MISSOURI STATE AUDITOR'S OFFICE
FISCAL NOTE (16-068)

Subject

Initiative petition from Lara Granich regarding a proposed amendment to Chapter 290 of the Revised Statutes of Missouri. (Received July 22, 2015)

Date

August 11, 2015

Description

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

The amendment is to be voted on in November 2016.

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 Legislators, 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,** and **St. Louis Community College.**

Lara Granich provided information as a proponent of the proposal to the State Auditor's office.

Edward D. Greim 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 Economic Development** indicated Section 290.502.3 (for each initiative petition) would require the department to increase wages for several employees each year assuming the money is appropriated for the increase. For each hourly increase proposed, they prepared the estimated increased expenditures on wages per year over the current wages expenditures.

Cost to increase:

- $9.00/hr = $915.20/yr
- $10.00/hr = $1,955.20/yr
- $11.00/hr = $3,995.20/yr
- $12.00/hr = $14,238.61/yr
- $13.00/hr = $39,318.02/yr
- $14.00/hr = $78,388.75/yr

They calculated these increased costs by assuming full-time workers work an average of 2087 hours/year. They assumed part-time workers work an average of 20 hours/week for an average of 1040 hours/year.

Officials from the **Department of Elementary and Secondary Education** indicated the total estimated costs for all state funds will be $0 for FY (fiscal year) 2017, $7,078 for FY 2018, $87,363 for FY 2019, $347,819 for FY 2020, $790,578 for FY 2021, $1,164,782 for FY 2022, $1,449,700 for FY 2023, and $807,962 for FY 2024.

Officials from the **Department of Health and Senior Services** (DHSS) indicated the total estimated net cost for all state funds will be $5,658,266 for FY 2017, $24,757,841 for FY 2018, $53,680,575 for FY 2019, $87,815,607 for FY 2020, $127,886,685 for FY 2021, $174,707,511 for FY 2022, and $229,884,672 for FY 2023.

DHSS defers to the Office of Administration regarding the statewide fiscal impact of this proposed legislation relating to state employee wages.

Small Medicaid Home and Community Based Services (HCBS) vendors and providers would be required to ensure attendants are paid a minimum of $9.00 per hour for calendar year 2017, $10.00 per hour for calendar year 2018, $11.00 per hour for calendar year 2019, $12.00 per hour for calendar year 2020, $13.00 per hour for calendar year 2021, $14.00 per hour for calendar year 2022, and $15.00 per hour for calendar year 2023.

DHSS assumes HCBS providers and vendors would request an increase in the reimbursement rate to offset the higher minimum wage rate.

- The average growth in units of service per year from Fiscal Year 2012 to Fiscal Year 2014 is 9.39 percent. (Units are included from Agency Model Personal Care, Residential Care Facility Personal Care, Consumer Directed Services Personal Care, Adult Day Care, Independent Living Waiver Personal Care, Advanced Personal Care Agency Model, Advanced Personal Care Residential Care Facility, Basic In-Home Respite, Advanced Respite, Healthy Children and Youth Waiver Personal Care, Healthy Children and Youth Program Advanced Personal Care, AIDS Waiver Personal Care, and Medically Fragile Adult Waiver Attendant Care .) Fiscal Year 2014 actual units of service (168,363,392) were multiplied times the 9.39 percent average growth rate, which yields an estimated 220,371,779 units of service for Fiscal Year 2017; 241,060,146 for Fiscal Year 2018; 263,690,724 units for Fiscal Year 2019; 288,445,846 units for Fiscal Year 2020; 315,524,964 units for FY 2021; 345,146,253 units for FY 2022; and 377,548,370 units for FY 2023.
- Actual wage data for the individuals involved in delivery of units of service is not available, but DHSS has been advised that the current average wage for personal care attendants is $8.50 + $0.89 in taxes (taxes at 10.45 percent) equals $9.39 per hour, or $2.35 per 15 minute unit.
- The analysis determines the difference between the proposed unit rate for wages and taxes versus the current average wage rate for wages and taxes.
- Services would be reimbursed at the Federal Medical Assistance Percentage (FMAP) rate. For this estimate, DHSS is using FY 2016 blended rate of 36.68 percent General Revenue and 63.32 percent Federal.
- The implementation date is 1/1/2017 for $9.00 per hour for calendar year 2017; one-half of Fiscal Year 2017.
- The implementation date is 1/1/2018 for $10.00 per hour for calendar year 2018.
- The implementation date is 1/1/2019 for $11.00 per hour for calendar year 2019.
- The implementation date is 1/1/2020 for $12.00 per hour for calendar year 2020.
- The implementation date is 1/1/2021 for $13.00 per hour for calendar year 2021.
- The implementation date is 1/1/2022 for $14.00 per hour for calendar year 2022.
- The implementation date is 1/1/2023 for $15.00 per hour for calendar year 2023.

