 2024. Thereafter, the minimum wage will be adjusted annually based on the increase/decrease in the cost of living.

Section 290.512, RSMo, increases the base salary for tipped employees. Effective January 1, 2019, employers must pay at least 51% of the minimum wage rate to tipped employees. Each year thereafter the rate increases until January 1, 2024 when tipped employees should be paid 60% of the minimum wage as established in Section 290.502, RSMo.

The proposal exempts public employers from both requirements; therefore, there would be no cost to the State of Missouri.

Because no tax rates are affected, there is no direct impact on general and total state revenues. However, these proposals may have several indirect affects which could impact revenue collections by an unknown amount, including but not limited to:

- Increased wages for certain employees. According to the US BLS, in 2015, Missouri had 57,000 hourly employees earning wages at or below the federal minimum wage;[1]
- Increased consumption by those employees;
- Lower overall employment (if employers choose to hold costs steady);

[1] http://www.bls.gov/opub/reports/minimum-wage/2015/home.htm

- Lower business investment (if employers' payrolls increase);
- Increased prices as firms pass–through labor costs.

This proposal should not impact their office.

Officials from the **Office of State Courts Administrator** indicated there is no fiscal impact on the courts.

Officials from the **Missouri Senate** indicated no fiscal impact for their office as it would be exempt from the provisions set forth in the petition.

Officials from the **Secretary of State's office** indicated their office is required to pay for publishing in local newspapers the full text of each statewide ballot measure as directed by Article XII, Section 2(b) of the Missouri Constitution and Section 116.230-116.290, RSMo. Their office is provided with core funding to handle a certain amount of normal activity resulting from each year's legislative session. Funding for this item is adjusted each year depending upon the election cycle with $1.3 million historically appropriated in odd numbered fiscal years and $100,000 appropriated in even numbered fiscal years to meet these requirements. Through FY (fiscal year) 2013, the appropriation had historically been an estimated appropriation because the final cost is dependent upon the number of ballot measures approved by the General Assembly and the initiative petitions certified for the ballot. In FY 2015, the General Assembly changed the appropriation so that it was no longer an estimated appropriation. In FY 2017 their office was appropriated $2.6 million to publish the full text of the measures. In FY 2017, at the August and November elections, there were 6 statewide Constitutional Amendments or ballot propositions that cost $2.4 million to publish (an average of $400,000 per issue). Their office will continue to assume, for the purposes of this fiscal note, that it should have the full appropriation authority it needs to meet the publishing requirements. Because these requirements are mandatory, they reserve the right to request funding to meet the cost of their publishing requirements if the Governor and the General Assembly again change the amount or continue to not designate it as an estimated appropriation.

Officials from the **Office of the State Public Defender** indicated this initiative petition will not have any significant impact on their office.

Officials from the **State Treasurer's office** indicated this would have no fiscal impact on their office.

Officials from **Greene County** indicated there are no estimated costs or savings to report from their county for this initiative petition.

Officials from the **City of Kansas City** indicated no fiscal impact is anticipated if this proposal is adopted because cities are excluded from operation of the proposal.

Officials from the **City of Raymore** indicated there would be no direct fiscal impact on employee salaries. However there would be a potential increase cost in the capital projects. We have no way of predicting that value.

Officials from **University of Missouri** indicated we do not see an impact on the University of Missouri System.

Officials from **University of Central Missouri** indicated no fiscal impact.

Officials from **Missouri State University** indicated there will be no fiscal impact to their university for this fiscal note.

Officials from **Missouri Southern State University** indicated they do not anticipate any fiscal impact from this initiative petition.

Officials from **Missouri Western State University** indicated the proposed statutory amendment will have no fiscal impact on their university.

Lara Granich and **Missouri Jobs with Justice Voter Action** provided the following information as proponents of this initiative petition.

November 24, 2016

Missouri State Auditor
Jefferson City, MO
Submitted via email to moaudit@auditor.mo.gov, fiscalnote@auditor.mo.gov

Re: Fiscal Impact Analysis of Minimum Wage Initiative Petitions

Proposal 1 $15 by 2026 and Tipped Minimum Wage at 100% by 2028
Proposal 2 $15 by 2026 and Tipped Minimum Wage at 60% by 2024
Proposal 3 $15 by 2026 and Tipped Minimum Wage at 100% by 2028
Proposal 4 $15 by 2026 and Tipped Minimum Wage at 60% by 2024
Proposal 5 $15 by 2027 and Tipped Minimum Wage at 100% by 2028
Proposal 6 $15 by 2027 and Tipped Minimum Wage at 60% by 2024
Proposal 7 $14 by 2024 and Tipped Minimum Wage at 100% by 2028
Proposal 8 $14 by 2024 and Tipped Minimum Wage at 60% by 2024
Proposal 9 $13 by 2023 and Tipped Minimum Wage at 100% by 2028
Proposal 10 $13 by 2023 and Tipped Minimum Wage at 60% by 2024
Proposal 11 $12 by 2022 and Tipped Minimum Wage at 100% by 2028
Proposal 12 $12 by 2022 and Tipped Minimum Wage at 60% by 2024

This letter is from Lara Granich and Missouri Jobs with Justice Voter Action, proponents of the above-referenced initiative petitions. Pursuant to RSMo. Section 116.175, we write to submit the following fiscal impact information to assist your office in its analysis of the fiscal impact of the above-mentioned twelve proposed Minimum Wage Initiative Petitions.

The estimated net fiscal impact for each of the twelve versions of the initiative in the final phase-in year is summarized in the right-most column of Table 2 below. The estimated net fiscal impact for each version of the initiative for 2019 and 2020 – the first two fiscal years of implementation – is summarized in Table 3 below.

Our analysis estimates the impact of each of the twelve proposed initiative petitions on state and local sales and personal income tax revenue in Missouri. We follow the process that has been used in the past to estimate the impact of minimum initiative petitions on state and local sales and personal income tax, with some refinements. We also address certain claims that have been made by opponents in the past.

As these proposed initiatives exclude from the minimum wage increases public workers employed by the state or by local governments, the initiatives are not expected to have any direct impact on state and local payroll costs. Accordingly, we do not include in our analysis any such estimates.

I. Estimate of Number of Workers Affected Statewide and the Impact on Their Wages

Table 1. Summary of the Number of Affected Workers and Aggregate Wage Increases for the Final Year of Minimum Wage Phase-In.

Proposal	Year of Peak Minimum Wage (MW)	Proposed Peak MW	Tipped MW in Peak MW Year	Workers Affected by MW Increase	Aggregate Annual Wage Increase in Nominal Dollars
1	2026	$ 15.00	$ 13.50	1,117,399	$ 8,294,071,138
2	2026	$ 15.00	$ 9.00	1,117,399	$ 8,165,764,211
3	2026	$ 15.00	$ 13.50	1,117,399	$ 8,294,071,138
4	2026	$ 15.00	$ 9.00	1,117,399	$ 8,165,764,211
5	2027	$ 15.00	$ 14.25	1,097,200	$ 8,058,515,525
6	2027	$ 15.00	$ 9.00	1,096,645	$ 7,908,877,243
7	2024	$ 14.00	$ 11.20	1,044,718	$ 7,064,599,152
8	2024	$ 14.00	$ 8.40	1,043,118	$ 6,985,083,230
9	2023	$ 13.00	$ 9.75	949,801	$ 5,741,687,801
10	2023	$ 13.00	$ 7.54	944,495	$ 5,682,599,137
11	2022	$ 12.00	$ 8.40	867,022	$ 4,552,685,065
12	2022	$ 12.00	$ 6.84	858,952	$ 4,517,542,341

Note: Author's Analysis of American Community Survey (ACS) Data from 2014.

Across the twelve proposals analyzed, the total aggregate wage increase for workers in Missouri ranges from a low of $4.517 billion (Proposal 12) to a high of $8.294 billion under Proposals 1 and 3. While some proposals have the same final impact numbers, they have different impacts in the initial years (not listed) based on the relative pace of increases in earlier years. A full, year-by-year impact analysis is presented in Appendix Tables 1 through 12 below.

The wage impact of an increase in the Missouri minimum wage is calculated using the following procedure. The American Community Survey (ACS) Public Use Micro Sample for the most recent year available (2014) for the State of Missouri was downloaded from the US Census Bureau. The ACS was chosen over the Current Population survey because the ACS has a significantly larger sample. We followed the method of Perry, Thomason, and Bernhardt (2016) for calculating an hourly wage rate from the ACS based on observed total annual wage income, typical hours worked each week and weeks worked per year. Since ACS income figures are clustered around whole-numbers, we smoothed the wage distribution by randomly adding or subtracting $0.25 from each wage figure.

Wage adjustments were made only for those individuals earning less than the proposed minimum wage, or proposed tipped minimum wage. We did not make additional adjustments for the "ripple effect" of minimum wage increases on workers earning slightly above the new threshold. Recent evidence suggests that workers earning up to 15% above of the minimum wage also receive small increases in response to a minimum wage increase. (See Wicks-Lim (2006) and Dube, Giuliano and Leonard (2015)). Thus, the estimated impacts listed above are likely to be smaller than the actual impact of increasing the minimum wage to the proposed level.

All wage earners are included in this calculation. To be consistent with past estimates, public employees should have been excluded. Employees in the public sector were included because the ACS does not have a published variable that

allows for identification of public employees. This inclusion of public employees will have a minimal impact on our results.[1]

All wages from the 2014 survey were adjusted upward to account for inflation between the time of the survey and the time of measurement of the impact. Actual inflation was to adjust wages to 2015. For all subsequent years between 2016 and 2028, baseline wages were inflated by the annual average rate of change in the Consumer Price Index for Urban Workers (CPI-U) for the Midwest region. The 2015 and 2016 Missouri Minimum wage of $7.65 was adjusted by the same factor prior to measuring the impact of a change to the proposed minimum wage in 2019.

After these adjustments, the resulting hourly wage of all employees was compared to the proposed minimum wage. A total of twelve proposals were analyzed. For each proposal, we constructed a baseline wage scenario which used only basic wage changes from expected inflation rates to predict each ACS respondent's hourly wage rate in each year between 2019 and 2028. We then constructed a counterfactual, or "proposed" wage distribution for each worker under all twelve minimum wage proposed scenarios. Since the minimum wage proposals offered six different paths for raising the minimum wage for all non-tipped private sector workers, and two different wage paths for tipped workers (for each proposal), we create separate minimum wage changes for tipped and non-tipped workers. Specifically, we used information on a worker's occupation and observed wage levels to separately identify tipped workers and assign them the proposed tipped minimum wage in each year, rather than the higher non-tipped minimum wage.[2]

If the proposed minimum wage was less than the inflation-adjusted hourly earnings of an employee, then no impact was calculated. If the proposed minimum wage was more than the hourly earnings on an employee, then the difference between the inflation-adjusted hourly earnings (i.e. baseline) and the proposed minimum wage was calculated. That difference was multiplied by the number of hours the employee worked in the year to calculate the annual impact for that employee. The result was then multiplied by a weighting factor for that employee in the population. The total impact for the State of Missouri was then summed across all affected workers to generate a total estimated increase in wage income in the state.

II. Economic Literature on the Impact of Minimum Wage Increases on Employment

Next we review the economic literature on the impact of minimum wage increases on employment. Opponents often claim that minimum wage increases may reduce employment in a state. If that were true, then those employment reductions would result in reductions in state income and sales tax revenue or increases in unemployment-related costs to the state.

However, as explained in greater detail below, review of the most credible recent empirical research on the minimum wage shows that increases have had no discernible impact on aggregate employment levels. Larger $15 minimum wage increases, such as those adopted recently in New York, California, Seattle and other jurisdictions, have not yet been studied to determine whether the same holds true for them. While it is possible that there may be some employment

[1] For Missouri's state employees, this can be validated by viewing the earnings of all state employees at: http://mapyourtaxes.mo.gov/MAP/Employees/. Larger counties and cities will also have almost all public employees earning more than the highest proposed minimum wage. Local public employees in small counties and towns may have some public employees who earn less than the highest proposed minimum.

[2] We defined tipped workers as those employed in occupations that typically receive a large share of income as tips. These occupations were 'Bartenders', 'Waiters and Waitresses', 'Food Servers, Non-restaurant' and 'Miscellaneous food preparation and serving related workers including dining room and cafeteria attendants and bartender helpers.'

losses from such larger minimum wage increases as the result of increased use of automation or other factors, we offset this potential negative effect by not also calculating the positive potential job growth stemming from multiplier effects of the spending of minimum wage workers who receive substantial raises. There is substantial research to indicate that increases in the minimum wage have multiplier effects that increase the direct effects. For this reason, and because of the likely increases in wages to individuals who earn above the proposed minimum wages, the wage and tax impacts summarized in the table are considered conservative estimates relative to the total impact that would occur as a result of increasing the minimum wage to the proposed levels.

Economists have conducted hundreds of studies of the employment impact of the minimum wage. A meta-study—a formal statistical study of studies—by Doucouliagos and Stanley (2009) reviewed all the research conducted over the last three decades on the employment impact of minimum wage increases on teenagers in the United States. The researchers concluded that the bulk of the studies find that higher minimum wages have had little or no discernible effect on the employment prospects of low-wage workers. Their study followed a rigorous, peer-reviewed procedure and has the advantage of using a set of predetermined, objective criteria for weighing the validity of statistical findings across studies with different results. (Source: Doucouliagos, Hristos and T. D. Stanley. 2009. "Publication Selection Bias in Minimum-Wage Research? A Meta-Regression Analysis." British Journal of Industrial Relations, vol. 47, no. 2, pp. 406–28.)

Recent theoretical and empirical research emphasizes several explanations for the consistently negligible employment impacts of moderate increases in the minimum wage. First, relative to total wage costs, minimum wage increases are small. Second, employers and workers appear to respond to minimum-wage increases in many ways that reduce the direct cost to employers and substantially reduce or eliminate the need to cut employment.

Probably the most important economic response to a higher minimum wage is a reduction in turnover. At higher wages, employers fill vacancies faster and retain employees longer, boosting total employment and average productivity per worker while reducing direct and indirect training costs. Dube, Lester, and Reich (2012), for example, examined the effect of the minimum wage on labor turnover among teens and restaurant workers. They find "...striking evidence that separations, new hires, and turnover rates for teens and restaurant workers fall substantially following a minimum wage increase..." (p. 2) Their findings, using nationally representative data, are consistent with local case studies of the minimum wage and related "living wage" laws, including Dube, Naidu, and Reich's (2007) analysis of the San Francisco city-wide minimum wage; Fairris's (2005) study of local government contractors in Los Angeles; Howes (2005) on homecare workers in California; and Reich, Hall, and Jacobs (2005) on workers at the San Francisco airport. (Sources: Dube, Arindrajit, T. William Lester, and Michael Reich. 2012. "Minimum Wage Shocks, Employment Flows and Labor Market Frictions." Berkeley, CA: Institute for Research on Labor and Employment. http://escholarship.org/uc/item/76p927ks; Dube, Arindrajit, Suresh Naidu, and Michael Reich. 2007. "The Economic Effects of a Citywide Minimum Wage." *Industrial and Labor Relations Review*, vol. 60, no. 4, pp. 522–543; Fairris, David. 2005. "The Impact of Living Wages on Employers: A Control Group Analysis of the Los Angeles Ordinance." *Industrial Relations*, vol. 44, no. 1, pp. 84–105; Howes, Candace. 2005. "Living Wages and the Retention of Home Care Workers in San Francisco." *Industrial Relations*, vol. 44, 5 no. 1, pp. 139–63; Reich, Michael, Peter Hall, and Ken Jacobs. 2005. "Living Wage Policies at the San Francisco Airport: Impacts on Workers and Businesses." *Industrial Relations*, vol. 44, no. 1, pp. 106–138.)

Employers also appear to respond to increases in the minimum wage by taking measures to boost productivity. Hirsch, Kaufman, and Zelenska's (2011) study of the impact of the federal minimum wage increase on 81 fast-food restaurants in Georgia and Alabama, for example, asked fast-food managers about the scope for efficiency improvements in

response to the minimum-wage rise. About 90% of managers indicated that they planned to respond to the minimum wage increase with increased performance standards such as "requiring a better attendance and on-time record, faster and more proficient performance of job duties, taking on additional tasks, and faster termination of poor performers." (p. 27) Roughly the same share of managers said that they sought to "boost morale" by presenting the minimum wage increase as a "challenge to the store" and using this as a way "to energize employees to improve productivity." (pp. 28–29) Based on their interviews with store managers, the researchers concluded that a minimum wage increase may function as a "catalyst or shock that forces managers to step out of the daily routine and think about where cost savings can occur." (p. 29) (Source: Hirsch, Barry T., Bruce Kaufman, and Tetyana Zelenska, "Minimum Wage Channels of Adjustment." IZA Discussion Paper No. 6132. Germany: Institute for the Study of Labor. http://www2.gsu.edu/~ecobth/IZA_HKZ_MinWageCoA_dp6132.pdf)

A higher minimum wage may also motivate workers to work harder, independently of any actions by employers to increase productivity. According to "efficiency wage" theory, wages above the competitive-market rate may elicit greater work effort for several reasons. As Carl Shapiro and Joseph Stiglitz (1984) have argued, higher pay increases the cost to workers of losing their job, potentially inducing greater effort from workers in order to reduce their chances of being fired. George Akerlof (1982), arguing from a more sociological point of view, has suggested that workers may see higher wages as a gift from employers, leading workers to reciprocate by working harder. (Sources: Shapiro, Carl and Joseph E. Stiglitz. 1984. "Equilibrium unemployment as a worker discipline device." *American Economic Review*, vol. 74, no. 3, pp. 433–44; Akerlof, George A. 1982. "Labor contracts as partial gift exchange." *Quarterly Journal of Economics*, vol. 97, no. 4, pp. 543–69.)

We therefore conclude that the proposed increase in the Missouri minimum wage would have no discernible impact on the employment levels of low-wage workers. Note too, we conclude the same as to small businesses. In fact, the proposed increases will not affect some small businesses as the state minimum wage law exempts individuals employed by any retail or service business that has a gross volume of sales made or business done of less than $500,000 annually. Accordingly, we do not factor in reductions in employment, or any resulting decrease in sales tax or income tax. We also do not project any increased unemployment insurance costs—both because we do not project any resulting job losses, and, additionally, because unemployment insurance costs are paid for by employer premiums, and so are ultimately not a cost to the state.

III. State and Local Sales and Personal Income Tax Revenue Impact of Raising the Minimum Wage

Based on the wage impact figures calculated above, and the understanding that the minimum wage increases would be unlikely to result in offsetting job losses, we next calculate the impact of the projected wage increases on state and local sales and personal income tax revenue in Missouri. We project only the direct impact of the twelve minimum wage increase scenarios on such tax revenue. We do not attempt to project the additional impact through a GDP multiplier effect, or the potentially higher sales taxes generated if employers offset wage increases with slightly higher prices (which would be taxable). Studies are mixed as to whether businesses increase prices by even small amounts when the minimum wage increases.

Increase in Personal Income Tax Revenue and Sales Tax Revenue Due to Increased Wages. In order to determine the projected increase in personal income tax revenues that would result directly from the increased wages, we had to develop assumptions about the effective income tax rates of the affected workers. We made the following assumptions with respect to the effective tax rate:

1. That 25% of affected workers can be claimed as a dependent on another party's Missouri income tax return and, as a result, would pay an effective tax rate of 6.0% on the increase in income;
2. That 50% of the affected workers would file as single taxpayers, would claim one deduction of $2,100, and would be entitled to a standard deduction of $5,800. This would result in an effective tax rate of 2.47%;
3. The remaining 25% would, we assumed, pay no additional Missouri income tax. In light of these assumptions, the increased Missouri income tax revenue for each petition version can be calculated as follows: (total wage increase * 25% * 6.0%) + (total wage increase * 50% * 2.47%) + (total wage increase *25% * 0%).