Officials from the **Department of Insurance, Financial Institutions and Professional Registration** indicated they defer to the Office of Administration for response to this petition regarding their employee cost as it relates to raising the minimum wage.

With regard to other issues this petition, if passed, will have no cost or savings to their department.

Officials from the **Department of Mental Health** indicated they defer to the Office of Administration for the fiscal impact.

Officials from the **Department of Natural Resources** indicated the estimated total costs for salaries, fringe benefits, equipment and expenses for all state funds will be $111,081 for FY 2017, $273,155 for FY 2018, $335,573 for FY 2019, $381,796 for FY 2020, $533,892 for FY 2021, $931,422 for FY 2022, and $1,682,181 for FY 2023.

Section 290.502.3 would require the department to increase the minimum wage rate to $9.00 per hour effective January 1, 2017, to $10 per hour effective January 1, 2018, to $11 per hour effective January 1, 2019, to $12 per hour effective January 1, 2020, to $13 per hour effective January 1, 2021, to $14 per hour effective January 1, 2022, and to $15 per hour effective January 1, 2023, or to the wages at the same rate(s) set under the provisions of federal law as the prevailing federal minimum age applicable to those covered jobs in interstate commerce, whichever is higher the minimum wage shall be updated every January 1 thereafter.

Section 290.502.4 and 290.512.3 provides an exemption for public bodies from the provision of 290.502.3 if appropriations for wages at those rates are not provided.

Section 290.512.2 would require the department to increase minimum wage for employees that receive and retain gratuities so that total compensation is at least the minimum wage specified in 290.500 to 290.530. Effective January 1, 2017 the department would pay at least an excess of sixty percent of the minimum wage rate. Effective January 1, 2018 the department would pay at least an excess of eighty percent of the minimum wage rate. Effective January 1, 2019 the department would pay the minimum wage.

Section 290.529 makes the provisions of sections 290.500 to 290.530 severable.

The department anticipates the cost of the proposed legislation to start at $111,081 annually for fiscal year 2017 and ultimately increase to $1,682,181 in fiscal year 2023.

This legislation requires the minimum wage to be reviewed and adjusted every January 1.

For full time employees throughout their department they compared their current hourly wage rate to the minimum wage rate in the proposed legislation, taking the difference by 2,080 hours multiplied by the fringe rate for full time staff.

Missouri State Parks employs between 500-750 seasonal positions each year. In order to reflect a full year of seasonal employment, they based on their analysis off of FY14 staffing levels and upgraded their hourly wage to January 1, 2015. They then analyzed each January 1 upgrade to minimum wage compared to the prior year estimate. They assumed the per fiscal year designated minimum wage amount would be greater than the federal minimum wage.

Missouri State Parks does employ staff that is eligible for tips. For those individuals, they are required to ensure that their total wage plus tips meet or exceed the established minimum wage rate for non-tip staff. Therefore, they assumed the same minimum wage for estimated impact as other staff.

Seasonal positions' fringe benefit rate is 7.65 percent. Full time staff would begin to be given minimum wage increases in fiscal year 2020.

They also made the assumption that the personal service appropriations would be adjusted according to the levels necessary to provide the increased minimum wages provided in the law.

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 and defer to Office of Administration for impact as an employer.

Officials from the **Department of Revenue** indicated this petition will have no fiscal impact on their department.

Officials from the **Department of Public Safety** indicated they would not be able to determine the effect of this legislation, and would expect there would be a general response provided by OA/Personnel.

Officials from the **Department of Social Services** indicated they defer to the Office of Administration for the costs related to this petition.

Officials from the **Governor's office** indicated there should be no fiscal impact to their office.

Officials from the **Missouri House of Representatives** indicated their cost calculations related to this initiative petition is as follows based on 15 part-time employees working 1,039 hours per year:

2017 @ $9.00/hr.	No impact
2018 @ $10.00/hr.	No impact
2019 @ $11.00/hr.	$15,585 annual
2020 @ $12.00/hr.	$30,170 annual
2021 @ $13.00/hr.	$46,755 annual
2022 @ $14.00/hr.	$62,340 annual
2023 @ $15.00/hr.	$77,925 annual

Officials from the **Department of Conservation** indicated that this proposal, which would increase the minimum wage, would result in estimated additional annual cost to their department as follows: 1) an increase to $9/hour-$290,319; 2) an increase to $10/hour-$371,906; 3) an increase to $11/hour-$481,557; 4) an increase to $12/hour-$632,118; 5) an increase to $13/hour-$791,089; 6) an increase to $14/hour-$850,229; and 7) an increase to $15/hour-$1,191,902. This reflects pay increases necessary to increase hourly and salaried pay rates to the proposed new minimum wage.