Sales Tax Revenue. The State of Missouri imposes a 4.225% state sales tax on those items that are not exempt from the sales tax base. In addition, the average local sales tax rate is 2.95%. As a result, the average Missouri net sales tax rate is 7.175%. To estimate the share of income that is spent on goods and services that are subject to sales taxes, we used data from the 2015 Consumer Expenditure Survey (CES) for the US to estimate the share of income spent on categories that are subject to sales taxes. The CES summary tables list average spending per consumer across 20 different categories (e.g. housing, transportation, food away from home) and we categorized each spending item as taxable or non-taxable and then calculated the share of spending that was taxable.[3] The resulting rate was 30.3%.

Based upon the above assumptions, and the total wage increase calculations for each version of the petition, we estimate that the increase in state and local sale tax revenue, and in state income tax revenue, resulting from the increased wages would be as follows for the final year of the minimum wage phase-in, for each of the twelve versions of the initiative:

Table 2. Summary of the Impact of Minimum Wage Increases on State and Local Sales and Income Taxes in Final Year of Full Minimum Wage Phase-In.

Proposal	Final Year of Minimum Wage Phase-In	State & Local Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
1	2026	$ 180,361,529	$ 226,842,846	$ 407,204,375
2	2026	$ 177,571,387	$ 223,333,651	$ 400,905,039
3	2026	$ 180,361,529	$ 226,842,846	$ 407,204,375
4	2026	$ 177,571,387	$ 223,333,651	$ 400,905,039
5	2027	$ 175,239,175	$ 220,400,400	$ 395,639,574
6	2027	$ 171,985,165	$ 216,307,793	$ 388,292,957
7	2024	$ 153,625,630	$ 193,216,787	$ 346,842,417
8	2024	$ 151,896,490	$ 191,042,026	$ 342,938,516
9	2023	$ 124,857,814	$ 157,035,161	$ 281,892,975
10	2023	$ 123,572,881	$ 155,419,086	$ 278,991,968
11	2022	$ 99,001,953	$ 124,515,937	$ 223,517,889
12	2022	$ 98,237,745	$ 123,554,783	$ 221,792,528

[3] Specifically, the categories we assumed to be subject to state and local sales taxes are: food, household furnishings and equipment, vehicle purchases, gasoline and motor oil, entertainment, and all other expenditures. We assumed that 50% of the spending on the category "apparel and services" was taxable.

Note: Author's Analysis of American Community Survey (ACS) data from 2014 and fiscal impact assumptions described above. All dollars are in nominal figures.

As described in Table 2 above, the final fiscal impact of the proposed minimum wage increases varies based on the ultimate level of the minimum wage and the degree of tipped minimum wage phase-out. The estimates of the total fiscal benefit range from $221 million to $407 million annually.

Section 23.140, RSMo., indicates that the fiscal note shall address the cost of the proposed legislation to the state for the first two fiscal years—which, in the case of the proposed initiatives, will be 2019 and 2020. Table 3 below summarizes our projected total sales and personal income tax revenue increases for years 2019 and 2020 for each of the twelve versions of the initiative:

Table 3. Summary of the Impact of Minimum Wage Increases on State and Local Sales and Income Taxes in 2019 & 2020

Proposal	Total Sales and Personal Income Tax Revenue Increase—2019	Total Sales and Personal Income Tax Revenue Increase—2020
1	$ 60,008,101	$ 88,368,944
2	$ 59,882,683	$ 88,058,046
3	$ 93,306,606	$ 123,377,155
4	$ 93,142,857	$ 122,961,967
5	$ 91,491,028	$ 117,027,046
6	$ 91,328,763	$ 116,631,083
7	$ 91,491,028	$ 127,734,685
8	$ 91,328,763	$ 127,305,194
9	$ 91,491,028	$ 127,734,685
10	$ 91,328,763	$ 127,305,194
11	$ 91,491,028	$ 127,734,685
12	$ 91,328,763	$ 127,305,194

Complete year-by-year summaries of the fiscal benefits for all twelve versions of the proposed initiative can be found in Appendix tables 1 through 12.

Please also consider the following with reference to section 23.140, RSMo. The proposed measures will not establish a program or agency that will duplicate an existing program or agency. There is not a federal mandate for the proposed measures (although the United States Department of Labor currently supports minimum wage increases). The proposed measures will not have significant direct fiscal impact upon political subdivisions of the state because the measures exclude employees of public employers. And, the proposed measures do not require new physical facilities. We reference the economic impact of the proposed measures on small businesses in Section II above.

We hope that this information is useful to your office as you prepare your analyses of the petitions.

Respectfully submitted,

Lara Granich
Missouri Jobs with Justice Voter Action

Appendix

Table A. Summary of Minimum Wage Proposals and Rates by Year, 2015-2028

	Proposal 1 & 2			Proposal 3 & 4			Proposal 5 & 6			Proposal 7 & 8			Proposal 9 & 10			Proposal 11 & 12		
	$15 by 2026			$15 by 2026			$15 by 2027			$14 by 2024			$13 by 2023			$12 by 2022		
Year	Min Wage	Tipped MW A	Tipped MW B	Min Wage	Tipped MW A	Tipped MW B	Min Wage	Tipped MW A	Tipped MW B	Min Wage	Tipped MW A	Tipped MW B	Min Wage	Tipped MW A	Tipped MW B	Min Wage	Tipped MW A	Tipped MW B
2015	$ 7.65	$ 3.83	$ 3.83	$ 7.65	$ 3.83	$ 3.83	$ 7.65	$ 3.83	$ 3.83	$ 7.65	$ 3.83	$ 3.83	$ 7.65	$ 3.83	$ 3.83	$ 7.65	$ 3.83	$ 3.83
2016	$ 7.65	$ 3.83	$ 3.83	$ 7.65	$ 3.83	$ 3.83	$ 7.65	$ 3.83	$ 3.83	$ 7.65	$ 3.83	$ 3.83	$ 7.65	$ 3.83	$ 3.83	$ 7.65	$ 3.83	$ 3.83
2017	$ 7.76	$ 3.88	$ 3.88	$ 7.76	$ 3.88	$ 3.88	$ 7.76	$ 3.88	$ 3.88	$ 7.76	$ 3.88	$ 3.88	$ 7.76	$ 3.88	$ 3.88	$ 7.76	$ 3.88	$ 3.88
2018	$ 7.88	$ 3.94	$ 3.94	$ 7.88	$ 3.94	$ 3.94	$ 7.88	$ 3.94	$ 3.94	$ 7.88	$ 3.94	$ 3.94	$ 7.88	$ 3.94	$ 3.94	$ 7.88	$ 3.94	$ 3.94
2019	**$ 8.00**	$ 4.40	$ 4.08	**$ 9.05**	$ 4.98	$ 4.62	**$ 9.00**	$ 4.95	$ 4.59	**$ 9.00**	$ 4.95	$ 4.59	**$ 9.00**	$ 4.95	$ 4.59	**$ 9.00**	$ 4.95	$ 4.59
2020	$ 9.00	$ 5.40	$ 4.77	$ 9.90	$ 5.94	$ 5.25	$ 9.75	$ 5.85	$ 5.17	$ 10.00	$ 6.00	$ 5.30	$ 10.00	$ 6.00	$ 5.30	$ 10.00	$ 6.00	$ 5.30
2021	$ 10.00	$ 6.50	$ 5.50	$ 10.75	$ 6.99	$ 5.91	$ 10.50	$ 6.83	$ 5.78	$ 11.00	$ 7.15	$ 6.05	$ 11.00	$ 7.15	$ 6.05	$ 11.00	$ 7.15	$ 6.05
2022	$ 11.00	$ 7.70	$ 6.27	$ 11.60	$ 8.12	$ 6.61	$ 11.25	$ 7.88	$ 6.41	$ 12.00	$ 8.40	$ 6.84	$ 12.00	$ 8.40	$ 6.84	$ 12.00	$ 8.40	$ 6.84
2023	$ 12.00	$ 9.00	$ 6.96	$ 12.45	$ 9.34	$ 7.22	$ 12.00	$ 9.00	$ 6.96	$ 13.00	$ 9.75	$ 7.54	$ 13.00	$ 9.75	$ 7.54	$ 12.00	$ 9.00	$ 6.96
2024	$ 13.00	$ 10.40	$ 7.80	$ 13.30	$ 10.64	$ 7.98	$ 12.75	$ 10.20	$ 7.65	$ 14.00	$ 11.20	$ 8.40	$ 13.00	$ 10.40	$ 7.80	$ 12.00	$ 9.60	$ 7.20
2025	$ 14.00	$ 11.90	$ 8.40	$ 14.15	$ 12.03	$ 8.49	$ 13.50	$ 11.48	$ 8.10	$ 14.00	$ 11.90	$ 8.40	$ 13.00	$ 11.05	$ 7.80	$ 12.00	$ 10.20	$ 7.20
2026	$ 15.00	$ 13.50	$ 9.00	$ 15.00	$ 13.50	$ 9.00	$ 14.25	$ 12.83	$ 8.55	$ 14.00	$ 12.60	$ 8.40	$ 13.00	$ 11.70	$ 7.80	$ 12.00	$ 10.80	$ 7.20
2027	$ 15.00	$ 14.25	$ 9.00	$ 15.00	$ 14.25	$ 9.00	$ 15.00	$ 14.25	$ 9.00	$ 14.00	$ 13.30	$ 8.40	$ 13.00	$ 12.35	$ 7.80	$ 12.00	$ 11.40	$ 7.20
2028	$ 15.00	$ 15.00	$ 9.00	$ 15.00	$ 15.00	$ 9.00	$ 15.00	$ 15.00	$ 9.00	$ 14.00	$ 14.00	$ 8.40	$ 13.00	$ 13.00	$ 7.80	$ 12.00	$ 12.00	$ 7.20

Note: Assumed minimum wage rates under existing law between 2015 and 2018 listed in grey shading. 2017 and 2018 MW rates assumed to increase according to annual average increase in the CPI-U for the Midwest Region between 2010-2016.

Table A1. Summary of Affected Workers and Fiscal Impacts for Proposal 1.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 8.00	$ 4.40	2,864,237	421,788	14.7%	$ 1,222,264,515	$ 15,651,147	$ 10,928,020	$ 26,579,166	$ 33,428,934	$ 60,008,101
2020	$ 9.00	$ 5.40	2,881,586	530,380	18.4%	$ 1,799,927,399	$ 23,048,143	$ 16,092,787	$ 39,140,930	$ 49,228,014	$ 88,368,944
2021	$ 10.00	$ 6.50	2,899,041	631,957	21.8%	$ 2,517,558,520	$ 32,237,439	$ 22,508,981	$ 54,746,420	$ 68,855,226	$ 123,601,646
2022	$ 11.00	$ 7.70	2,916,602	745,172	25.5%	$ 3,377,968,920	$ 43,255,029	$ 30,201,736	$ 73,456,766	$ 92,387,450	$ 165,844,216
2023	$ 12.00	$ 9.00	2,934,269	846,151	28.8%	$ 4,415,685,325	$ 56,543,030	$ 39,479,749	$ 96,022,779	$ 120,768,994	$ 216,791,772
2024	$ 13.00	$ 10.40	2,952,043	931,807	31.6%	$ 5,576,900,426	$ 71,412,436	$ 49,861,938	$ 121,274,374	$ 152,528,227	$ 273,802,601
2025	$ 14.00	$ 11.90	2,969,924	1,021,637	34.4%	$ 6,864,115,755	$ 87,895,281	$ 61,370,670	$ 149,265,951	$ 187,733,566	$ 336,999,516
2026	$ 15.00	$ 13.50	2,987,914	1,117,399	37.4%	$ 8,294,071,138	$ 106,205,918	$ 74,155,611	$ 180,361,529	$ 226,842,846	$ 407,204,375
2027	$ 15.00	$ 14.25	3,006,013	1,097,200	37.2%	$ 8,058,515,525	$ 103,189,619	$ 72,049,556	$ 175,239,175	$ 220,400,400	$ 395,639,574
2028	$ 15.00	$ 15.00	3,024,222	1,066,522	35.3%	$ 7,830,620,671	$ 100,271,416	$ 70,011,994	$ 170,283,410	$ 214,167,475	$ 384,450,885

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A2. Summary of Affected Workers and Fiscal Impacts for Proposal 2.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 8.00	$ 4.08	2,864,237	420,743	14.7%	$ 1,219,709,970	$ 15,618,436	$ 10,905,180	$ 26,523,616	$ 33,359,068	$ 59,882,683
2020	$ 9.00	$ 4.77	2,881,586	528,273	18.3%	$ 1,793,594,927	$ 22,967,056	$ 16,036,169	$ 39,003,225	$ 49,054,821	$ 88,058,046
2021	$ 10.00	$ 5.50	2,899,041	627,965	21.7%	$ 2,503,864,976	$ 32,062,093	$ 22,386,550	$ 54,448,643	$ 68,480,707	$ 122,929,350
2022	$ 11.00	$ 6.27	2,916,602	738,066	25.3%	$ 3,351,722,654	$ 42,918,945	$ 29,967,074	$ 72,886,019	$ 91,669,615	$ 164,555,633
2023	$ 12.00	$ 6.96	2,934,269	837,760	28.6%	$ 4,366,803,942	$ 55,917,102	$ 39,042,710	$ 94,959,812	$ 119,432,088	$ 214,391,900
2024	$ 13.00	$ 7.80	2,952,043	926,989	31.4%	$ 5,505,724,102	$ 70,501,021	$ 49,225,565	$ 119,726,586	$ 150,581,554	$ 270,308,140
2025	$ 14.00	$ 8.40	2,969,924	1,019,055	34.3%	$ 6,764,972,241	$ 86,625,744	$ 60,484,247	$ 147,109,992	$ 185,021,991	$ 332,131,983
2026	$ 15.00	$ 9.00	2,987,914	1,117,399	37.4%	$ 8,165,764,211	$ 104,562,942	$ 73,008,445	$ 177,571,387	$ 223,333,651	$ 400,905,039
2027	$ 15.00	$ 9.00	3,006,013	1,096,645	36.5%	$ 7,908,877,243	$ 101,273,494	$ 70,711,671	$ 171,985,165	$ 216,307,793	$ 388,292,957
2028	$ 15.00	$ 9.00	3,024,222	1,065,577	35.2%	$ 7,659,733,161	$ 98,083,194	$ 68,484,124	$ 166,567,318	$ 209,493,702	$ 376,061,020

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A3. Summary of Affected Workers and Fiscal Impacts for Proposal 3.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 9.05	$ 4.98	2,864,237	548,462	19.1%	$ 1,900,499,300	$ 24,335,971	$ 16,991,980	$ 41,327,950	$ 51,978,656	$ 93,306,606
2020	$ 9.90	$ 5.94	2,881,586	636,153	22.1%	$ 2,512,986,014	$ 32,178,888	$ 22,468,099	$ 54,646,987	$ 68,730,167	$ 123,377,155
2021	$ 10.75	$ 6.99	2,899,041	729,185	25.2%	$ 3,223,130,691	$ 41,272,319	$ 28,817,359	$ 70,089,679	$ 88,152,624	$ 158,242,303
2022	$ 11.60	$ 8.12	2,916,602	824,162	28.3%	$ 4,059,707,011	$ 51,984,713	$ 36,297,019	$ 88,281,732	$ 111,032,987	$ 199,314,719
2023	$ 12.45	$ 9.34	2,934,269	893,537	30.5%	$ 4,990,737,937	$ 63,906,602	$ 44,621,178	$ 108,527,780	$ 136,496,683	$ 245,024,462
2024	$ 13.30	$ 10.64	2,952,043	959,658	32.5%	$ 6,000,441,052	$ 76,835,891	$ 53,648,729	$ 130,484,620	$ 164,112,063	$ 294,596,683
2025	$ 14.15	$ 12.03	2,969,924	1,040,572	35.0%	$ 7,099,877,251	$ 90,914,217	$ 63,478,565	$ 154,392,782	$ 194,181,643	$ 348,574,425
2026	$ 15.00	$ 13.50	2,987,914	1,117,399	37.4%	$ 8,294,071,138	$ 106,205,918	$ 74,155,611	$ 180,361,529	$ 226,842,846	$ 407,204,375
2027	$ 15.00	$ 14.25	3,006,013	1,097,200	36.5%	$ 8,058,515,525	$ 103,189,619	$ 72,049,556	$ 175,239,175	$ 220,400,400	$ 395,639,574
2028	$ 15.00	$ 15.00	3,024,222	1,066,522	35.3%	$ 7,830,620,671	$ 100,271,416	$ 70,011,994	$ 170,283,410	$ 214,167,475	$ 384,450,885

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A4. Summary of Affected Workers and Fiscal Impacts for Proposal 4.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 9.05	$ 4.62	2,864,237	547,296	19.1%	$ 1,897,164,012	$ 24,293,262	$ 16,962,159	$ 41,255,422	$ 51,887,436	$ 93,142,857
2020	$ 9.90	$ 5.25	2,881,586	633,553	22.0%	$ 2,504,529,330	$ 32,070,600	$ 22,392,490	$ 54,463,090	$ 68,498,877	$ 122,961,967
2021	$ 10.75	$ 5.91	2,899,041	724,839	25.0%	$ 3,206,008,487	$ 41,053,069	$ 28,664,273	$ 69,717,342	$ 87,684,332	$ 157,401,674
2022	$ 11.60	$ 6.61	2,916,602	816,188	28.0%	$ 4,028,411,748	$ 51,583,976	$ 36,017,214	$ 87,601,190	$ 110,177,061	$ 197,778,251
2023	$ 12.45	$ 7.22	2,934,269	886,538	30.2%	$ 4,936,926,743	$ 63,217,547	$ 44,140,063	$ 107,357,610	$ 135,024,946	$ 242,382,557
2024	$ 13.30	$ 7.98	2,952,043	955,827	32.4%	$ 5,926,500,505	$ 75,889,080	$ 52,987,641	$ 128,876,721	$ 162,089,789	$ 290,966,510
2025	$ 14.15	$ 8.49	2,969,924	1,038,903	35.0%	$ 6,999,334,098	$ 89,626,757	$ 62,579,629	$ 152,206,387	$ 191,431,788	$ 343,638,174
2026	$ 15.00	$ 9.00	2,987,914	1,117,399	37.4%	$ 8,165,764,211	$ 104,562,942	$ 73,008,445	$ 177,571,387	$ 223,333,651	$ 400,905,039
2027	$ 15.00	$ 9.00	3,006,013	1,096,645	36.5%	$ 7,908,877,243	$ 101,273,494	$ 70,711,671	$ 171,985,165	$ 216,307,793	$ 388,292,957
2028	$ 15.00	$ 9.00	3,024,222	1,065,577	35.2%	$ 7,659,733,161	$ 98,083,194	$ 68,484,124	$ 166,567,318	$ 209,493,702	$ 376,061,020