Officials from the **Office of Administration (OA)** indicated the proposal amends Sections 290.502, 290.512, 290.527, and 290.529 RSMo.

Section 290.502, RSMo. increases the minimum wage to $9.00 per hour, beginning January 1, 2017 and by another $1.00 per hour each year until it reaches $15.00 per hour beginning January 1, 2023. Thereafter, the minimum wage will be adjusted annually based on the increase/decrease in the cost of living. The proposal also requires employers of employees who receive and retain compensation in the form of gratuities to pay the full minimum wage beginning January 1, 2019.

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 Bureau of Labor Statistics, in 2013, Missouri had 73,000 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);
- Lower business investment (if employers' payrolls increase);
- Increased prices as firms pass–through labor costs.

This proposal will increase state personnel costs at various state agencies. However, the proposal makes the increase for public bodies subject to appropriation. The estimated cost of the minimum wage increases are:

Fiscal Year	Wage Rate	Time period	General Revenue Cost (including fringe benefits)	Total Cost (including fringe benefits)
2017	$9.00/hr	January –June	$171,193	$464,938
2018	$9.00/hr	July – December		
	$10.00/hr	January – June	$513,523	$1,673,380
2019	$10.00/hr	July – December		
	$11.00/hr	January –June	$1,464,340	$4,407,549
2020	$11.00/hr	July – December		
	$12.00/hr	January – June	$6,222,694	$13,640,373
2021	$12.00/hr	July – December		
	$13.00/hr	January – June	$17,386,077	$33,385,765
2022	$13.00/hr	July – December		
	$14.00/hr	January – June	$34,452,207	$63,042,619
2023	$14.00/hr	July – December		
	$15.00/hr	January – June	$62,036,019	$108,793,353

[1] http://www.bls.gov/cps/minwage2013.pdf

Sections 290.512, 290.527 and 290.529 RSMo. will 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 on their office.

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 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 2013, at the August and November elections, there were 5 statewide Constitutional Amendments or ballot propositions that cost $2.17 million to publish (an average of $434,000 per issue). In FY 2015, the General Assembly changed the appropriation so that it was no longer an estimated appropriation and their office was appropriated $1.19 million to publish the full text of the measures. Due to this reduced funding, their office reduced the scope of the publication of these measures. In FY 2015, at the August and November elections, there were 9 statewide Constitutional Amendments or ballot propositions that cost $1.1 million to publish (an average of $122,000 per issue). Despite the FY 2015 reduction, 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 substantial direct impact on their office.

Officials from the **State Treasurer's office** indicated the following is the estimated fiscal impact to their office for the years 2017 - 2019:

2017: $0
2018: $2,920
2019: $8,760

Officials from the **City of Columbia** provided the following cost estimates:

Year of Increase	Min. Wage	Total all Employees	Incremental Increase from Previous Year
1/17	$9	$ 945,659	
1/18	$10	$1,646,147	$700,488
1/19	$11	$2,352,336	$706,189
1/20	$12	$3,100,824	$748,488
1/21	$13	$3,938,012	$837,188
1/22	$14	$4,929,800	$991,788
1/23	$15	$6,277,589	$1,347,789

Assumption: Only impact is from minimum wage paid to employees and not from gratuities or value of goods and services.

Officials from the **City of Kansas City** indicated approximately 465 employees, mostly part time and seasonal employees, are currently paid less than $15.00; of those, almost 250 are full time positions paid between $14 and $15 per hour. Therefore, the greatest impact will be felt beginning in 2023. Under this initiative petition, there would be a salary increase to the city in the approximate amounts per year:

2017 ($9/hr) : $60,000
2018 ($10/hr): $113,000
2019 ($11/hr): $126,500
2020 ($12/hr): $140,000
2021 ($13/hr): $178,000
2022 ($14/hr): $197,000
2023 ($15/hr): $535,082

Officials from the **City of Raymore** indicated the sum effect on each year's proposal that will increase salary within the City's part-time seasonal staff will be $7,238.85 for CY 2017, $12,510,35 for CY 2018 (an increase of $5,271.50), $19,525.72 for CY 2019 (an increase of $7,015.37), $27,836.04 for CY 2020 (an increase of $8,310.32), $37,202.50 for CY 2021 (an increase of $9,366.46), $48,103.75 for CY 2022 (an increase of $10,901.25), and $59,005.00 for CY 2023 (an increase of $10.901.25).