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A5. Summary of Affected Workers and Fiscal Impacts for Proposal 5.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 9.00	$ 4.95	2,864,237	543,523	19.0%	$ 1,863,519,013	$ 23,862,437	$ 16,661,346	$ 40,523,783	$ 50,967,245	$ 91,491,028
2020	$ 9.75	$ 5.85	2,881,586	616,817	21.4%	$ 2,383,644,943	$ 30,522,670	$ 21,311,687	$ 51,834,357	$ 65,192,689	$ 117,027,046
2021	$ 10.50	$ 6.83	2,899,041	689,691	23.8%	$ 2,975,549,883	$ 38,102,037	$ 26,603,789	$ 64,705,826	$ 81,381,289	$ 146,087,116
2022	$ 11.25	$ 7.88	2,916,602	784,685	26.9%	$ 3,651,492,961	$ 46,757,516	$ 32,647,259	$ 79,404,775	$ 99,868,332	$ 179,273,108
2023	$ 12.00	$ 9.00	2,934,269	846,151	28.8%	$ 4,415,685,325	$ 56,543,030	$ 39,479,749	$ 96,022,779	$ 120,768,994	$ 216,791,772
2024	$ 12.75	$ 10.20	2,952,043	904,578	30.6%	$ 5,237,058,923	$ 67,060,752	$ 46,823,484	$ 113,884,236	$ 143,233,562	$ 257,117,798
2025	$ 13.50	$ 11.48	2,969,924	959,850	32.3%	$ 6,114,487,630	$ 78,296,262	$ 54,668,396	$ 132,964,659	$ 167,231,237	$ 300,195,895
2026	$ 14.25	$ 12.83	2,987,914	1,026,895	34.4%	$ 7,054,339,607	$ 90,331,105	$ 63,071,423	$ 153,402,528	$ 192,936,188	$ 346,338,716
2027	$ 15.00	$ 14.25	3,006,013	1,097,200	36.5%	$ 8,058,515,525	$ 103,189,619	$ 72,049,556	$ 175,239,175	$ 220,400,400	$ 395,639,574
2028	$ 15.00	$ 15.00	3,024,222	1,066,522	35.3%	$ 7,830,620,671	$ 100,271,416	$ 70,011,994	$ 170,283,410	$ 214,167,475	$ 384,450,885

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A6. Summary of Affected Workers and Fiscal Impacts for Proposal 6.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 9.00	$ 4.59	2,864,237	542,576	18.9%	$ 1,860,213,946	$ 23,820,115	$ 16,631,796	$ 40,451,911	$ 50,876,851	$ 91,328,763
2020	$ 9.75	$ 5.17	2,881,586	614,272	21.3%	$ 2,375,579,835	$ 30,419,396	$ 21,239,578	$ 51,658,975	$ 64,972,108	$ 116,631,083
2021	$ 10.50	$ 5.78	2,899,041	684,908	23.6%	$ 2,959,643,079	$ 37,898,350	$ 26,461,570	$ 64,359,920	$ 80,946,238	$ 145,306,158
2022	$ 11.25	$ 6.41	2,916,602	777,265	26.6%	$ 3,623,087,338	$ 46,393,781	$ 32,393,291	$ 78,787,071	$ 99,091,439	$ 177,878,510
2023	$ 12.00	$ 6.96	2,934,269	837,760	28.6%	$ 4,366,803,942	$ 55,917,102	$ 39,042,710	$ 94,959,812	$ 119,432,088	$ 214,391,900
2024	$ 12.75	$ 7.65	2,952,043	899,272	30.5%	$ 5,168,339,574	$ 66,180,798	$ 46,209,078	$ 112,389,876	$ 141,354,087	$ 253,743,963
2025	$ 13.50	$ 8.10	2,969,924	956,019	32.2%	$ 6,020,031,489	$ 77,086,748	$ 53,823,883	$ 130,910,631	$ 164,647,861	$ 295,558,492
2026	$ 14.25	$ 8.55	2,987,914	1,024,719	34.3%	$ 6,932,879,471	$ 88,775,803	$ 61,985,472	$ 150,761,275	$ 189,614,254	$ 340,375,529
2027	$ 15.00	$ 9.00	3,006,013	1,096,645	36.5%	$ 7,908,877,243	$ 101,273,494	$ 70,711,671	$ 171,985,165	$ 216,307,793	$ 388,292,957
2028	$ 15.00	$ 9.00	3,024,222	1,065,577	35.2%	$ 7,659,733,161	$ 98,083,194	$ 68,484,124	$ 166,567,318	$ 209,493,702	$ 376,061,020

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A7. Summary of Affected Workers and Fiscal Impacts for Proposal 7.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 9.00	$ 4.95	2,864,237	543,523	19.0%	$ 1,863,519,013	$ 23,862,437	$ 16,661,346	$ 40,523,783	$ 50,967,245	$ 91,491,028
2020	$ 10.00	$ 6.00	2,881,586	647,118	22.5%	$ 2,601,741,610	$ 33,315,407	$ 23,261,645	$ 56,577,052	$ 71,157,633	$ 127,734,685
2021	$ 11.00	$ 7.15	2,899,041	767,907	26.5%	$ 3,489,359,063	$ 44,681,385	$ 31,197,653	$ 75,879,038	$ 95,433,970	$ 171,313,008
2022	$ 12.00	$ 8.40	2,916,602	867,022	29.7%	$ 4,552,685,065	$ 58,297,317	$ 40,704,636	$ 99,001,953	$ 124,515,937	$ 223,517,889
2023	$ 13.00	$ 9.75	2,934,269	949,801	32.4%	$ 5,741,687,801	$ 73,522,545	$ 51,335,268	$ 124,857,814	$ 157,035,161	$ 281,892,975
2024	$ 14.00	$ 11.20	2,952,043	1,044,718	35.4%	$ 7,064,599,152	$ 90,462,479	$ 63,163,151	$ 153,625,630	$ 193,216,787	$ 346,842,417
2025	$ 14.00	$ 11.90	2,969,924	1,021,637	34.4%	$ 6,864,115,755	$ 87,895,281	$ 61,370,670	$ 149,265,951	$ 187,733,566	$ 336,999,516
2026	$ 14.00	$ 12.60	2,987,914	997,728	33.4%	$ 6,669,196,152	$ 85,399,328	$ 59,627,933	$ 145,027,260	$ 182,402,515	$ 327,429,775
2027	$ 14.00	$ 13.30	3,006,013	971,739	32.3%	$ 6,480,542,208	$ 82,983,606	$ 57,941,216	$ 140,924,822	$ 177,242,829	$ 318,167,652
2028	$ 14.00	$ 14.00	3,024,222	950,955	31.4%	$ 6,298,798,887	$ 80,656,376	$ 56,316,286	$ 136,972,661	$ 172,272,150	$ 309,244,811

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A8. Summary of Affected Workers and Fiscal Impacts for Proposal 8.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 9.00	$ 4.59	2,864,237	542,576	18.9%	$ 1,860,213,946	$ 23,820,115	$ 16,631,796	$ 40,451,911	$ 50,876,851	$ 91,328,763
2020	$ 10.00	$ 5.30	2,881,586	644,738	22.4%	$ 2,592,993,599	$ 33,203,388	$ 23,183,431	$ 56,386,819	$ 70,918,375	$ 127,305,194
2021	$ 11.00	$ 6.05	2,899,041	762,637	26.3%	$ 3,471,054,141	$ 44,446,989	$ 31,033,992	$ 75,480,982	$ 94,933,331	$ 170,414,312
2022	$ 12.00	$ 6.84	2,916,602	858,952	29.5%	$ 4,517,542,341	$ 57,847,313	$ 40,390,432	$ 98,237,745	$ 123,554,783	$ 221,792,528
2023	$ 13.00	$ 7.54	2,934,269	944,495	32.2%	$ 5,682,599,137	$ 72,765,913	$ 50,806,969	$ 123,572,881	$ 155,419,086	$ 278,991,968
2024	$ 14.00	$ 8.40	2,952,043	1,043,118	35.3%	$ 6,985,083,230	$ 89,444,274	$ 62,452,215	$ 151,896,490	$ 191,042,026	$ 342,938,516
2025	$ 14.00	$ 8.40	2,969,924	1,019,055	34.3%	$ 6,764,972,241	$ 86,625,744	$ 60,484,247	$ 147,109,992	$ 185,021,991	$ 332,131,983
2026	$ 14.00	$ 8.40	2,987,914	994,829	33.3%	$ 6,550,573,334	$ 83,880,358	$ 58,567,350	$ 142,447,708	$ 179,158,181	$ 321,605,889
2027	$ 14.00	$ 8.40	3,006,013	968,537	32.2%	$ 6,342,493,856	$ 81,215,891	$ 56,706,954	$ 137,922,845	$ 173,467,207	$ 311,390,052
2028	$ 14.00	$ 8.40	3,024,222	947,055	31.3%	$ 6,141,467,687	$ 78,641,743	$ 54,909,619	$ 133,551,363	$ 167,969,141	$ 301,520,504

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A9. Summary of Affected Workers and Fiscal Impacts for Proposal 9.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 9.00	$ 4.95	2,864,237	543,523	19.0%	$ 1,863,519,013	$ 23,862,437	$ 16,661,346	$ 40,523,783	$ 50,967,245	$ 91,491,028
2020	$ 10.00	$ 6.00	2,881,586	647,118	22.5%	$ 2,601,741,610	$ 33,315,407	$ 23,261,645	$ 56,577,052	$ 71,157,633	$ 127,734,685
2021	$ 11.00	$ 7.15	2,899,041	767,907	26.5%	$ 3,489,359,063	$ 44,681,385	$ 31,197,653	$ 75,879,038	$ 95,433,970	$ 171,313,008
2022	$ 12.00	$ 8.40	2,916,602	867,022	29.7%	$ 4,552,685,065	$ 58,297,317	$ 40,704,636	$ 99,001,953	$ 124,515,937	$ 223,517,889
2023	$ 13.00	$ 9.75	2,934,269	949,801	32.4%	$ 5,741,687,801	$ 73,522,545	$ 51,335,268	$ 124,857,814	$ 157,035,161	$ 281,892,975
2024	$ 13.00	$ 10.40	2,952,043	931,807	31.6%	$ 5,576,900,426	$ 71,412,436	$ 49,861,938	$ 121,274,374	$ 152,528,227	$ 273,802,601
2025	$ 13.00	$ 11.05	2,969,924	909,631	30.6%	$ 5,416,478,901	$ 69,358,232	$ 48,427,641	$ 117,785,874	$ 148,140,698	$ 265,926,572
2026	$ 13.00	$ 11.70	2,987,914	893,063	29.9%	$ 5,260,207,202	$ 67,357,167	$ 47,030,448	$ 114,387,615	$ 143,866,667	$ 258,254,282
2027	$ 13.00	$ 12.35	3,006,013	876,584	29.2%	$ 5,106,957,524	$ 65,394,799	$ 45,660,274	$ 111,055,072	$ 139,675,288	$ 250,730,360
2028	$ 13.00	$ 13.00	3,024,222	857,479	28.4%	$ 4,956,685,598	$ 63,470,560	$ 44,316,723	$ 107,787,283	$ 135,565,351	$ 243,352,634

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A10. Summary of Affected Workers and Fiscal Impacts for Proposal 10.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 9.00	$ 4.59	2,864,237	542,576	18.9%	$ 1,860,213,946	$ 23,820,115	$ 16,631,796	$ 40,451,911	$ 50,876,851	$ 91,328,763
2020	$ 10.00	$ 5.30	2,881,586	644,738	22.4%	$ 2,592,993,599	$ 33,203,388	$ 23,183,431	$ 56,386,819	$ 70,918,375	$ 127,305,194
2021	$ 11.00	$ 6.05	2,899,041	762,637	26.3%	$ 3,471,054,141	$ 44,446,989	$ 31,033,992	$ 75,480,982	$ 94,933,331	$ 170,414,312
2022	$ 12.00	$ 6.84	2,916,602	858,952	29.5%	$ 4,517,542,341	$ 57,847,313	$ 40,390,432	$ 98,237,745	$ 123,554,783	$ 221,792,528
2023	$ 13.00	$ 7.54	2,934,269	944,495	32.2%	$ 5,682,599,137	$ 72,765,913	$ 50,806,969	$ 123,572,881	$ 155,419,086	$ 278,991,968
2024	$ 13.00	$ 7.80	2,952,043	926,989	31.4%	$ 5,505,724,102	$ 70,501,021	$ 49,225,565	$ 119,726,586	$ 150,581,554	$ 270,308,140
2025	$ 13.00	$ 7.80	2,969,924	904,418	30.5%	$ 5,327,596,215	$ 68,220,086	$ 47,632,959	$ 115,853,045	$ 145,709,756	$ 261,562,802
2026	$ 13.00	$ 7.80	2,987,914	887,266	29.7%	$ 5,153,689,112	$ 65,993,198	$ 46,078,091	$ 112,071,290	$ 140,953,397	$ 253,024,687
2027	$ 13.00	$ 7.80	3,006,013	870,278	29.0%	$ 4,982,946,968	$ 63,806,838	$ 44,551,520	$ 108,358,359	$ 136,283,600	$ 244,641,958
2028	$ 13.00	$ 7.80	3,024,222	850,799	28.1%	$ 4,815,248,660	$ 61,659,455	$ 43,052,164	$ 104,711,618	$ 131,697,051	$ 236,408,669

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A11. Summary of Affected Workers and Fiscal Impacts for Proposal 11.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 9.00	$ 4.95	2,864,237	543,523	19.0%	$ 1,863,519,013	$ 23,862,437	$ 16,661,346	$ 40,523,783	$ 50,967,245	$ 91,491,028
2020	$ 10.00	$ 6.00	2,881,586	647,118	22.5%	$ 2,601,741,610	$ 33,315,407	$ 23,261,645	$ 56,577,052	$ 71,157,633	$ 127,734,685
2021	$ 11.00	$ 7.15	2,899,041	767,907	26.5%	$ 3,489,359,063	$ 44,681,385	$ 31,197,653	$ 75,879,038	$ 95,433,970	$ 171,313,008
2022	$ 12.00	$ 8.40	2,916,602	867,022	29.7%	$ 4,552,685,065	$ 58,297,317	$ 40,704,636	$ 99,001,953	$ 124,515,937	$ 223,517,889
2023	$ 12.00	$ 9.00	2,934,269	846,151	28.8%	$ 4,415,685,325	$ 56,543,030	$ 39,479,749	$ 96,022,779	$ 120,768,994	$ 216,791,772
2024	$ 12.00	$ 9.60	2,952,043	831,622	28.2%	$ 4,281,776,630	$ 54,828,324	$ 38,282,498	$ 93,110,822	$ 117,106,591	$ 210,217,413
2025	$ 12.00	$ 10.20	2,969,924	813,271	27.4%	$ 4,150,695,234	$ 53,149,821	$ 37,110,526	$ 90,260,347	$ 113,521,515	$ 203,781,862
2026	$ 12.00	$ 10.80	2,987,914	799,427	26.8%	$ 4,022,314,218	$ 51,505,897	$ 35,962,697	$ 87,468,594	$ 110,010,294	$ 197,478,888
2027	$ 12.00	$ 11.40	3,006,013	772,796	25.7%	$ 3,898,371,841	$ 49,918,810	$ 34,854,554	$ 84,773,363	$ 106,620,470	$ 191,393,833
2028	$ 12.00	$ 12.00	3,024,222	748,806	24.8%	$ 3,780,440,095	$ 48,408,689	$ 33,800,150	$ 82,208,839	$ 103,395,037	$ 185,603,875

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Table A12. Summary of Affected Workers and Fiscal Impacts for Proposal 12.

Year	Proposed Minimum Wage	Proposed Tipped Wage	Total Employed Workers[1]	Workers Affected by MW increase	Share of Workforce Affected	Aggregate Annual Wage Increase in Nominal Dollars	State Sales Tax (4.225%)	Local Sales Tax Revenue (2.95%)	Total Sales Tax Revenue Increase	Personal Income Tax Revenue	Total Sales and Personal Income Tax Revenue Increase
2019	$ 9.00	$ 4.59	2,864,237	542,576	18.9%	$ 1,860,213,946	$ 23,820,115	$ 16,631,796	$ 40,451,911	$ 50,876,851	$ 91,328,763
2020	$ 10.00	$ 5.30	2,881,586	644,738	22.4%	$ 2,592,993,599	$ 33,203,388	$ 23,183,431	$ 56,386,819	$ 70,918,375	$ 127,305,194
2021	$ 11.00	$ 6.05	2,899,041	762,637	26.3%	$ 3,471,054,141	$ 44,446,989	$ 31,033,992	$ 75,480,982	$ 94,933,331	$ 170,414,312
2022	$ 12.00	$ 6.84	2,916,602	858,952	29.5%	$ 4,517,542,341	$ 57,847,313	$ 40,390,432	$ 98,237,745	$ 123,554,783	$ 221,792,528
2023	$ 12.00	$ 6.96	2,934,269	837,760	28.6%	$ 4,366,803,942	$ 55,917,102	$ 39,042,710	$ 94,959,812	$ 119,432,088	$ 214,391,900
2024	$ 12.00	$ 7.20	2,952,043	824,019	27.9%	$ 4,221,332,779	$ 54,054,338	$ 37,742,082	$ 91,796,420	$ 115,453,451	$ 207,249,871
2025	$ 12.00	$ 7.20	2,969,924	805,089	27.1%	$ 4,074,348,740	$ 52,172,201	$ 36,427,927	$ 88,600,128	$ 111,433,438	$ 200,033,567
2026	$ 12.00	$ 7.20	2,987,914	790,442	26.5%	$ 3,930,187,607	$ 50,326,212	$ 35,139,012	$ 85,465,224	$ 107,490,631	$ 192,955,855
2027	$ 12.00	$ 7.20	3,006,013	763,507	25.4%	$ 3,790,569,472	$ 48,538,396	$ 33,890,714	$ 82,429,110	$ 103,672,075	$ 186,101,185
2028	$ 12.00	$ 7.20	3,024,222	739,084	24.4%	$ 3,657,027,733	$ 46,828,389	$ 32,696,745	$ 79,525,133	$ 100,019,709	$ 179,544,842

1) Total employed workers in 2014 from the ACS was estimated to be 2,795,876. This figure was inflated to each subsequent year based on the population projections in the State of Missouri between 2020 and 2030 (CAGR = 0.6%)

Robert Bonney, Chief Executive Officer of the Missouri Restaurant Association provided the following information as an opponent of this initiative petition.

Graves Garrett LLC

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December 14, 2016

Via Electronic Mail
Mr. Jon Halwes
Missouri State Auditor's Office
Truman State Office Building
301 West High Street, Rm 880, P.O. Box 869
Jefferson City, Missouri 65102

Re: Initiative Petitions 2018-073 through 2018-084

Dear Mr. Halwes,

I write on behalf of Robert Bonney. Mr. Bonney is the Chief Executive Officer of the Missouri Restaurant Association. Please consider this letter and the accompanying studies as his fiscal impact statement as an opponent of Initiative Petitions 2018-073 through 2018-084 (the "Initiative Petitions"). If passed, any of these twelve initiatives would have a substantial negative impact on state and local governments, as well as Missouri small businesses. Those effects are both direct (as noted in Section 1) and secondary (as noted in Sections 2 through 5). The direct effects stem from higher labor and contracting costs that the state and its political subdivisions will incur, despite the Initiatives' effort to exclude government workers from the mandate.

The indirect effects will present a debate this Office has seen before. The proponents of the Initiative Petitions will once again rely on data sourced from political activist groups who claim increases in the minimum wage only serve to create new taxable income. The reality is that such groups approach this issue with political bias. Their analysis is one-sided because it completely ignores the fact that a wage increase does not "create" income from thin air; instead, it is an economic transfer from Missouri businesses to workers. Missouri businesses must pay the new wages "created" by the increases. Political activists' models fail to account, then, for two specific manifestations of the "debit" side of this transfer: reductions in employment, and the reduction in corporate income tax paid based upon business done in Missouri.

The failure to account for any employment effect at any proposed wage increase—even a near doubling of the minimum wage to $15—is particularly puzzling, because Missouri's most populous areas border Illinois and Kansas. These states, respectively, have minimum wages of $8.25 and $7.25. Neither state adjusts the minimum wage for inflation. Likewise, the second

effect—loss of corporate income tax revenues—is a mathematical certainty. Missouri businesses will be the source of the wage increase, which will lower their own taxable income. Assuming a one-to-one substitution of "created" wages for lost corporate income, the difference in the rates at which these two types of income are taxed will result in a net decrease in state revenue. A dollar from increased wages is taxable by state government in Missouri at 6% or substantially less, whereas Missouri's corporate income tax rate is 6.25%.

On top of these two types of negative outcomes—lower employment and lower state tax revenues—there may be second-order effects to small businesses because they lack the access to capital to weather price fluctuations; they may not survive at all because they may not have the flexibility to simply cut employment, shifting their reliance to capital instead of labor resources, or suffering a decrease in production and revenue.

In short, much of the fiscal impact regarding the current crop of wage-related ballot measures is secondary: they cause transfers of wealth within (or out of) the state economy, and those transfers of wealth then create second-order effects for state and local governments via their collection of tax revenues and provision of welfare services for the unemployed or less-employed. Because these fiscal notes call for the Auditor operate in the area of secondary effects, it is critical that she treat both sides of the wealth transfer equally, and refrain from assessing only one half of the wage increase equation.

1. Direct Labor Cost Impact on State and Local Government Budgets

As noted to the State Auditor's Office previously by Dr. David Macpherson, a nationally prominent labor and economics expert, there are two ways to measure labor cost on state and local government budgets. First, one can use the information included in fiscal note responses from state and local government entities. It is important to note that these fiscal notes provide an incomplete and, therefore, too-low estimate of labor cost. Few state and local government entities respond to requests for a fiscal note response, and those that do respond often ignore important effects.

Second, data from the U.S. Census Bureau's Current Population Survey (CPS) can be used to calculate increased labor cost to state and local government entities in Missouri. To combat this time-honored analysis, and in a blatant attempt to manipulate the fiscal note process, the Initiative Petitions provide that they will raise the minimum wage for private workers, but not for workers employed by state or local governmental entities. No conceivable justification exists for solely raising the minimum wage on private businesses. Whatever the disparity between the value of total compensation at a private business and at a government employer, that disparity does not approach the wage adjustments at issue here, ranging from an inflation adjusted wage increase of 68.54% (($15-$8.90)/$8.90) in Initiative Petitions 2018-073 through 2018-076 to a wage increase of 42.01% (($15-$8.45)/$8.45) in Initiative Petitions 2018-083 through 2018-084.

Moreover, it is unreasonable to assume that on a sustained basis public employers, as defined in the Initiative Petitions, would be able to maintain dramatically lower wage levels than

private businesses. Public employers would lose staff employable at higher rates in the private market, imposing substantial costs on government productivity. Using the method traditionally employed by labor economists and followed by the Auditor's office, one can calculate the annual wage costs to state and local governmental entities, based on the annual wage cost for each state and local government worker in the ORG CPS, as detailed on page 6 of Dr. Macpherson's 2012 report, as well as in Dr. Macpherson's 2014 report, attached hereto as **Exhibit A and Exhibit B**. Even if the auditor finds that a specific estimate of costs is not determinable, the auditor should note that the initiative is "likely to result in significant costs to state and local governmental entities" through the form of higher wage costs and higher contracting costs.

The proponents of the Initiative Petitions may argue that the Auditor should abandon any state and local cost estimates altogether. The proponents will argue that provisions they have inserted in the statute would mean that state and local government entities will not have to pay higher wages to their employees. Setting aside unjustifiable discrimination against private employers (and "public employees"), the provision is of uncertain legal effect and constitutionality. A "public employer," defined in the initiatives as "the state or a political subdivision of the state" still incurs substantial costs for wages of individuals that are "private employees," rather than "public employees." Cleaning services, food service, and other essential services often rely on state contracts with outside vendors. Sometimes, a contract rate may vary depending on the cost of labor. Even if the contract rate is fixed, it must be re-bid periodically, and that bidding process would take into account the new minimum wage. Plainly, the initiative would impose higher costs for state and local governments in contracting with any private entity and its employees. As a matter of law, it would be insufficient and unfair for the Auditor's fiscal note or summary to simply assume that these costs to state and local governmental entities do not exist.

2. Cost of Unemployment Benefits

a) The effect of inflation on Missouri's minimum wage

CPS–ORG data show that between 2007 and 2015, median nominal wages for adult (25–59 years old) workers in the U.S. grew by 1.68 percent a year. However, Missouri's minimum wage is currently adjusted using "the percentage increase or decrease as of the preceding July over the level as of July of the immediately preceding year of the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W)." Section 290.502, RSMo. Coincidentally (or perhaps not), the CPI-W, over the period from 2006 to 2016, also increased at an average rate of 1.68 percent a year.

Year	CPI-W	Observed inflation %
2006	199.2	
2007	203.7	0.022590361
2008	216.304	0.061875307

2009	210.526	-0.0267124
2010	213.898	0.016017024
2011	222.686	0.041085003
2012	225.568	0.01294199
2013	230.084	0.02002057
2014	234.525	0.019301646
2015	233.806	-0.00306577
2016	234.771	0.004127353

Using Missouri's current inflation-adjusted minimum wage rate and an assumed, constant 1.68 percent increase in the CPI-W, the minimum wage in Missouri will be as follows:

Year	Estimated Minimum Wage
2016	$7.65 (observed)
2017	$7.70 (observed)
2018	$7.85
2019	$8.00
2020	$8.15
2021	$8.30
2022	$8.45
2023	$8.60
2024	$8.75
2025	$8.90
2026	$9.05
2027	$9.20

b) Calculating job loss attributable to increased minimum wage

At least one outside economist, James Sherk, has already provided an estimate for job loss in Missouri based on a $15 minimum wage. Mr. Sherk calculated the effect of a $15 minimum wage implemented in 2021. Mr. Sherk's figures accounted for inflation by estimating the present value of $15.00 in 2021, rather than estimating an absolute figure for wage inflation in Missouri. Mr. Sherk calculated the present value of $15.00 in 2021 to be $13.57, per hour, based on wage inflation of 1.68 percent. Mr. Sherk evaluated the change from $7.65 per hour to $13.57 per hour (a 77.39% increase), exclusive of agricultural workers. Cumulatively, Mr. Sherk

calculated this 77.39 percent increase in wages to reduce employment in the affected workforce by (0.7739*0.677) 52.39%.

Mr. Sherk calculated that approximately 40.9% of Missouri's Wage and Salary Workers would be affected by such a $15 minimum wage. Mr. Sherk's calculations reveal that a $15 minimum wage in 2021 would be expected to reduce the number of full-time equivalent jobs in Missouri by approximately 218,000. Based on CPS–ORG data, these figures reveal an affected workforce of approximately 416,086 workers impacted by a $15 minimum wage increase in 2021.

However, in 2014, Dr. Macpherson found, using more conservative, national-level Congressional Budget Office data, that an increase to a $10.10 minimum wage, effective January 1, 2015, would eliminate about 15,700 jobs in Missouri. Dr. Macpherson analyzed the effect of a Missouri $10.10 minimum wage using a model suitable to a national analysis. This analysis predicted a loss of 15,700 Missouri jobs based on a wage increase from $7.50 in 2014 to $10.10 in 2015 (a 34.67% increase).

On the whole, the analysis by Mr. Sherk is more instructive here, since it anticipates a state level change to $15.00. The most accurate way to determine the estimate of Workers Affected would be to analyze the CPS–ORG data. However, without such data readily available in the time constraints imposed by the fiscal note process, it is reasonable for estimation purposes to assume Mr. Sherk's figures are evenly distributed. Assuming that worker data follows an equal distribution, the Initiative Petitions would be expected to result in the following job losses:

Year of final prescribed wage increase	Wage without IP	Wage mandated by IP	Percentage increase	Percentage of affected workers who lose jobs (Percentage Increase x 0.677 Elasticity)	Estimate of Workers Affected	Estimate of Missouri Workers Unemployed by Initiative
2022	$8.45	$12.00	42.01%	28.44%	225,876	64,244
2023	$8.60	$13.00	51.16%	34.64%	275,076	95,279
2024	$8.75	$14.00	60.00%	40.62%	322,589	131,036
2026	$9.05	$15.00	65.75%	44.51%	353,481	157,334
2027	$9.20	$15.00	63.04%	42.68%	338,952	144,666

c) The best estimate for a price elasticity of demand for low-skilled labor is -0.677.

As noted by Mr. Sherk, starting wages of $15.00 per hour mean that full-time employee must create at least $38,700 a year in value for his or her employer (including wages, employer

payroll taxes, and mandatory healthcare benefits). High minimum wages and mandatory benefit costs make it much harder for less-experienced and less-skilled workers to find jobs, particularly full-time work.

Recent labor economics scholarship has revealed that, accounting for publication bias, a state-specific elasticity of demand for less-skilled workers is, on average, approximately -0.677, though some estimates are even higher, around -1.0.[1] "[E]conomists have extensively studied how businesses respond to higher wages overall, not just minimum-wage increases. On average these studies find a 10 percent increase in labor costs causes firms to reduce employment of less-skilled workers by 6.8 percent in the long run."[2]

While these elasticity estimates are substantial in absolute terms, there is reason to believe that such estimates might still understate the impact of a Missouri state-specific effort to increase the minimum wage. This is so for several reasons. First, traditionally, labor economists view labor as a reasonably difficult input to substitute; however, Missouri businesses have readily available options. There are relatively few barriers to doing business in Missouri's border states, and businesses can easily relocate across a state line to take advantage of more favorable wage (and tax laws). Additionally, substantially raising the cost for Missouri labor, relative to labor sources in other states and other countries, is likely to force many manufacturing jobs in Missouri to disappear entirely. Automation is also a significant risk. The substitution of labor is becoming increasingly easy due to technology advancements and the "sharing" economy, where fewer individuals are "employees" covered by the minimum wage. Finally, a labor "price shock" may result in significant decreases in the demand for goods and services. People make behavioral changes to avoid higher costs, including eating out less often and generally decreasing consumption (or shifting their activities to consumption involving comparatively low amounts of labor) wherever possible.

d) Unemployment Benefit Costs

We derived an average unemployment payout by calculating the expected weekly unemployment benefit amount. Based on current data, the expected unemployment weekly benefit amount of a worker making $7.65 an hour, on a 40 hour workweek, is $159.30 per week,

[1] Sherk, James, "How $15-per-Hour Minimum Starting Wages Would Affect Each State," The Heritage Foundation, http://report.heritage.org/ib4601.

[2] "The coefficients on these estimates imply an elasticity of –0.677 for a study published in 2012 (the most recent year in their data) of long-run unconditional labor demand for low-skilled labor in the U.S., estimated using industry-level administrative panel data and a structural form model." "Estimates that do not account for publication bias tend to slow a long-run elasticity closer to –1.0. See, for example, George Borjas, Labor Economics, 6th ed. (Columbus, OH: McGraw-Hill, 2013), Chapter 4: 'The evidence also suggests that the estimates of the long-run labor demand elasticity cluster around –1, so the long-run labor demand curve is indeed more elastic than the short-run curve.' " Sherk, available at http://report.heritage.org/ib4601.

for 20 weeks.[3] The expected unemployment weekly benefit amount of a worker making $11.99 an hour is $249.39 per week. The expected unemployment weekly benefit amount of a worker making $12.99 an hour is $270.19 per week. The expected unemployment weekly benefit amount of a worker making $13.99 an hour is $290.99 per week. The expected unemployment weekly benefit amount of a worker making $14.99 an hour is $311.79 per week. We assume that workers will seek unemployment insurance for the full twenty weeks authorized under Missouri law, because unemployment attributable to an increase in the minimum wage is structural. In this case, structural unemployment occurs because workers' job skills do not meet the established "price floor" of labor, rendering the worker's skills unmarketable. Assuming an even distribution of workers affected, the average unemployment benefit cost to the state for a worker is calculated as follows:

- For Initiative Petitions 2018-073 through 2018-078, [($159.30+$311.79)/2]*20 = $4,710.90
- For Initiative Petitions 2018-079 through 2018-080, [($159.30+$290.99)/2]*20 = $4,502.90
- For Initiative Petitions 2018-081 through 2018-082, [($159.30+$270.19)/2]*20 = $4,294.90
- For Initiative Petitions 2018-083 through 2018-084, [($159.30+$249.39)/2]*20 = $4,086.90

Consistent with Dr. Macpherson's 2012 report, it would be reasonable for the Auditor to assume that 35% of unemployed workers will receive unemployment benefits. Combining these numbers leads to the following estimates:

Year of final prescribed wage increase	Estimate of Missouri Workers Unemployed by Initiative	Estimated Unemployment Amount Per Worker	Estimated Total Unemployment Benefits Paid	Average Cost of Annual Unemployment Benefits Paid by State
2022 ($12)	64,244	$4,086.90	$91,895,081.93	$22,973,770.48
2023 ($13)	95,279	$4,294.90	$143,224,223.60	$28,644,844.72

[3] https://labor.mo.gov/DES/Claims/calculator. A 2015 law decreased the unemployment benefit period from 20 weeks to 13 weeks, but the Supreme Court of Missouri struck down the law in July 2016.

2024 ($14)	131,036	$4,502.90	$206,514,130.35	$34,419,021.73
2026 ($15)	157,334	$4,710.90	$259,415,324.82	$32,426,915.60
2027 ($15)	144,666	$4,710.90	$238,527,470.79	$26,503,052.31

3. Impact on State Income Tax Revenue

The 2012 analysis prepared by Dr. Macpherson may also be used as a reference in calculating the effect of the initiative petitions on state income tax revenue. Here, again, it is reasonable to assume that our "affected workers" are evenly distributed, though precise CPS–ORG data would also provide a reliable estimate. Here, the increased income tax revenue is the additional income tax paid by workers whose wages increase. There is a loss of revenue, however, in the form of decreased income tax paid by workers whose wages decrease and businesses who absorb the increased cost of labor, rather than passing it along to customers.

For the purposes of these estimates, we assume that workers work 40 hours a week and 52 weeks per year:

Year of final prescribed wage increase	Estimate of Workers Affected	Estimate of Missouri Workers Unemployed by IP	Estimate of Missouri Workers with Increased Wages	Annual Increase in Wages Paid to Workers who get Wage Increase in Final Year	Annual Decrease in Wages Paid to Workers now Unemployed
2022 ($12)	225,876	64,244	161,632	$596,746,272.84	$237,187,559.20
2023 ($13)	275,076	95,279	179,797	$822,752,260.32	$336,905,136.41
2024 ($14)	322,589	131,036	191,553	$1,045,881,167.64	$442,900,455.01
2026 ($15)	353,481	157,334	196,147	$1,213,758,000.24	$482,701,950.51
2027 ($15)	338,952	144,666	194,286	$1,171,933,152.00	$421,267,392.00

These net wage increases will lead to corresponding increases in state income tax collections. Traditionally, it has been assumed that about 50% of affected workers will pay 6% income tax, while the other 50% of workers pay no state income tax. This assumption may be

less accurate at the higher wage increases contemplated by the Initiative Petitions. Accordingly, figures are also displayed assuming that about 75% of affected workers will pay 6% income tax, while the other 25% of workers pay no state income tax.

Annual Net Increase in Wages Paid To Workers	Annual Income Tax Increase from Wage Increase (50% pay tax)	Annual Income Tax Increase from Wage Increase (75% pay tax)
$359,558,713.64	$10,786,761.41	$16,180,142.11
$485,847,123.91	$14,575,413.72	$21,863,120.58
$602,980,712.63	$18,089,421.38	$27,134,132.07
$731,056,049.73	$21,931,681.49	$32,897,522.24
$750,665,760.00	$22,519,972.80	$33,779,959.20

Based on these figures, Missouri businesses must also decide whether to pass along any increase in wage costs (wages and mandatory payments).[4]

Year of final prescribed wage increase	Annual Cost to Business from Increased Wage in Final Year of Increase	Annual Decreased Corporate Income Tax if cost is fully absorbed	Annual Decreased Corporate Income Tax if cost is 50% absorbed
2022 ($12)	$642,397,362.71	$40,149,835.17	$20,074,917.58
2023 ($13)	$885,692,808.24	$55,355,800.51	$27,677,900.26
2024 ($14)	$1,125,891,076.96	$70,368,192.31	$35,184,096.16
2026 ($15)	$1,306,610,487.26	$81,663,155.45	$40,831,577.73
2027 ($15)	$1,261,586,038.13	$78,849,127.38	$39,424,563.69

Assuming businesses absorb half of the cost of increased wages, and 75 percent of affected workers pay the new, higher taxes, the effect on state income tax collections is estimated to be:

[4] A healthcare benefit cost estimate is not available based on the time limitations imposed by this fiscal note.

Year of final prescribed wage increase	Annual Net Income Tax Revenue Loss
2022 ($12)	($3,894,775.47)
2023 ($13)	($5,814,779.68)
2024 ($14)	($8,049,964.09)
2026 ($15)	($7,934,055.49)
2027 ($15)	($5,644,604.49)

4. Sales tax revenue gain or loss

Projecting any increase in sales tax revenue resulting from an increased minimum wage would require the auditor's office to conclude, based on data separate and apart from the sheer conjecture typically offered by political activist groups: (1) the net effect on consumer disposable income and (2) the percentage of a consumer's disposable income that is spent on goods subject to the sales tax, taking into consideration that the scope of Missouri's sales tax has been truncated by a voter-approved constitutional amendment from November 2016.

Typically, the Auditor's office multiplies the total increase in worker earnings (which should be adjusted for employment reductions) and multiplies the result by 25 percent, then multiplying that figure by the Missouri the population weighted combined average state and local sales tax in Missouri, 7.81%.[5] Based on this estimate, the population-weighted combined average local sales tax is 3.585%.

However, it would be deceptive to fail to account for sales tax losses from workers whose wages are eliminated or sales tax losses from reduced business profits (attributable to the higher wages paid), which will lower spending by business owners. The first figure is calculable by determining the total annual wages (adjusted for employment deductions) for all workers who lose jobs due to a minimum wage hike, multiplied by 25 percent. The second number is

[5] http://taxfoundation.org/sites/taxfoundation.org/files/docs/LOST--2015.png.

calculable by multiplying the total increase in worker earnings (multiplied by 1.0765 to account for Social Security and Medicare taxes) by approximately 15 percent.[6]

Year of final prescribed wage increase	Annual Net Increase in Wages Paid To Workers	New Wages Spent on Sales Tax Items	Annual Cost to Business from Increased Wage	Annual Business Income No Longer Included in Sales Tax Base (50% passed-through)
2022 ($12)	$359,558,714	$89,889,678	$642,397,363	($96,359,604)
2023 ($13)	$485,847,124	$121,461,781	$885,692,808	($132,853,921)
2024 ($14)	$602,980,713	$150,745,178	$1,125,891,077	($168,883,662)
2025 ($15)	$731,056,050	$182,764,012	$1,306,610,487	($195,991,573)
2026 ($15)	$750,665,760	$187,666,440	$1,261,586,038	($189,237,906)

Accordingly, the annual net losses in sales tax revenue, and total tax losses are as follows:

Year of final prescribed wage increase	Annual Net Income Tax Revenue Loss	Annual Net Loss in State Sales Tax	Total Annual Loss in State Tax Revenue	Annual Net Loss in Local Sales Tax
2022 ($12)	($3,894,775.47)	($273,354.37)	($4,168,129.84)	($231,946.85)
2023 ($13)	($5,814,779.68)	($481,317.93)	($6,296,097.61)	($408,408.23)
2024 ($14)	($8,049,964.09)	($766,350.92)	($8,816,315.01)	($650,264.63)
2026 ($15)	($7,934,055.49)	($558,864.44)	($8,492,919.93)	($474,208.05)
2027 ($15)	($5,644,604.49)	($66,394.43)	($5,710,998.92)	($56,337.05)

[6] This estimate would also need to be adjusted to reflect certain employers' mandate under the Affordable Care Act to provide healthcare coverage and pay 60 percent of such coverage.