The city has calculated the sum effect on each year's proposal that will increase salary within the city's part-time seasonal staff within each petition. At this time, the city is assuming that its proposed step chart will continue to be effected by the minimum wage and be adjusted every couple years to be competitive. However, there are many unknowns, and the city has simply included its part-time staff that will be effected.

Officials from the **City of St. Louis** indicated estimated annualized costs to the city of $116,601 for CY 2017, $211,138 for CY 2018, $420,965 for CY 2019, $706,298 for CY 2020, $1,196,768 for CY 2021, $2,704,098 for CY 2022, and $5,073,747 for CY 2023.

This initiative petition proposes an amendment Chapter 290, RSMo, to gradually raise the minimum wage starting at $9.00 per hour on January 1, 2017 to $15.00 per hour on January 1, 2023.

Subject to annual appropriation, this initiative petition would increase costs of salaries of city employees (both full and part-time) that would otherwise not be earning the wages at the levels specified in the proposed amendment. For these purposes, current employee wages are assumed to increase in accordance with existing employee pay plan provisions through 2016. The proposed amendment could also impact city revenues both positively and negatively. Should total wage base rise, employer based earnings and payroll taxes will increase accordingly. Likewise, any job losses that can be attributed to the wage increases will result in a decline in employer based and other tax revenues. The net impact of the changes in city workforce and wage base that would result from the proposed amendment is indeterminate at this time.

Officials from **University of Missouri** indicated they anticipate the legislative proposal would create an overall cost of between $60-70 million after all rate increases were implemented.

Lara Granich provided the following information as a proponent of this initiative petition.

August 5, 2015
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

Version 4 (Increase to $9, then gradually to $13, tipped 60%)
Version 5 (Increase to $9, then gradually to $14, tipped 60%)
Version 6 (Increase to $9, then gradually to $15, tipped sub-minimum phased out)
Version 7 (Increase to $9, then gradually to $14, tipped sub-minimum phased out)
Version 8 (Increase to $9, then gradually to $13, tipped sub-minimum phased out)
Version 9 (Increase to $9, then gradually to $12, tipped sub-minimum phased out)
Version 10 (Increase to $9, then gradually to $11, tipped sub-minimum phased out)

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 seven proposed Minimum Wage Initiative Petitions.

Our analysis estimates the impact of the seven 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.

We are building on analysis provided for Versions 1-3 of this initiative. However, some of the analysis tools were unavailable to us in the timeframe for submitting these versions, and therefore we want to acknowledge some gaps in the information provided.

As these petitions exclude public workers, we do not include in our analysis an estimate of the impact on state and local payroll costs of the minimum wage increases.

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

We estimate that, under the three versions of the petition, increases in total wages in the state will be as follows:

Proposed Min Wage Level	Size of Increase*	Total Estimated Workers**	Workers Affected***	Workers Affected as % of Total Workers	Total Wage Increase****
$11.00	$3.20	2,845,927	880,593	30.94%	$4,167,807,617
$12.00	$4.20	2,845,927	995,901	34.99%	$5,508,377,721
$13.00	$5.20	2,845,927	1,092,551	38.39%	*****
$14.00	$6.20	2,845,927	1,208,950	42.48%	*****
$15.00	$7.20	2,845,927	1,351,386	47.48%	$10,801,510,192

*Over the legislated MO 2015 minimum wage of $7.65 + assumed 2% cost of living adjustment to MO minimum wage

**Based on 2013 American Community Survey for the State of Missouri

***The number of wage and salary workers with an hourly wage below the proposed minimum. The hourly wages in 2013 were increased by 5.497%, to account for inflation between 2013 and 2016, prior to comparison with the proposed minimum.

****The hourly wage difference was multiplied by the number of hours worked per year. That amount was then multiplied by the relevant person weight and summed over all persons with hourly wages below the proposed minimum.

*****we were unable to access tools to weight appropriately for this level in the timeframe allowed for input

The wage impact of an increase in the minimum wage for the state of Missouri is calculated using the following procedure. The American Community Survey Public Use Micro Sample for the most recent year available (2013) for the state of Missouri was downloaded from the US Census Bureau. The American Community survey was chosen over the Current Population survey because the ACS has a significantly larger sample.

Calculations were effectuated only for those individuals earning less than the proposed minimum wage. It is likely that there would be indirect impacts on others who earn more than the proposed minimum wage, especially those who earn close to the proposed hourly amount. These estimates therefore 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 American Community Survey 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 2013 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 used for 2013 and 2014, and a slightly higher rate was used for assumed inflation in 2015. The 2015 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 2016.