Graves Garrett LLC

5. Damage to small business

Additionally, any proponent or opponent fiscal note submission is required, pursuant to Missouri law, to state the impact of the initiative on small businesses. According to analysis by the Employment Policies Institute, 40 percent of the minimum wage workforce is employed at businesses with fewer than 50 employees. [7] The impact on extra costs to small business may be more significant than even this 40% figure suggests. Small businesses are more easily shut down by input price increases than large businesses, which have greater access to capital to weather the storm. Clearly, small businesses that do not shut down due to increases in the minimum wage will pay higher costs, estimated at about 40% of business' total increased costs, described above.

Conclusion

In conclusion, the State Auditor should attempt to quantify the increased cost to be borne by state and local government entities through increased contracting costs as a result of an increase to the minimum wage. This direct cost is outlined in Section 1.

Indirect costs are outlined in Sections 2 through 5, and show a net loss. Although such second-order effects more difficult to predict, a net loss is easily the most likely outcome. Significantly, this result is only obtainable if the Auditor reviews both the "credit" and "debit" sides of the transfer of wealth from businesses to workers. The Auditor should refrain from taking the proponents' likely invitation to consider and present only the "credit," side, and should attempt to provide a complete picture of all effects of a minimum wage increase, including the loss of revenue to state and local governments from individuals who lose employment. Only conveying (or quantifying) the potential for gain, without fairly conveying the likelihood of net loss, would be deceptive and unfair.

Should you desire further detail or have any questions about this fiscal impact statement, please do not hesitate to contact me.

Sincerely,

Edward D. Greim
Partner, Graves Garrett, LLC

[7] https://www.epionline.org/oped/who-really-employs-minimum-wage-workers/

FISCAL ANALYSIS
OF
PROPOSED STATUTORY INITIATIVE PETITIONS 2012-084 AND 2012-085

Prepared for

Victor Allred versus Robin Carnahan and Thomas Schweich
Circuit Court of Cole County, Missouri

Prepared by

David A. Macpherson, Ph.D.
125 Park Drive
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March 26, 2012

FISCAL ANALYSIS
OF
PROPOSED STATUTORY INITIATIVE PETITIONS 2012-084 AND 2012-085

I. Introduction

This report was undertaken at the request of counsel representing plaintiffs in the case of Victor Allred versus Robin Carnahan and Thomas Schweich. As part of the basis of the lawsuit, the plaintiffs allege that the fiscal note summaries for proposed statutory initiative petitions 2012-084 and 2012-085 are insufficient and unfair. I was asked by counsel to evaluate the fiscal impact of proposed statutory initiative petitions 2012-084 and 2012-085.

The results of my analysis indicate:

(1) labor costs to state and local government entities, based on state auditor fiscal notes, will rise by more than $1,352,182. A more inclusive estimate indicates that state and local government labor costs will increase by $16,003,712;

(2) unemployment benefit costs will rise by $4,397,510 during the first year of the minimum wage increase;

(3) individual income tax revenue will rise by at most $4,078,088;

(4) the loss in corporate income tax revenue could be as high as $9,243,105;

(5) state and local sales tax revenue will rise by at most $2,919,327;

(6) during the first year: state and local governments will incur increased costs of $20,401,222; the change in state and local government revenue will

range from -$2,245,690 to +$6,997,415; and the net state and local government fiscal impact will range from -$22,646,912 to -$13,403,807.

The report is organized as follows. My qualifications to prepare this report are contained in Section II. Section III describes the data and records I relied upon for this report. Section IV reviews the estimated fiscal impact of proposed statutory initiative petitions 2012-084 and 2012-085. A summary and my conclusions are provided in Section VI.

II. Qualifications

I am currently the E.M. Stevens Professor of Economics at Trinity University in San Antonio, Texas. Previously, I was employed by Florida State University as Director of the Pepper Institute on Aging and Public Policy and the Rod and Hope Brim Eminent Scholar in Economics. I have taught both undergraduate and graduate Econometrics (statistical analysis of economic data), and Labor Economics. I have published over 50 articles in peer-reviewed professional journals.

I am currently serving on the editorial board of the *Journal of Forensic Economics*, which is a peer-reviewed journal. I have also served as a reviewer or 'referee' for 24 peer-reviewed journals, including the *Journal of Human Resources, Journal of Labor Economics, Quarterly Journal of Economics,* and the *Review of Economics and Statistics*. Based upon these experiences, I am very familiar with the scholarly and professional research process and the concept of peer review.

I have prepared numerous analyses and reports that use statistical methods as applied to specific questions. I have been responsible for developing the techniques and approaches required for these analyses. I routinely use computers and statistical software packages to assist me in my analytical work. I have been qualified as an expert witness on statistical analysis of employment discrimination and economic damages in state courts in Florida and Georgia and Federal Courts, and I have given expert testimony. I have prepared analyses and offered testimony on behalf of both plaintiffs and defendants.

Details of my qualifications are reflected in my current resume and legal cases, attached as Appendix A to the report.

III. Data and Records

I reviewed the following materials in preparing this report.

- Plaintiff's Complaint
- Material cited in footnotes below.

IV. Fiscal Impact

A. Overview

The proposed statutory initiative petitions 2012-084 and 2012-085 contain many elements in common. Both initiatives would increase the Missouri minimum wage to $8.25 per hour, alter the exemption for retail and service firms, raise the cash wage of tipped workers from 50% to 60% of the minimum wage, and increase the statute of limitation from two to three year for underpayment claims.

The initiatives differ in their linkage to the federal minimum wage. Initiative petition 2012-084 requires that the state minimum wage be automatically increased to the

federal minimum wage if it is higher than the state minimum wage. Initiative petition 2012-085 does not have such a linkage. It only requires that workers be paid the higher of the state minimum wage or the federal minimum wage. The linkage to the federal minimum wage will cause the state minimum wage to be higher under initiative petition 2012-084 over time. This is because the state minimum wage, in contrast to the federal minimum wage, is adjusted for inflation as measured by the Consumer Price Index.

An increase in the minimum wage in Missouri will affect state and local government entities in two ways. First, it will directly increase the cost of labor to state and local government entities. This will occur due to the increase in wages of state and local government workers earning between the existing minimum wage of $7.25 and the new minimum wage of $8.25.[1] In addition, workers laid off due to the minimum wage increase can collect unemployment benefits. The state government will bear the cost of unemployment benefits of these workers for the first 20 weeks. Second, state and local government may gain increased revenue through higher income tax and sales taxes paid by workers affected by the minimum wage who remain employed. However, state and local government will suffer reduced tax revenue to the extent the higher wage cost lowers profits of businesses.

The following sections estimate the cost and revenue effects to state and local government entities of the proposed minimum wage increase.

[1] Information about the minimum wage in Missouri is available at http://www.labor.mo.gov/DLS/minimumwage/.

B. Direct Labor Cost Impact on State and Local Government Budgets

There are two possible ways to measure the direct labor cost on state and local government budgets. First, one can use the information included in the fiscal notes prepared by the State Auditor regarding the proposed initiatives. It is important to note that the fiscal notes provide an incomplete and thus too low estimate of the direct labor cost. The fiscal notes indicate that the Office of Administration's (OA) Division of Personnel reported that as of September 2011 there were 834 state workers who would be affected by an increase of the minimum wage to $8.25 and the "approximate annual cost" would be more than $540,000.

This OA estimate excludes seasonal workers such as State Fair employees, State Parks Employees, and tax season staff. The Division of Revenue noted its labor cost would rise by $40,000. The Division of Natural Resources stated they have over 500 workers who would be affected by the increase, but did not provide an estimate of the cost. The State Fair hired 745 workers that would be affected, but no cost estimate was provided.

Thus, the cost to state government, based on the fiscal notes, would be more than $580,000.

The fiscal notes also provide an incomplete and thus too low measure of the cost to local government and public educational institutions. Many cities and educational institutions did not respond to Office of Auditor's survey or provide an estimate of the cost of the higher minimum wage. The City of Columbia, City of Jefferson, City of

Joseph, Linn State Technical College, and Metropolitan Community College did provide such an estimate. The total cost to these five institutions is $772,182.

Based on the fiscal notes, the cost to state and local government entities of the increase in the minimum wage to $8.25 will be more than $1,352,182.

Second, data from the U.S. Census Bureau's Current Population Survey (CPS) can also be used to calculate the cost of the increased labor cost to state and local government entities in Missouri. Using the data from January 2010 to December 2011 Outgoing Rotation Group (ORG) CPS, I calculated that 17,089 state and local government workers would be affected by the minimum wage increase. I defined affected workers as those individuals earning between $7.00 and $8.24 per hour. Though the minimum wage was $7.25 per hour during this period, I also included those workers reporting earnings of $7.00 to $7.24 since some individuals may round their wage rate. I calculated the annual wage cost for each state and local government worker (i) in the ORG CPS as:

$$Annual\ Wage\ Cost_i = (\$8.25 - current\ wage_i) * weekly\ hours_i * 52.$$[2]

The average annual wage cost increase was $870. I summed the cost over each worker (i) to obtain the total wage cost to state and local government entities in Missouri of $14,866,430.

The increased wage cost is not the only labor cost to state and local government entities of the minimum wage increase. Employers are required to pay 7.65% of their wage costs in Social Security and Medicare taxes. Thus, the total labor cost of the minimum wage increase will be 1.0765 times $14,866,430 or $16,003,712.

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[2] I assume that persons reporting an hourly wage rate between $7.00 and $7.24 are actually earning $7.25 per hour.

C. Unemployment Benefit Impact

The higher minimum wage will cause firms to reduce their level of employment.[3] As a result, the number of unemployed workers will increase. Thus, another important fiscal cost of the minimum wage increase is the cost of the unemployment insurance benefits for the workers laid off as a result of the minimum wage increase.

To calculate the cost to the unemployment benefits program, I first calculated the number of workers laid off. To do so, I calculated a probability of job loss for each affected Missouri worker (i) in the January 2010 to December 2011 ORG CPS:

$$Probability\ Job\ Loss_{\ i} = \frac{(\$8.25 - Current\ Wage_i)}{Current\ Wage_i} * elasticity_i.$$

I used the preferred employment elasticity (i.e., sensitivity of employment to wage changes) contained in Sabia and Burkhauser (2010), which was -0.6 for individuals aged 16 to 29 without a high school degree and -0.2 for all other individuals. The sole exception was for state and local government workers, where I assumed an elasticity of zero.[4] The sum across all affected workers yielded an estimated job loss of 5,745 jobs.

The next step was to calculate the weekly benefit for the average unemployed worker. Using the benefits calculator on the Missouri unemployment benefits web site and the wage income of average private-sector affected worker ($10,937), yields an average weekly benefit of $109.36[5]. The state of Missouri pays the first 20 weeks of benefits.[6] Thus, each eligible unemployed worker could receive a total of $2,187.20 in

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[3] For a survey of research regarding the effect of the minimum wage on employment, see David Neumark and William L. Wascher, *Minimum Wages* (Cambridge, MA: MIT Press, 2008).
[4] Joseph J. Sabia and Richard V. Burkhauser, "Minimum Wages and Poverty: Will a $9.50 Federal Minimum Wage Really Help the Working Poor?" *Southern Economic Journal* (January 2010): 592-623.
[5] http://www.labor.mo.gov/DES/Claims/calculator.asp
[6] See http://www.labor.mo.gov/DES/Claims/

benefits paid for by the state of Missouri. These jobs are permanently eliminated and so it is appropriate to calculate the full amount of benefits for each worker.

Unemployment insurance, however, does not cover all unemployed workers. For example, it does not cover people who leave a job voluntarily, people looking for their first job, and re-entrants who previously left the labor force voluntarily. Furthermore, some individuals don't apply for benefits even though they are eligible. I assume that 35% of the unemployed workers will receive unemployment benefits based on analysis by Wenger (2001).[7]

The last step is to calculate the total cost to the Missouri unemployment benefits program. This done by multiplying the number of jobs lost (5,745) times the average benefit amount ($2,187.20) times the percent of unemployed individuals collecting benefits (35%). This calculation yields a figure of $4,397,510. This cost would be borne only during the first year of the minimum wage increase. The inflation adjustments in the minimum wage will also yield costs to the unemployment insurance program, but it is not possible to estimate the amount.

D. Impact on State Income Tax Revenue

The state of Missouri will gain increased revenue through higher income tax taxes paid by workers affected by the minimum wage who remain employed. However, it will

[7] Jeffery Wenger. "Divided We Fall: Deserving Workers Slip through America's Patchwork Unemployment Insurance System." *Economic Policy Institute*, 2001. Sabia and Burkhauser (2010) make the same assumption in their calculation of the amount of unemployment benefits generated by a minimum wage increase.

suffer reduced corporate income tax revenue to the extent the higher wage cost lowers profits of businesses.

To calculate the impact on individual income tax revenue, I again used data from January 2010 to December 2011 ORG CPS. I defined affected workers as those Missouri individuals earning between $7.00 and $8.24 per hour.[8] I used the following formula to estimate the change in income tax revenue:

$$\Delta Tax\ Revenue_i = (Tax\_After_i - Tax\_Before_i) - Prob\_Job\_Loss_i * Tax\_Before_i,$$

where Tax_After_i is the income tax paid by worker i after the minimum wage increase. Tax_Before_i is the income tax paid by worker i after the minimum wage increase, and $Prob\_Job\_Loss_i$ is the probability of job loss for worker i. The first term shows the change in individual income tax revenue assuming no job loss and the second term shows the loss in tax revenue due to the employment loss caused by the minimum wage increase.

The income tax calculations were based on two assumptions.[9] First, the 50% percent of affected workers who were under the age 25 who were assumed to be dependents on another person's tax return. As a result, it was assumed that the affected workers' earnings were taxable at the maximum Missouri income tax rate of 6% both and after the minimum wage increase.[10] Second, all persons age 25 and older were assumed to be paying little or no income tax after exemptions and deductions. Thus, about 50% of the earnings increase will be taxed at a rate of 6%.

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[8] I again assume that persons reporting an hourly wage rate between $7.00 and $7.24 are actually earning $7.25 per hour. The annual earnings level was calculated as the worker's wage rate times usual weekly hours worked times 52.

[9] The same assumptions are used in the State Auditor's fiscal notes for the initiatives.

[10] This assumption will overstate the revenue increase as 20% of affected workers under the age 25 are living by themselves and some of these individuals will not be a dependent on another person's tax return.

The tax calculations reveal an increase in income tax revenue increase to the state. Assuming no workers were laid off by the minimum wage increase, income tax revenue would rise by $6,043,534. However, the state will lose $1,965,446 in income tax revenue due to the lost earnings of private-sector workers no longer employed due to the minimum wage hike.[11] Thus, the net increase in individual income tax revenue is $4,078,088.

Businesses have three options to respond to the higher labor costs of a higher minimum wage. They can reduce their profits, raise prices, or lay off workers. Based on the 2010-2011 ORG CPS data, the minimum wage increase will raise private-sector labor costs by $192,620,900 if employment levels are not reduced. However, labor costs will be lowered by $55,240,790 due to the reduction in employment. Thus, labor costs will, on net, rise by $137,380,110. These increased labor costs may be either passed on to consumers through higher prices or reduced profits or more likely some combination of higher prices and reduced profits. Assuming that businesses absorbed all of the higher costs through reduced profits, the corporate income tax revenue would fall by the Missouri corporate income tax of 6.25% times the rise in labor costs of $137,380,110 * 1.0765 (to account for employer-paid Social Security and Medicare taxes) or $9,243,106.[12] Alternatively, if half of the higher labor costs were passed on to consumers, then corporate income tax revenue would fall by $4,621,553.

[11] The probability of job loss was calculated in the same manner as in the prior section.
[12] The corporate income tax for Missouri is available at: http://dor.mo.gov/business/corporate/

E. Impact on State and Local Sales Tax Revenue

To calculate the impact on state and local sales tax revenue the following approach was undertaken.[13] First, the total increase in worker earnings, adjusted for employment reductions, was calculated using the 2010-2011 ORG CPS. This figure was $152,246,540. Second, the increase in Missouri taxable sales was calculated as 25% of the earnings increase or $38,061,635. Third, the increase in sales tax revenue was calculated by multiplying the taxable sales change times the average state and local rate of 7.67% or $2,919,327.[14]

The higher minimum wage may decrease sales tax revenue to the extent that it reduces business profits, which will lower spending by business owners.

VI. Summary and Conclusions

I was asked by counsel to evaluate the fiscal impact of proposed statutory initiative petitions 2012-084 and 2012-085.

The results of my analysis indicate:

(1) labor costs to state and local government entities, based on state auditor fiscal notes, will rise by more than $1,352,182. A more inclusive estimate indicates that state and local government labor costs will increase by $16,003,712;

[13] The same general approach is used in the State Auditor's fiscal notes for the initiatives.
[14] The average rate comes from http://taxfoundation.org/news/show/27023.html

(2) unemployment benefit costs will rise by $4,397,510 during the first year of the minimum wage increase;

(3) individual income tax revenue will rise by at most $4,078,088;

(4) the loss in corporate income tax revenue could be as high as $9,243,105;

(5) state and local sales tax revenue will rise by at most $2,919,327;

(6) during the first year: state and local governments will incur increased costs of $20,401,222; the change in state and local government revenue will range from -$2,245,690 to +$6,997,415; and the net state and local government fiscal impact will range from -$22,646,912 to -$13,403,807.

FISCAL ANALYSIS
OF
PROPOSED STATUTORY INITIATIVE PETITIONS 2012-084 AND 2012-085

David A. Macpherson

David A. Macpherson, Ph.D.
March 26, 2012

Appendix A

Resume and Testimony of David A. Macpherson, Ph.D.

DAVID A. MACPHERSON

3/2012

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Ph.D., Economics, The Pennsylvania State University.
B.S., Economics, The Pennsylvania State University.

Current Positions

E.M. Stevens Professor of Economics, Trinity University, 2009-
Research Fellow, Institute for the Study of Labor (IZA), Bonn, 2004-.

Previous Positions

Rod and Hope Brim Eminent Scholar in Economics, FSU 2004-2009.
Director, Pepper Institute on Aging and Public Policy, FSU, 2003-2009.
Abba P. Lerner Professor of Economics, FSU, 2000-2009.
Professor, Department of Economics, Florida State University, 1996-2009.
Director of Research, Pepper Institute on Aging and Public Policy, FSU, 1995-2000.
Associate Professor, Department of Economics, Florida State University, 1993-1996.
Research Associate, Pepper Institute on Aging and Public Policy, FSU, 1993-2001, 2003-2009.
Visiting Associate Professor, Department of Economics, Florida State University, 1992-1993.
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Associate Professor, Department of Economics, Miami University, 1991-1993.
Assistant Professor, Department of Economics, Miami University, 1987-1991.

Research Areas

Labor Economics, Labor Market Aspects of Pensions, Labor Unions, Racial and Gender Differences in the Labor Market, Minimum Wage, Deregulation.

Teaching Areas

Principles of Microeconomics and Macroeconomics, Intermediate Microeconomics, Money and Banking, Econometrics (undergraduate and graduate), Labor Economics and Labor Relations (undergraduate and graduate).

Books

Economics: Private and Public Choice, 14th edition, Southwestern: Cincinnati, OH, 2013, with James Gwartney, Richard Stroup, and Russell Sobel. Co-author on 10th, 11th, 12th, and 13th editions as well.

Instructor's Manual for *Economics: Private and Public Choice*, 14th edition, Southwestern: Cincinnati, OH, 2013. Author for instructor's manual for 10th, 11th, 12th, and 13th editions as well.

Union Membership and Earnings Data Book: Compilations from the Current Population Survey (2011 Edition), Bureau of National Affairs, Washington, D.C., with Barry Hirsch.

Previous Editions: *Union Membership and Earnings Data Book: Compilations from the Current Population Survey* (Washington: Bureau of National Affairs, 1994-2010).

Tables derived from the *Data Book* are included in U.S. Department of Commerce, *Statistical Abstract of the United States 2011,* 130th Edition (Washington: GPO, 2011), Tables 663, 665; *Statistical Abstract of the United States 2010,* 129th Edition (Washington: GPO, 2010), Tables 648, 650; *Statistical Abstract of the United States 2009,* 128th Edition (Washington: GPO, 2009), Tables 642, 644; *Statistical Abstract of the United States 2008,* 127th Edition (Washington: GPO, 2008), Tables 642, 644; *Statistical Abstract of the United States 2007,* 126th Edition (Washington: GPO, 2006), Tables 645, 647; *Statistical Abstract of the United States 2006*, 125th Edition (Washington: GPO, 2005), Tables 647, 649; *Statistical Abstract 2004-2005*, Tables 638, 640; *Statistical Abstract 2003*, Tables 656, 658; *Statistical Abstract 2002*, Tables 628, 630; *Statistical Abstract 2001*, Tables 637, 639; *Statistical Abstract 2000*, Tables 712, 714; *Statistical Abstract 1999*, Tables 718, 720; *Statistical Abstract 1998*, Tables 712, 714; *Statistical Abstract 1997*, Tables 688, 690; *Statistical Abstract 1996*, Tables 681, 683; *Statistical Abstract 1995*, Tables 695, 697; and in U.S. Department of Commerce, *State and Metropolitan Area Data Book, 1997-98*, 5th Edition (Washington: GPO, 1998), Table A-22.

Contemporary Labor Economics, 9th edition, McGraw-Hill: New York, NY, 2010, with Campbell McConnell and Stanley Brue. Co-author on 5th, 6th, 7th, and 8th editions as well.

Pensions and Productivity, W.E. Upjohn Institute for Employment Research: Kalamazoo, MI, 1998, with Christopher Cornwell and Stuart Dorsey.

Journal Publications (Economics)

"Computing Lost Profits in Business Interruption Litigation: A General Model," *Journal of Business Valuation and Economic Loss Analysis*, forthcoming, with Stanley Stephenson and Gauri Prakash-Canjels.

"Is Bigger Still Better?: The Decline of the Wage Premium at Large Firms," *Southern Economic Journal*, forthcoming, April 2012, with William Even.

"Growth of Participant Direction in Defined Contribution Plans," April 2010, pp. 190-208, *Industrial Relations*, with William Even.

"Managing Risk Caused by Pension Investments in Company Stock," *National Tax Journal*, September 2009, pp. 439-453, with William Even.

"Pension Investments in Employer Stock," *Journal of Pension Economics and Finance*, March 2008, pp. 67-93, with William Even.

"Defined Contribution Plans and the Distribution of Pension Wealth," *Industrial Relations*, July 2007, pp. 551-581, with William Even.

"Lost Profits Damages to New Businesses: Adjusting for Survival," *Journal of Business Valuation and Economic Loss Analysis*, October 2006, pp. 1-12, with Stanley Stephenson.

"Determinants and Effects of Employer Matching Contributions in 401(k) Plans," *Industrial Relations*, July 2005, pp. 525-549, with William Even.

"When Will the Gender Gap in Retirement Income Narrow?" *Southern Economic Journal*, July 2004, pp. 182-200, with William Even.

"Company Stock in Pension Funds," *National Tax Journal*, June 2004, pp. 299-313, with William Even.

"Wages, Sorting on Skill, and the Racial Composition of Jobs," *Journal of Labor Economics*, January 2004, pp.189-210, with Barry Hirsch.

"Racial and Ethnic Differences in Pension Wealth," *Research in Labor Economics*, 2003, pp. 203-226, with William Even.

"Do Terminated Employees Catch Up? Evidence From the Displaced Worker Survey," *Journal of Forensic Economics*, Spring/Summer 2003, pp. 185-199, with Michael Piette.

"Union Membership and Coverage Database from the Current Population Survey: Note," *Industrial and Labor Relations Review*, January 2003, pp. 349-354, with Barry Hirsch.

"The Wage and Employment Dynamics of Minimum Wage Workers," *Southern Economic Journal,* January 2003, pp. 676-690, with William Even.

"State-Level Estimates of Union Density, 1964 to Present," *Monthly Labor Review*, July 2001, pp. 51-55, with Barry Hirsch and Wayne Vroman (accompanying data online).

"The Changing Distribution of Pension Coverage," *Industrial Relations*, April 2000, pp. 199-227, with William Even.

"Occupational Age Structure and Access for Older Workers," *Industrial and Labor Relations Review*, April 2000, pp. 401-418, with Barry Hirsch and Melissa Hardy.

"Earnings, Rents, and Competition in the Airline Labor Market," *Journal of Labor Economics*, January 2000, pp. 125-155, with Barry Hirsch.

"Estimating Wage Differentials: When Does Cost-of-Living Matter?" *Economic Inquiry*, October 1999, pp. 577-598, with Mike DuMond and Barry Hirsch.

"Worker's Compensation Recipency in Union and Nonunion Workplaces," *Industrial and Labor Relations Review*, January 1997, pp. 213-236, with Barry Hirsch and Michael DuMond.

"Pensions and Training," *Industrial Relations*, January 1997, pp. 81-96, with Stuart Dorsey.

"The Consequences of Indexing Minimum Wages," *Contemporary Economic Policy,* October 1996, pp. 67-77, with William Even.

"Employer Size and Labor Turnover: The Role of Pensions," *Industrial and Labor Relations Review*, July 1996, pp. 707-728, with William Even.

"The Consequences of Non-FICA Status in State and Local Pensions," *Proceedings of National Tax Association Meetings*, 1996, with William Even.

"Wages and Gender Composition: Why Do Women's Jobs Pay Less?" *Journal of Labor Economics*, July 1995, pp. 426-471, with Barry Hirsch.

"Employer Size and Compensation: The Role of Worker Characteristics," *Applied Economics*, September 1994, pp. 897-907, with William Even

"Gender Differences in Pensions," *Journal of Human Resources*, Spring 1994, pp. 555-587, with William Even.

"Why Did Male Pension Coverage Decline in the 1980s?", *Industrial and Labor Relations Review*, April 1994, pp. 439-453, with William Even.

"Unionism and Gross Employment Flows," *Southern Economic Journal*, January 1994, pp. 427-438, with Timothy Dunne.

"The Decline of Private-Sector Unionism and the Gender Wage Gap," *Journal of Human Resources*, Spring 1993, pp. 279-296, with William Even.

"Union Membership and Coverage Data Available From the Current Population Surveys: Note." *Industrial and Labor Relations Review*, April 1993, pp. 574-578, with Barry Hirsch.

"Employer-Provided Retiree Health Insurance: Who is Covered?" *Economics Letters*, May 1992, pp. 95-99.

"Union Wage Differentials and the Effects of Industry and Local Union Density: Evidence from the 1980s," *Journal of Labor Research*, Fall 1991, pp. 419-427, with Michael Curme.

"The Effects of Extended Families and Marital Status on Housing Consumption by Black Female-Headed Households," *Review of Black Political Economy*, Winter/Spring 1991, pp. 65-84, with James Stewart.

"The Impact of Unionism on Fringe Benefit Coverage," *Economics Letters*, May 1991, pp. 87-91, with William Even.

"A Note on Ownership and Performance in Manufacturing Firms," *Southern Economic Journal*, April 1991, pp. 1164-1169, with Timothy Dunne.

"Union Membership and Contract Coverage in the United States, 1983-1988," *Industrial and Labor Relations Review*, October 1990, pp. 5-33, with Michael Curme and Barry Hirsch.

"The Gender Gap in Pensions and Wages," *Review of Economics and Statistics*, May 1990, pp. 259-265, with William Even.

"The Effect of International Competition on Union and Nonunion Wages," *Industrial and Labor Relations Review*, April 1990, pp. 434-446, with James Stewart.

"Plant Size and the Decline of Unionism," *Economics Letters*, April 1990, pp. 393-398, with William Even.

"Trade Unions and Labor's Share in U.S. Manufacturing Industries," *International Journal of Industrial Organization*, March 1990, pp. 143-51.

"The Labor Force Participation and Earnings Profiles of Married Female Immigrants," *Quarterly Review of Economics and Business*, Autumn 1989, pp. 57-72, with James Stewart.

"The Labor Supply and School Attendance of Black Women in Extended and Nonextended Households," *American Economic Review Papers and Proceedings*, May 1989, pp. 71-74, with James Stewart.

"Self-Employment and Married Women," *Economics Letters*, December 1988, pp. 281-284.

"Unionism and the Dispersion of Wages Among Blue-Collar Women," *Journal of Labor Research*, Fall 1987, pp. 395-405, with James Stewart.

Journal Publications (Real Estate and Insurance)

"The Use of Post-Loss Assessments in Catastrophic Financing," *Risk Insurance and Management Review*, forthcoming, with Patrick Maroney, Charles Nyce, Kathleen McCullough, James W. Newman Jr., and Cassandra Cole.

"A Meta Analysis of Selling Price and Time on the Market," *Journal of Housing Research,* Issue 2010, pp. 139-152, with Stacy Sirmans and Lynn MacDonald.

"A Comparison of Hurricane Loss Models," *Journal of Insurance Issues*, Spring 2010, pp. 31-53, with Kathleen McCullough and Cassandra Cole.

"A Review of the Development of Residual Market Mechanisms in Florida," *Journal of Insurance Regulation*, Summer 2009, pp. 55-80, with Patrick Maroney, Charles Nyce, Kathleen McCullough, James W. Newman Jr., and Cassandra Cole.

"The History of Property Tax Capitalization in Real Estate," *Journal of Real Estate Literature*, Issue 3 2008, pp. 327-343, with Dean Gatzlaff and Stacy Sirmans.

"Horizontal and Vertical Inequity in Real Property Taxation," *Journal of Real Estate Literature*, Issue 2 2008, pp. 167-180, with Dean Gatzlaff and Stacy Sirmans.

"The Title Insurance Industry: Examining a Decade of Growth," *Journal of Insurance Regulation*, Summer 2007, pp. 23-51, with Randy Dumm and Stacy Sirmans.

"The Value of Housing Characteristics: A Meta Analysis" *Journal of Real Estate Finance and Economics*, November 2006, pp. 215-240, with Stacy Sirmans, Lynn MacDonald, and Emily Zeitz.

"The Composition of Hedonic Pricing Models," *Journal of Real Estate Literature*, Issue 1 2005, pp. 3-43, with Stacy Sirmans.

"The State of Affordable Housing," *Journal of Real Estate Literature*, Issue 2 2003, pp. 133-155, with Stacy Sirmans.

"Affinity Programs and Real Estate Brokerage," *Journal of Real Estate Research*, November-December 2001, pp. 337-351, with Stacy Sirmans.

"Neighborhood Diversity and House Price Appreciation," *Journal of Real Estate Finance and Economics*, January 2001, pp. 81-97, with Stacy Sirmans.

"Forecasting Seniors Housing Demand in Florida," *Journal of Real Estate Portfolio Management*, 1999, pp. 259-74, with G. Stacy Sirmans.

Publications in Books

"Improving Pension Coverage at Small Firms," with William Even, in *Overcoming Barriers to Entrepreneurship*, ed. Diana Furchtgott-Roth, Rowman & Littlefield, 2008.

"Measuring Union and Nonunion Wage Growth: Puzzles in Search of Solutions" with Barry Hirsch and Edward Schumacher, in *Changing Role of Unions: New Forms of Representation*, Phanindra Wunnava, M.E. Sharpe, 2004.

"Living Wage Laws and the Case for a Targeted Wage Subsidy," in *Living Wage Movements: Global Perspectives*, ed. Deborah M. Figart, Routledge, 2004.

"Benefits and Worker Productivity," with William Even, in *Benefits for the Workplace of Tomorrow,* eds. Olivia S. Mitchell, David S. Blitzstein, Michael S. Gordon, and Judith F. Mazo, University of Pennsylvania Press, 2003.

"Children's Effects on Women's Labor Market Attachment and Earnings," with William Even, in *Changes in Working Time in Canada and the United States*, eds. Susan Houseman and Alice Nakamura, W.E. Upjohn Institute, 2001.

"Downsizing and Life Course Consequences of Job Loss: The Effect of Age and Gender on Employment and Income Security," with Jill Quadagno, Jennifer Reid, and Lori Parham, in *Restructuring Work and the Life Course*, eds. Victor Marshall, Walter Heinz, Helga Krueger, and Anil Verma, University of Toronto Press, 2001.

"The Effect of a Job Loss on the Employment Experience, Benefits, and Retirement Savings of Bank Officers," with Jill Quadagno and Jennifer Keene, in *Ensuring Health and Income Security for an Aging Workforce*, ed. Peter P. Budetti, W.E. Upjohn Institute, 2001.

"Earnings and Employment in Trucking: Deregulating a Naturally Competitive Industry," with Barry Hirsch, in *Regulatory Reform and Labor Markets*, ed. James Peoples, Kluwer Publishers, 1998.

"Gender-Related Differences in Pension Coverage," with William Even, in *Women and Work: A Handbook*, Garland Publishing, New York, NY, 1996.

"The Pension Coverage of Young and Mature Workers", with William Even, in *Pension Coverage Issues for the '90s*, eds. Richard Hinz, John Turner, and Phyllis Fernandez, U.S. Government Printing Office, Washington, D.C, 1994.

Working Papers (Economics)

"Deferred Compensation vs. Efficiency Wages: An Experimental Test of Effort Provision and
Self-Selection," with Tim Salmon and Kislaya Prasad, under review, *Journal of Business and Economic Organization*

"What Do Unions Do to Pension Performance?" with William Even, September 2011, under revision

"Teacher Salaries, State Collective Bargaining Laws, and Union Coverage" March 2011, with Barry Hirsch and John Winters.

"The Effects of the 2007-2009 Federal Minimum Wage Increases on Teen Employment," with William Even, under revision, July 2010.

"Participant Direction in Defined Contribution Plans," April 2006, with William Even, under revision.

"Do Pensions Impede Phased Retirement?" September 2004, with William Even, under revision.

Working Papers (Real Estate and Insurance)

"An Empirical Analysis of Socio-Demographic Factors and the Mispricing of Homeowners Insurance in Florida," under review *Journal of Financial Services Research*, with Ronald Cheung, Charles Nyce, Kathleen McCullough, and Cassandra Cole.

"The Impact of No-Fault Legislation on Automobile Insurance Premiums," revised and resubmitted to *North American Actuarial Journal*, with Cassandra Cole, Kevin Eastman, Patrick Maroney, and Kathleen McCullough.

Funded Projects

Employment Policies Institute, 5/2010-7/2010, $16,500 (Trinity University portion), "Employment Effects of the 2007-2009 Federal Minimum Wage Increases," with William Even.

National Science Foundation, 9/2009-8/2012, $125,866 (Trinity University portion), "Incentives in the Workplace: An Experimental Examination of How Wage Differences Across Time and Among Peers Affect Productivity and Self-Selection," with Tim Salmon, Kislaya Prasad, and Hyejin Ku.

Florida Legislature, 10/2007-6/2009, $175,000, "Child Support Guidelines," with Stefan Norrbin and Thomas McCaleb.

Florida Legislature (through University of Florida), 12/2006-9/2007, $223,000, "Analysis of Save our Homes Amendment," with Dean Gatzlaff.

U.S. Administration on Aging (through University of South Florida), 5/2005-9/2007, $175,000, "Employment in the Long-Term Care Industry: The Importance of Recruitment and Retention," with William Even.

Florida Legislature, 2/2003-8/2004, $175,000, "Child Support Guidelines," with Stefan Norrbin and Thomas McCaleb.

Florida Department of Environmental Protection, 6/2002-2/2003, $94,157, "Affordability Index," with Stefan Norrbin and William Serow.

University of South Carolina, 4/2000-11/2000, $10,000, "Minority Homeownership in South Carolina," with Stacy Sirmans.

Florida Department of Business and Professional Regulation, 3/1999-6/1999, $21,739, "Forecasting Housing Demand in Florida," with Stacy Sirmans.

University of South Carolina, 4/1999-11/1999, $10,000, "Forecasting Housing Demand in South Carolina," with Stacy Sirmans.

Florida State University, 6/1999-8/1999, $7,500, "Support for Preparing ECO 2000 as a Web-Based Course."

TIAA-CREF, 8/1998-8/1999, $23,000, "Determinants of Savings in Supplemental Pension Plans: A Case Study of Pension Choices in Higher Education," with Melissa Hardy and Larry Hazelrigg.

Florida Department of Business and Professional Regulation, 4/1998-6/1998, $16,638, "Forecasting Seniors' Demand for Housing in Florida," with Stacy Sirmans.

Florida Department of Business and Professional Regulation, 12/1997-6/1998, $18,472, "Housing Price Appreciation in Orlando and Tampa," with Stacy Sirmans.

Florida State University, 6/1998-8/1998, $7,500, "Support for Preparing ECO 2000 as a Web-Assisted Course."

Florida Department of Business and Professional Regulation, 3/1997-6/1997, $17,898, "Minority Homeownership in Florida," with Stacy Sirmans.

U.S. Department of Labor, Pension Welfare and Benefit Administration, 12/1996-8/1997, $20,000, "The Impact of Rising 401(k) Pension Coverage on Retirement Income," with William Even.

U.S. Department of Labor, Pension Welfare and Benefit Administration, 3/1996-6/1997, $15,000, "The Determinants of 401(k) Participation and Contribution Levels," with William Even.

Florida Department of Business and Professional Regulation, 4/1996-6/1996, $22,702, "Forecasting the Number of New Florida Real Estate Licensees," with Stacy Sirmans.

U.S. Department of Labor, Pension Welfare and Benefit Administration, 3/1995-6/1996, $15,000, "Explaining the Decline in Pension Coverage of Less Educated Workers," with William Even.

Florida State University COFRS Grant, 6/1994-8/1994, $8,000, "The Relative Compensation and Quality of Public and Private Sector Workers."

W.E. Upjohn Institute for Employment Research, 3/1994-12/1995, $35,000, "Pensions and Productivity," with Stuart Dorsey and Christopher Cornwell.

Florida Division of Workers' Compensation, 1/94-12/1995, $100,000, "Worker's Compensation Recipency in Union and Nonunion Workplaces," part of a service contract titled "Research Partnership with the Division of Workers' Compensation," co-investigator (one of several).

University of Wisconsin Institute for Research on Poverty Small Grant Program, 7/1993-6/1994, $15,000, "Racial Composition, Wages, and Quality Sorting," with Barry Hirsch.

U.S. Department of Labor, Pension Welfare and Benefit Administration, 7/1993-6/1993, $10,000, "Trends in Individual and Family Pension Coverage," with William Even.

U.S. Department of Labor, Pension Welfare and Benefit Administration, 6/1992-5/1993, $10,000, "The Pension Coverage of Young and Mature Workers," with William Even.

U.S. Department of Labor, Pension Welfare and Benefit Administration and American Society of Pension Actuaries, 6/1991-5/1992, $10,000, "A Conference on Current Pension Policy Issues," with William Even.

Miami University Faculty Research Grant, 6/1991-8/1991, $4,000, "Projected Growth in Retiree Health Insurance Liabilities."

Ohio Board of Regents Research Challenge Grant, 1/1990-12/1990, $4,980, "Proposal to Enhance the Data Library of the Center of Pension and Retirement Research," with William Even and Samuel Williamson.

Miami University Faculty Research Grant, 6/1990-8/1990, $4,000, "The Role of Firm Size in Pension Coverage and Options."

Miami University Faculty Research Grant, 6/1989-8/1989, $4,000, "Declining Unionism and the Gender Wage Gap," with William Even.

Participation in National Meetings

Panel Discussant, American Real Estate and Urban Economics Association/ASSA meetings, January 2008.

Presented, "Employee Turnover in the Long-Term Care Industry," at Academy Health Annual Research Meetings, June 2007.

Presented, "Participant Direction in Defined Contribution Pension Plans," at International Atlantic Economic Society meetings, October 2006.

Presented, "The Risk and Return of Pension Investments in Employer Stock," at International Atlantic Economic Society meetings, October 2005.

Presented, "Replacing Earnings After Termination: Evidence from the Displaced Worker Survey," at the Allied Social Science Association/National Association of Forensic Economics, January 2002.

Presented, "Labor Market Transitions of Older Workers," at the Allied Social Science Association/Society of Government Economists meetings, January 1999.

Presented, "Why has the Loss in Pension Coverage Accelerated Among Less Educated Workers?" at the American Economic Association Meetings, 1995.

Presented, "Wages and Gender Composition: Why Do Women's Jobs Pay Less?" at the American Economic Association Meetings, 1994, with Barry Hirsch.

Presented, "Pensions, Labor Turnover, and Employer Size" at the American Economic Association Meetings, 1993, with William Even.

Presented, "Why Did Male Pension Coverage Decline in the 1980s?" at the American Economic Association meetings, 1992, with William Even.

Participation in Regional Meetings

Presented "Unions and Pension Performance: The Role of Pension Design," at Southern Economics Association meetings, November 2009.

Panel member, "Recent Federal Reserve Policy: An Evaluation" at Southern Economics Association meetings, November 2009.

Discussant, "Topics in Health Economics," at Southern Economics Association meetings, November 2009.

Discussant, "Teacher Pay, Principals, and Schooling," at Southern Economics Association meetings, November 2009.

Presented "Is Bigger Still Better?: The Decline of the Wage Premium at Large Firms," at Western Economic Association meetings, July 2009.

Presented "Is Bigger Still Better?: The Decline of the Wage Premium at Large Firms," at Eastern Economic Association meetings, February 2009.

Panel Discussant at the Southern Economic Association meetings, November 2008.

Presented "Is Bigger Still Better?: The Decline of the Wage Premium at Large Firms," at Southern Economic Association meetings, November 2008.

Presented "The Growth of Participant Direction in Defined Contribution Pensions," at Western Economic Association meetings, July 2008.

Chair "Pensions and Retirement" Session at Southern Economic Association meetings, November 2007.

Presented "The Growth of Participant Direction in Defined Contribution Pensions," at Southern Economic Association meetings, November 2007.

Presented, "Participant Direction in Defined Contribution Pension Plans," at Southern Economic Association meetings, November 2006.

Panel Discussant, Southern Economic Association meetings, November 2005.

Presented, "Do Pensions Impede Phased Retirement?" at the Southern Economic Association meetings, November 2004.

Presented, "When Will the Gender Gap in Retirement Income Narrow?" at the Southern Economic Association meetings, November 2003.

Presented, "How Will the Growth of DC and 401(k) Plans Affect Pension Income?" at the Southern Economic Association meetings, November 2002.

Presented, "Racial Composition, Wages, and Quality Sorting," at the Southern Economic Association meetings, November 1999.

Presented, "Racial and Ethnic Differences in Pension Coverage and Benefit Levels," at the Southern Economic Association meetings, November 1998.

Presented, "Factors Influencing Participation and Contribution Levels in 401(k) Plans," at the Western Economics Association meetings, July 1998.

Presented, "Aging at Work: Employment Determination, Firm Strategies, and Public Policy in the United States," at the Western Economic Association meetings, July 1994.

Presented, "Why Did Male Pension Coverage Decline in the 1980s?" at the Western Economic Association meetings, July 1992.

Presented "Plant Size and the Decline of Unionism," at the Southern Economic Association meetings, 1989, with William Even.

Panel Discussant, Southern Economic Association meetings, November 1989.

Presented "The Labor Force Participation and Earnings Profiles of Married Female Immigrants," at the Southern Economic Association meetings, November 1988.

Presented "Pensions, Screening, and the Gender Wage Gap," at the Southern Economic Association meetings, November 1988.

Session Chair and Panel Discussant at the Southern Economic Association meetings, November 1988.

Participation in Invited Seminars, Conferences, and other Presentations

Presented, "Teaching Macroeconomics During Troubled Times," at Creative Ideas for Your Basic Economics Course Conference at Florida State University, February 2012.

Presented, "Participant Direction in Defined Contribution Pension Plans," at Pennsylvania State University, April 2010.

Presented, "The Parallels Between the Japanese Economic Crisis of the 1990s and the US Today" at Creative Ideas for Your Basic Economics Course Conference at Florida State University, February 2010.

Chair "Minimum Wage & EITC" Session at Society of Labor Economists meetings, May 2009.

Presented "Participant Direction in Defined Contribution Plans," at Lehigh University, April 2009.

Presented "Is Bigger Still Better?: The Decline of the Wage Premium at Large Firms," at Association of Private Enterprise Education meetings, April 2009.

Presented "The Growth of Participant Direction in Defined Contribution Pensions," at Trinity University, October 2008.

Presented "The Growth of Participant Direction in Defined Contribution Pensions," at Georgia State University, April 2008.

Presented "The Growth of Participant Direction in Defined Contribution Pensions," at Association of Private Enterprise Education meetings, April 2008.
Presented, "Improving Pension Coverage at Small Firms," at Hudson Institute, May 2006.

Presented, "Participant Direction in Defined Contribution Plans," at Society of Labor Economics meetings, May 2006.

Presented, "Participant Direction in Defined Contribution Plans," at Association of Private Enterprise Education meetings, April 2006.

Presented, "Participant Direction in Defined Contribution Plans," at University of Wisconsin-Milwaukee, April 2006.

Invited Panel Participant for Pepper Foundation and Center Symposium on pension reform, Washington, DC, February 2006.

Presented, "The Risk and Return of Pension Investments in Employer Stock," at West Virginia University, April 2005.

Presented, "The Risk and Return of Pension Investments in Employer Stock," at the University of Kentucky, November 2004.

Presented, "The Causes and Consequences of Company Stock Holdings in Pension Funds," at the Federal Reserve Bank of Atlanta, April 2004.

Presented, "The Causes and Consequences of Company Stock Holdings in Pension Funds," at the University of Oklahoma, February 2004.

Presented, "Tracking Union and Nonunion Wages in the U.S.: Can the Evidence be Reconciled?" at the Middlebury Annual Conference on Economic Issues, April 2002.

Presented, "How Will the Growth of DC and 401(k) Plans Affect Pension Income?" at the Miami University Center for Pension and Retirement Research Conference, June 2001.

Presented, "Benefits and Worker Productivity," Benefits for the Workplace of Tomorrow Conference, Wharton School, University of Pennsylvania, May 2001.

Participant, Innovations in Managing the Financial Risks of Retirement Conference, Wharton School, University of Pennsylvania, May 2000.

Presented "Using Hi-Tech in Large Lectures," at Association of Private Enterprise Education meetings, April 2000.

Presented "Employee Participation in 401(k) Plans," at University of Wisconsin-Milwaukee, October 1999.

Presented "Gender, Race, and Ethnicity in the Labor Market," as part of the Smith Chair course in Labor Economics at Brigham Young University, September 1999.

Presented, "The Decline in Pension Coverage Among Less Educated Workers," at the Florida State University Economics Department Seminar Series, 1996.

Presented, "Children's Effects on Women's Labor Market Attachment and Earnings" at the Conference on the Changes in Working Time in Canada and the United States, Canadian Employment Research Forum, 1996.

Presented, "Earnings, Rents, and Competition in the Airline Labor Market" at the Ohio State University Economics Department Seminar Series, 1996.

Presented, "Earnings, Rents, and Competition in the Airline Labor Market" at the Florida State University Economics Department Seminar Series, 1995.

Presented, "Employer Size and Labor Turnover: The Role of Pensions," at Syracuse University, 1995.

Presented, "Earnings, Rents, and Competition in the Airline Labor Market" while visiting scholar at the Federal Reserve Bank of Cleveland, 1995.

Presented, "Trends in Individual and Household Pension Coverage," at the Miami University Center for Pension and Retirement Research Conference, 1994.

Presented, "Racial Composition, Quality Sorting, and the Black-White Wage Gap" at the University of Wisconsin, Institute for Research on Poverty, Small Grants Workshop, 1993, with Barry Hirsch.

Presented, "Why Did Male Pension Coverage Decline in the 1980s?" at the Florida State University Economics Department Seminar Series, 1992.

Participant at National Bureau of Economic Research (NBER) Labor Studies meetings of the Summer Institute, 1992.

Presented, "Why Did Male Pension Coverage Decline in the 1980s?" at the Miami University Conference on Current Pension Policy Issues, 1992.

Organizer and participant at conference on "Contemporary Issues in Pension Economics," hosted by the Center for Pension and Retirement Research, Miami University, 1990.

Presented "The Effect of International Competition on Union and Nonunion Wages," at the University of Cincinnati Seminar Series, 1987.

Refereeing

Bulletin of Economic Research, Canadian Journal of Economics, Contemporary Economic Policy, Eastern Economics Journal, Economic Development and Cultural Change, Economic Inquiry, Industrial Relations, Industrial and Labor Relations Review, International Economic Review, Journal of Economics and Business, Journal of Human Resources, Journal of Labor Economics, Journal of Labor Research, Journal of Pension Economics and Finance, Labour Economics, Mid-American Journal of Business, Policy Studies Review, Quarterly Journal of Economics, Quarterly Review of Economics and Finance, Real Estate Economics, Review *of Economics and Statistics, Social Science Quarterly, Southern Economic Journal*

Outside reviewer for Department of Economics, UNC-Greensboro, Georgia State University.

Promotion and tenure letters for candidates at Georgia State University, Kansas State University, Monmouth University, Ohio State University, University of Massachusetts, University of Southern California, and University of Wisconsin-Milwaukee.

Honors and Awards

Awarded sabbatical, Trinity, Fall 2011.

Nominated for FSU Award for Excellence in Undergraduate Teaching, Spring 2005.

Named Rod and Hope Brim Eminent Scholar in Economics, FSU, Fall 2004.

Research Fellow, Institute for the Study of Labor (IZA), Bonn, 2004-.

Who's Who in Economics, Fourth Edition, Mark Blaug and Howard Vane (eds), Edward Elgar Publishing, 2003, pp. 524 (selection criteria: one of the 1,200 most frequently cited economists in the years 1990-2000 using the Social Science Citation Index).

Awarded Abba Lerner named professorship, FSU, Spring 2000.

Awarded sabbatical, FSU, Spring 2000.

Received FSU Award for Excellence in Undergraduate Teaching, Spring 2000.

Received FSU Teaching Incentive Program Award, Fall 1995.

Nominated for FSU Award for Excellence in Undergraduate Teaching, Spring 1994.

Nominated for Outstanding Teaching Award, Associated Student Government, Miami University,1992.
Selected by the Miami University Sisters of Delta Gamma for a "Favorite Professor Award" in Fall 1990.

Honorary Member of Golden Key National Honor Society, Fall 1989.

Selected by the Sisters of Delta Gamma as "One of the twenty five most outstanding faculty members at Miami University" in Fall 1988.

Service

Vice President, Southern Economic Association, 2011-

Trinity University

Dick and Peggy Prassel Professor of Business Administration Search Committee, 2011
Faculty and Staff Compensation Committee, 2010-2011
Student Retention Committee, 2010

Florida State University

University and College Committees:

Member, GPC subcommittee for Marketing, Spring 2008.
Member, Graduate Policy Committee, Fall 2007-.
Chair, GPC subcommittee for Political Science, Fall 2006.
Member, Title IV Admissions Attendance Committee, Fall 2003-Spring 2004.
Member, College of Social Sciences Executive Committee, Fall 2003-.
Member, Ad Hoc Committee on COSS Technology, Spring 2003.
Member, Computing and Information Resource Committee, Fall 1999-.
Member, Academic and Policy Affairs Committee, Fall 1996-Spring 1998.

Economics Department Committees:

Member, Ad Hoc Committee on Economics 2000 Level Courses, Spring 1999.
Member, Undergraduate Economics Committee, Fall 1998-
Member, Economics Department Executive Committee, Fall 1994-Spring 1995, Fall 1996-Spring 1999, Fall 2000-.
Economics Department Library Representative, Fall 1993-.
Micro/Macroeconomics Seminar Coordinator, Fall 1993-Spring 1995, Fall 1998-Fall 1999, Fall 2001, Fall 2006-.

Comprehensive Examination Committees:

Member, Masters Comprehensive Exam Committee, Spring 1994.
Member, Ph.D. Labor Field Exam Committee, Fall 1992, Spring 1994, Fall 1994, Fall 1995, Fall 1996, Spring 1997, Spring 1998.
Chair, Masters Comprehensive Exam Committee, Fall 1994, Spring 1998.
Chair, Ph.D. Labor Field Exam Committee, Spring 1993-Fall 1993, Spring 1995, Spring 1996, Spring 2000, Spring 2001, Fall 2001.

Miami University

Computing Task Force, Department of Economics, 1991-92.
Recruiting Committee, Department of Economics, 1990-92.
Economics Club Advisor, 1988-1991.
Research Associate, Center for Pension and Retirement Research, 1988-92.
Delta Sigma Pi Chapter Advisor, 1988-89.
Student Finance Committee, Student Affairs Council, 1988-89.
Omicron Delta Epsilon Advisor, 1987-88.

Theses, Extended Papers, and Dissertations

Undergraduate Honors Thesis:

Chair, Leela Hebbar, 1995

Member, Nicole Cubies, 2006
Member, John Stutts, 2006
Member, Todd Crannell, 2000
Member, Mark Plotnick, 2000
Member, Bobby Pittman, 1998

MS Thesis and Extended Paper:

Chair, Maria Arce-Trigatti, 2009
Chair, George Holescko, 2000
Chair, J. Michael DuMond, 1994

Member, Shael Wolfson, 2000

Member, Lehr Eliason, 2000
Member, Steve Muri, 2000
Member, Ken Meier, 1998
Member, Tarteshia Williams, 1995
Member, Richard Page, 1994

PhD Dissertation:

Chair, James Farrell, 2009
Chair, Mark Keightley, 2008
Chair, Ali Al-Malki, 2007
Chair, Carter Doyle, 2005
Chair, Edward Wolpert, 1998
Chair, J. Michael DuMond, 1997

Member, Bogdan Daraban, 2007
Member, Russell Engel, 2007
Member, Li Feng, 2006
Member, Chuck Skipton, 2003
Member, Nicole Yurgin, 2003
Member, Jennifer Troyer, 1999
Member, Josefina Tranfa, 1999
Member, Shaliesh Bandarhi, 1998
Member, James Freeman, 1998
Member, Brian Nottage, 1998
Member, Ben Shippen, 1995
Member, Ed Schumacher, 1994

Outside Member, Stephanie Burge, Sociology, 2006
Outside Member, Reg Albritton, Special Education, 2005
Outside Member, Kim Shuey, Sociology, 2001
Outside Member, Andrea Willson, Sociology, 2001
Outside Member, Phyllis Keys, Finance, 1998

David A. Macpherson

Depositions and Trial Testimony: 2008 to 2012

1. Angela Speed and Adrian Speed vs. Hertz Corporation
   Atty: Dawn Pompey Whitehurst; Brevard County, Florida; gave deposition; wrongful injury; 2008; Case No: 05-2005-CA-065447

2. Patricia Morrison vs. Anthony Mork and Microspine Surgery
   Atty: Steven Andrews; Walton County, Florida; testified at trial; wrongful injury; 2008; Case No: 06000249CA.

3. James Tomaselli vs. State of Florida, Department of Corrections
   Atty: Gordon Leech; Martin County, Florida; gave deposition; wrongful termination; 2008; Case No: 01-554-CA.

4. Russell Martin, et al. v. City of Atlanta, et al.
   Atty: Andrew Coffman; U.S. District Court, Northern District of Georgia, Atlanta 5Division; gave deposition; racial discrimination; 2008; Case CA File No: 1:07-cv-00326-BBM

5. McCabe, et al. v. Harmon Fruit, et al.
   Atty: Larry Perry; Polk County, Florida; gave deposition; wrongful death; 2008; Case 53-2005-CA-003612-0000-00

6. Thomas Faulkner v. Michael Chertoff and Department of Homeland Security
   Atty: John Davis; U.S. District Court; Northern District of Florida; gave deposition; wrongful termination; 2009; Case 4:08CV341-SPM/WCS

7. Matthew Debord and Tabitha Debord vs. G & S Material Service et al.
   Atty: Hubert Brown; U.S. District Court; Northern District of Florida; gave deposition; wrongful injury; 2009; Case 3:07cv365-LAC/MD

8. Jessica Loveday vs. USA
   Atty: Anthony Caggiano; U.S. District Court; Northern District of Florida; gave deposition; wrongful injury; 2009; Case 1:08cv205/SPM

9. Julia Keyes vs. AIG
   Atty: Larry Perry; Jackson County, Florida; gave deposition; wrongful injury; 2009; Case 08706CA

10. Estate of Linda DePuy vs. Broeseker et al.
    Atty: Steve Andrews; Leon County, Florida; gave deposition; wrongful death; 2009; Case 2007 CA 2509

11. Oliver and Sollman vs. VSoft Inc.
    Atty: Larry Pankey; U.S. District Court, Northern District of Georgia, Atlanta Division; gave deposition; age discrimination; 2009; Case CA File No: 1:09-CV-0185

12. Yolanda Young vs. Covington and Burling, LLP
    Atty: Latif Damon; U.S. District Court for the District of Columbia; gave deposition; racial discrimination; 2009; Case CA File No: 1:09-CV-0464 RBW

13. Deborah Suboh vs. Mark Bergeson et al.
    Atty: Stephanie Wright and Charlotte Perrell; Georgia, Dekalb County; Case 07A77585-5, gave deposition; legal malpractice; 2010.

14. Rolando Simmons vs. Davis and Peterson
    Atty: Hubert Brown; Florida, Calhoun County; Case 2008-0150-CA, gave deposition and testified at trial; medical malpractice; 2010.

15. Lorie J. Marshall, et al. vs. H & R Block Tax Services, Inc.
    Atty: Allan Steyer; U.S, U.S. District Court
    Southern District of Illinois; Case No. 3:08-CV591-MJR; gave deposition; consumer damages; 2010.

16. Daren Davis vs. Joseph Austin and Terry Roberts Work Site
    Atty: Anthony Caggiano; Florida, Osceola County; gave deposition; wrongful injury; 2010; Case 2006 CA 002997 AN

17. David Darrow vs. Adventist Health Systems/Sunbelt Inc.
    Atty: Anthony Caggiano; Florida, Orange County; gave deposition; wrongful injury; 2010; Case 48-2009-CA-004897-0

18. Samuel Gonzalez vs. Gurdev Singh Nijjar et al.
    Atty: Ramon Rodriguez; Texas, El Paso County; gave deposition; wrongful injury; 2010; Case 2007-011

19. John Davis vs. Devereux Foundation.
    Atty: Thomas Brown; Florida, Brevard County; gave deposition; wrongful injury; 2010; Case 99-15992-CA-F

20. Al Kowalski vs. et al. YellowPages.Com, LLC
    Atty: Peter Pearlman; U.S. District Court Southern District of New York; Case No. 10-7318 (PGG); gave deposition; consumer damages; 2011.

21. Christina Glover and Jason Glover vs. Publix Super Markets
    Atty: Phelicia Steill; Florida, Leon; Case No. 08 CA 2695; gave deposition; wrongful injury; 2011.

22. Lissette Cartagena and William Cartagena vs. Bracero et al.
    Atty: Thomas Brown; Florida, Orange County; Case No. 07-CA-2645 DIV 34; gave deposition and testified at trial; wrongful injury; 2011.

23. Lillie Conyers and James Conyers vs. Werner Enterprises et al.
    Atty: Thomas Brown; Florida, Jackson County; Case No. 09-1174-CA; gave deposition; wrongful injury; 2011.

24. Shannon McCants vs. Wackenhut Corporation
    Atty: Dawn Pompey Whitehurst; Duval County, Florida; gave deposition and testified at trial; wrongful death; 2011; Case No: 16-2008-CA-014834

25. Christina Whipple versus R.E.S.A, Inc.
    Atty: Susan Haney; Bexar County, Texas; gave deposition; business damages; 2011; Case No.: 2009-CI-17074

26. Daniel Plouffe, et al. versus General Motors, LLC
    Atty: Michael Pitt; Wayne County, Michigan; gave deposition; age discrimination; 2012; Case No.: Case No. 11-007645-CL

27. Johnny Cash versus State Farm
    Atty: Steven Andrews; Leon County, Florida; testified at trial; wrongful injury; 2012; Case No.: Case No. 10-CA-2429

June 2014

MISSOURI
Restaurant Association
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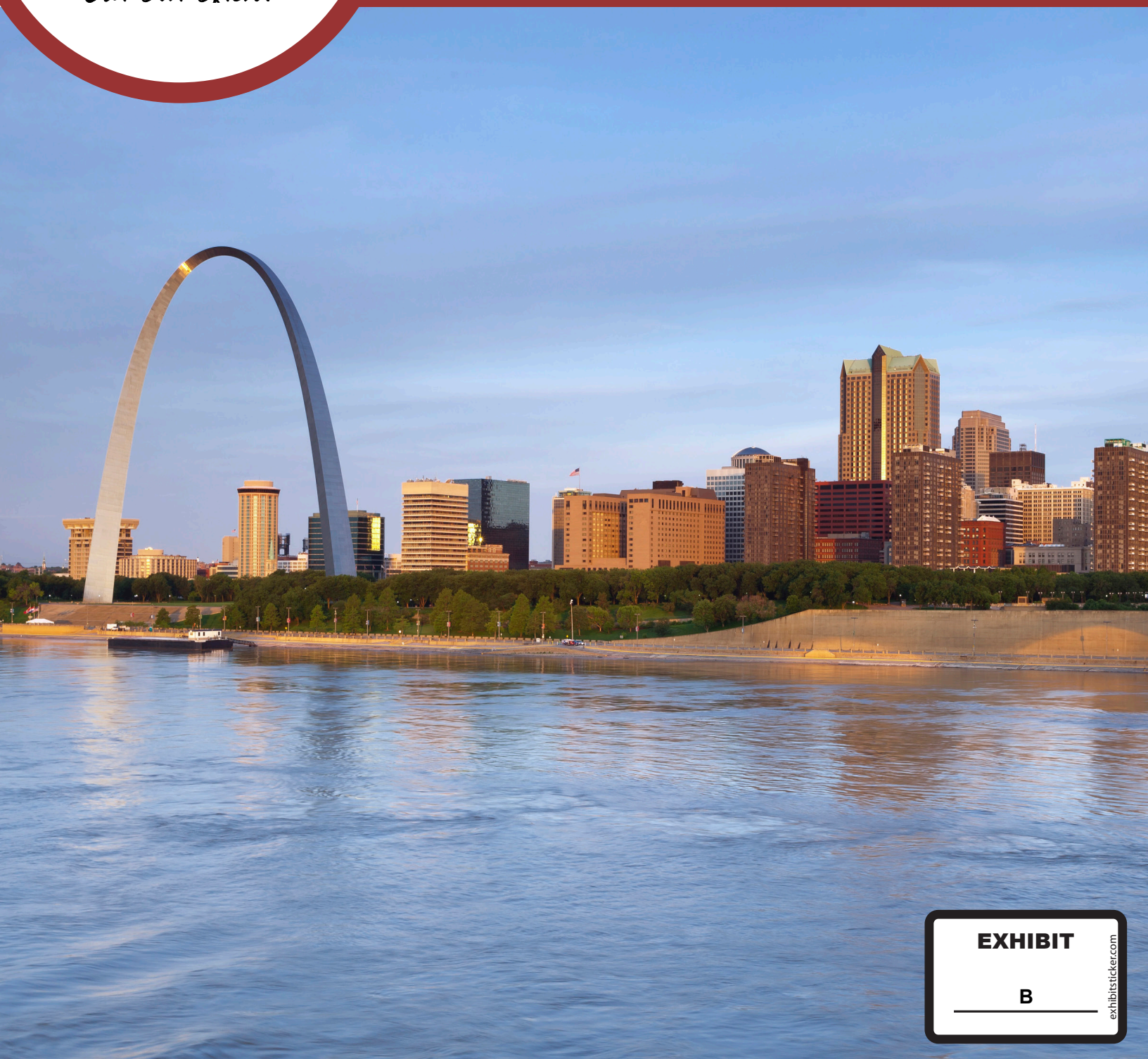
The Impact of a $10.10 Minimum Wage on Jobs and Taxpayer Costs in Missouri



ABOUT THE MISSOURI RESTAURANT ASSOCIATION

With origins dating back to 1916, the Missouri Restaurant Association (MRA) is a statewide trade association representing over 1,500 member establishments. The association's membership is diverse, and includes full service, fast casual, and quick service restaurants, cafeterias, hotels, schools, institutions, contract feeders, and ancillary foodservice providers such as theme parks. The association has been successful in securing support from virtually every segment of the foodservice and hospitality industry.

MRA includes seven chapters as extensions of the parent organization, each with its own Officers, Board of Directors, and limited budget. The association is governed by a Board of Directors comprised of five Officers, 33 Directors, and each President of the seven affiliated chapters.

MRA is dedicated to serving the needs of the foodservice and hospitality industry, enhancing and improving its growth and development, assisting and educating its members in operating more effectively, improving the political and social environment in which the industry conducts business, for the benefit of its members, patrons, employees, and the well-being of the community.

David A. Macpherson is the E.M. Stevens Professor of Economics at Trinity University. He received undergraduate and doctoral degrees in economics from Pennsylvania State University.

Dr. Macpherson has published over 60 articles in leading economics and real estate journals including Review of Economics and Statistics, Industrial and Labor Relations Review, Journal of Labor Economics, Journal of Human Resources, and Journal of Real Estate Economics and Finance. His research has been funded by a variety of entities including the National Science Foundation, Florida Legislature, and the National Association of Realtors. He is co-author of the undergraduate labor economics text, Contemporary Labor Economics, as well as the principles of economics text, Economics: Private and Public Choice. He is included in Who's Who in Economics, Fourth Edition, which includes the 1,200 most frequently cited economists.

THE IMPACT OF A $10.10 MINIMUM WAGE ON JOBS AND TAXPAYER COSTS IN MISSOURI

June 2014

Economic Analysis by **Dr. David Macpherson**
Trinity University

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EXECUTIVE SUMMARY

Missouri's minimum wage of $7.50 is linked to rise in most years with the inflation rate. But some state legislators and labor unions would like to raise that figure even higher. For instance, a recent labor union-organized bus tour in the state promoted a $10.10 minimum wage in St. Louis.

Proponents have enthusiastically pointed to the benefits of the $10.10 policy. But there's been far less discussion of the costs involved with a $10.10-an-hour minimum wage—both the cost on employment, and the cost to taxpayers.

In this study, labor economist David Macpherson of Trinity University uses Census Bureau data to estimate the impact on Missouri's labor market and budget from raising the minimum wage to $10.10 an hour. He also provides separate results for the St. Louis metropolitan area.

Dr. Macpherson's employment estimates follow the methodology used by the nonpartisan Congressional Budget Office in its report earlier this year estimating the impact of a $10.10 minimum wage nationwide, which in turn relied on 60 different empirical studies to formulate its estimates.

Statewide, he finds that over 15,000 jobs would be lost at the $10.10 wage level—with 9,300 of those jobs being held by women. In the St. Louis metropolitan area, approximately 4,800 jobs would be lost from a $10.10 minimum wage.

The cost to taxpayers would be significant: There are approximately 40,000 state and local employees whose wages would be affected by the $10.10 increase in Missouri, for a combined cost to taxpayers of $87 million annually.

Raising wages is an admirable goal, but the evidence suggests that accomplishing this goal with a blunt wage mandate could do more harm than good.

RESULTS

The minimum wage is one of the most hotly-debated topics in the political world. Some legislators claim that a higher base wage will stimulate the economy; others claim that it will reduce jobs when affected employers can't offset the higher costs through higher prices.

Economists, who have studied the issue since the late 1940s, tend to take a skeptical view of minimum wage increases. Since the early 1990s, for instance, roughly 85 percent of the most credible research on the minimum wage points to job loss for less-skilled groups. The nonpartisan Congressional Budget Office (CBO), in an evaluation of President Obama's proposed $10.10 minimum wage increase, reviewed 60 different studies and concluded that the policy would eliminate 500,000 jobs if enacted.

The estimates that follow, of the employment impact of a higher minimum wage on Missouri's labor market, were performed by Dr. David Macpherson of Trinity University. Dr. Macpherson followed closely the methodology used by the CBO in its 2014 report. Dr. Macpherson also estimates the taxpayer costs of a higher minimum wage, as many state and local public employees will see their earnings increase when the minimum wage rises.

Dr. Macpherson's methodology is presented in detail in a technical appendix.

Estimated Employment Effects of a $10.10 Minimum Wage in Missouri

Statewide, Dr. Macpherson finds that increasing the minimum wage to $10.10 would eliminate over 15,000 jobs—approximately 60 percent of which are jobs held by women. The bulk of the job losses would be concentrated among individuals with a high school degree or less, and among people who work in the retail or leisure & hospitality industries.

(Note: Totals have slight discrepancies due to rounding.)

Estimates by Gender

	Job Losses
Male	6,311
Female	9,364
TOTAL	**15,705**

Estimates by Age

Age	*Job Loss*
<=21	9,237
22-25	1,532
26-30	1,023
31-40	1,175
41-50	980
51 +	1,759

Estimates by Race

Race	*Job Loss*
White	13,299
Black or Other Race	2,406

RESULTS CONTINUED

Top Three Industries Affected	
Industry	*Job Loss*
Retail Trade	3,835
Arts, Entertainment, Recreation, Accommodations, and Food Services	6,039
Healthcare	1,199

Estimates by Education	
Education	*Job Loss*
Less than High School	5,555
High School Grad, No College	4,921
Some College	4,428
Undergrad or Graduate Degree	802

City-Specific Minimum Wage Employment Impacts

The city of St. Louis has been the subject of a number of protests calling for a higher minimum wage. Dr. Macpherson analyzed the employment impact of a $10.10 minimum wage in the St. Louis metropolitan area, providing breakouts by gender and education where the data permits. He estimates that the wage hike would eliminate approximately 5,000 jobs—just over half of which would be jobs held by women.

Impact on St. Louis Metro Area of a $10.10 Minimum Wage	
Gender	*Job Loss*
Male	2,033
Female	2,767
TOTAL	**4,800**
Race	*Job Loss*
White	3,641
Black or Other Race	1,158
Education	*Job Loss*
High School Grad or Less	3,097
Some College, Undergrad or Graduate Degree	1,703

RESULTS CONTINUED

Missouri Taxpayer Costs of a $10.10 Minimum Wage

Dr. Macpherson estimates that approximately forty thousand state & local public employees would be affected by a minimum wage increase to $10.10 an hour. These additional wage costs translate to new costs for state and local taxpayers. Following the methodology described in detail in the technical appendix, Dr. Macpherson estimates both the straight wage cost of a $10.10 minimum wage, as well as the total compensation cost with Social Security, Medicare, workers compensation, and unemployment insurance included. Statewide, taxpayers would shoulder an additional $87 million in costs if the base wage was increased to $10.10 an hour and public employees were covered by the new wage.

Missouri Taxpayer Costs of a $10.10 Minimum Wage	
# of State & Local Workers	304,588
# Affected By $10.10 MW	40,103
Annual Wage Cost	$79,629,374
Annual Compensation Cost	$87,004,355

Note: Annual compensation costs include the cost of worker's compensation, FICA, and unemployment insurance benefits.

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TECHNICAL APPENDIX

Estimating Employment Loss and the Cost to State and Local Government of an Increase in the Minimum Wage

Dr. David Macpherson
E.M. Stevens Professor of Economics
Trinity University

This paper describes how we estimate the employment loss and the cost to state and local governments of a proposed increase in the minimum wage effective on January 1, 2015.

Data and Sample

First, we use data from the Current Population Survey (CPS) Outgoing Rotation Groups (ORG) from January 2011 through December 2013. For each worker in the sample, we calculate their wage rate. We also adjust the wage rate to reflect a forecast of wages in 2015. This is done in two steps. First, based on legislation enacted as of April 2014, we estimate the minimum wage that would be in effect in January 2015 for each state and city that we consider. If a state or city has an indexed minimum wage, we increase the January 2014 state or city minimum wage by the Congressional Budget Office (CBO) inflation forecast for 2014 of 1.7%.

Since we use data from 2011 through 2013, we also follow the CBO approach for forecasting what the wage distribution would be in 2015. This is done in two steps. First, we adjust wages observed prior to 2013 to reflect 2013 minimum wage legislation. For example, if the minimum wage in a state was $7.25 in 2011 and grew to $8.00 by 2013, anyone who earned between $7.25 and $8.00 in 2011 would have their wage increased to $8.00. After wages are adjusted to 2013 levels, we assume that all wages grow by 2.9% in 2014. Using the resulting 2015 distribution of wages, we adjust for minimum wage legislation that would increase the minimum between 2013 and 2015. Anyone earning a wage between the 2013 and 2015 minimum wage is assigned a wage matching the 2015 minimum wage.

After generating the forecast 2015 distribution of wages reflecting wage growth and existing minimum wage legislation, we identify workers who would be affected by additional changes to the 2015 minimum wage as those with wages between the predicted minimum wage legislated for 2015 (or up to $.25 below it) and the proposed minimum.

To estimate the number of affected workers, we take two steps. First, for each state, we estimate the number of affected workers for 2013. Second, we adjust the weights in the 2011 and 2012 data so that the state-specific number of affected workers implied by the 2011 and 2012 data matches that for 2013. This adjustment is designed to correct for the changing economic climate as the economy recovers from the great recession and to generate estimates that are as close as possible to the most recent data (2013). After we adjust the 2011 and 2012 weights, we estimate the number of affected workers by summing their earnings weights and dividing the total by 36 (the number of months of data).

[1] Also, following CBO, anyone earning up to $.25 less than the 2011 minimum wage would have their wage increased by the amount that the minimum wage increased (i.e. a $7.00 wage would be increased to $7.75 in this example). This approach is used to adjust for the fact that many workers round their answers when asked about their wage.

TECHINCAL APPENDIX CONTINUED

Employment Loss

To estimate employment loss, for each affected worker we compute:

L = e *(Proposed Min Wage /Min Wage 2015 – 1)

where e is an assumed elasticity of employment with respect to changes in the minimum wage, Min Wage 2015 is the minimum wage currently legislated for 2015, and Proposed Min Wage is the minimum wage that is being proposed for 2015. Thus, for example, if a worker is projected to earn the federal minimum of $7.25 in 2015, the expected reduction in employment resulting from a $10.10 minimum wage in 2015 if e=.45 is .45*(10.10/7.25 – 1) = .18. That is, for every 100 workers currently earning the federal minimum, the expectation is that 18 would lose a job if the minimum wage elasticity is .45.

To estimate the aggregate employment loss in the economy, we use earnings weights to sum L across workers. We also follow the Congressional Budget Office (2014) and use an elasticity of 0.15 for non-teenagers and 0.45 for teenagers.

Cost to State and Local Government

We use the same data to estimate the cost to state and local government of a proposed minimum wage hike. We apply the same definition of affected workers described above and estimate the number of state and local government workers affected by a minimum wage hike. We do not, however, assume that there is any job loss for state and local workers as we do not have an appropriate elasticity estimate specific to state and local workers. To the extent that state or local governments reduce hours or employment in response tothe minimum wage hike, our estimate of the cost of the hike would be overstated.

To estimate the increase in annual payroll cost resulting from an increase in the minimum wage, we estimate the increase in annual cost for each worker as:

(Proposed Min Wage-Min Wage 2015)*weekly hours*52

We then multiply the increase in annual cost by the earnings weight for each worker and sum across workers. Since an increase in wages also requires increased employer contributions for Social Security, Medicare, workers' compensation and unemployment insurance, we apply an estimate of the payroll tax rate for these mandatory programs to calculate the additional cost for these programs.

For each state and city considered, we provide tables summarizing the number of affected workers, employment loss, and the distribution of employment loss by sex, education, race, age and industry. Given that we use three years of data, a rule of thumb for minimum sample size required to achieve a reasonably accurate estimate of the employment loss is to require at least 30,000 people be in the relevant category. For example, if there are fewer than 30,000 people projected to be in a particular industry category, the Bureau of Labor Statistics would not report the estimate due to a lack of reliability based on the variance of the estimate relative to its mean.

In addition to the estimate of employment loss, for each state or city considered, we estimate the number of state and local workers that would be affected by the minimum wage hike and the total annual cost to government in terms of wages and total compensation. As with the employment estimates, we advise caution in interpreting estimates that are based on fewer than 30,000 affected workers.

[3] Congressional Budget Office, "The Effects of a Minimum-Wage Increase on Employment and Family Income," February 2014.

[4] For workers paid by the hour the reported hourly wage was used. For workers who are not paid by the hour, we calculate the hourly wage by dividing usual weekly earnings by usual weekly hours. Overtime pay was calculated as time and one-half for hours above 40 hours for hourly workers.

[5] The assumed payroll tax for Medicare and Social Security is 7.65 percent. To estimate the payroll tax for workers' compensation and unemployment insurance, we use unpublished data from the 2010 Employer Cost of Employee Compensation database for state and local workers in the relevant region in 2010.

The State Auditor's office did not receive a response from the **Department of Elementary and Secondary Education, Adair County, Boone County, Callaway County, Cass County, Clay County, Cole County, Jackson County, Jasper County, St. Charles County, St. Louis County, Taney County,** the **City of Cape Girardeau,** the **City of Columbia,** the **City of Jefferson,** the **City of Joplin,** the **City of Kirksville,** the **City of Mexico,** the **City of St. Joseph,** the **City of St. Louis,** the **City of Springfield,** the **City of Union,** the **City of Wentzville,** the **City of West Plains, Cape Girardeau 63 School District, Hannibal 60 School District, State Technical College of Missouri, Metropolitan Community College,** and **St. Louis Community College, Harris-Stowe State University, Lincoln University,**. **Northwest Missouri State University, Southeast Missouri State University,** and **Truman State University.**

Fiscal Note Summary

State and local governments estimate no direct costs or savings from the proposal, but operating costs could increase by an unknown annual amount that could be significant. State and local government tax revenue could change by an unknown annual amount ranging from a $9.5 million decrease to a $343 million increase depending on business decisions.