After these adjustments, the resulting hourly wage of all employees was compared to the proposed minimum wage. Three proposed levels for the minimum wage were examined: $11, $12, and $15. If the proposed minimum wage was less than the inflation adjusted hourly earnings of an employee, then no impact was calculated. If the proposed

[1] For the 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.

minimum wage was more than the hourly earnings on an employee, then the difference between the inflation adjusted hourly earnings 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 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 calculated by repeating this process for every employee and adding the results.

The impact grows as the proposed minimum wage grows. 31% of the labor force would be directly impacted by an increase in the minimum wage to $11 in 2016, whereas 47% would be impacted if the minimum wage were increased to $15 per hour.

It should be emphasized that there is no reason to expect even a substantial increase in the minimum wage to reduce employment. No credible research has demonstrated a negative employment effect of increases in the minimum wage and 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 impacts summarized in the table are likely to be low, relative to the total impact that would occur as a result of increasing the minimum wage to the proposed levels.

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

Next it is necessary to 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 is true, then those employment reductions would result in reductions in state income and sales tax revenue. However, review of the most credible recent empirical research on the minimum wage shows that increases in the minimum wage have had no discernible impact on employment. We thus conclude that it is not appropriate to project that the proposed initiative petitions would result in any detectable employment reduction, and resulting losses in income and sales tax revenue, or increases in unemployment-related costs to the state.

Economists have conducted hundreds of studies of the employment impact of the minimum wage. A recent 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 minimum wage has 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. 406-428.)

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. 139-163; 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 percent 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. 433-444; Akerlof, George A. 1982. "Labor contracts as partial gift exchange." *Quarterly Journal of Economics*, vol. 97, no. 4, pp. 543-569.)

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. 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 three minimum wage increase scenarios on such tax revenue. We do not attempt to project the additional impact through a GDP multiplier effect.

Increase in Personal Income Tax Revenue and Sales Tax Revenue Due to Increased Wages Personal Income Tax Revenue. 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, would 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%. We have conservatively estimated that just 25% of the higher wages would be spent on the purchase of goods that are subject to state and local sales tax in Missouri.

Based upon the above assumptions, and the total wage increase calculations for each version of the petition, we estimate that the increase in state income tax revenue resulting from the increased wages would be as follows:

Increase in Sales and Personal Income Tax from Increased Wages						
Proposed Min Wage Level	**Total Wage Increase**	**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**
$11.00	$4,167,807,617	$44,022,468	$30,737,581.17	$74,760,049.13	$113,989,538	$188,749,587
$12.00	$5,508,377,721	$58,182,240	$40,624,285.69	$98,806,525.38	$150,654,131	$249,460,656
$13.00	*We were unable to access a tool to weight calculations of the total wage increase for these levels in the timeframe allotted.*					
$14.00						
$15.00	$10,801,510,192	$114,090,951	$79,661,137.67	$193,752,089.08	$295,421,304	$489,173,393

Moreover, one often-cited authority on tax information, the Tax Foundation, reports that the average local sales tax rate in Missouri is even higher at 3.53%. See http://taxfoundation.org/article/state-and-local-sales-taxes-midyear-2012 If one uses this higher rate, total revenue increases additionally by hundreds of thousand dollars.

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

Respectfully submitted,
Lara Granich
Missouri Jobs with Justice Voter Action

Edward D. Greim provided the following information as an opponent of this initiative petition.

He writes 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 2016-066, 2016-067, 2016-068, 2016-069, 2016-070, 2016-071 and 2016-072 (the "Initiative Petitions"). Initiative Petitions 2016-066 and 2016-067 appear to be substantially similar to the previously-submitted Initiative Petitions 2016-045, 2016-046 and 2016-047—which will cause significant negative impacts, if passed. Moreover, Initiative Petitions 2016-068, 2016-069, 2016-070, 2016-071 and 2016-072 only work to further negatively impact the Missouri economy by phasing out tipped wage percentages entirely. In short, any of these seven initiatives would have a substantial negative impact on state and local governments.

The two fiscal impact studies attached hereto were authored by Dr. David Macpherson, a nationally-recognized labor economist and expert on the impact of minimum wage increases. In reviewing previous minimum wage petitions, the Auditor's Office has previously found Dr. Macpherson's analyses to be helpful and persuasive.

The first study was prepared by Dr. Macpherson in June 2014 and details how a $10.10 per hour minimum wage would have impacted Missouri and the St. Louis area were it to have become effective in 2015. *See* Exhibit A. In addition to the estimated loss of nearly 15,000 jobs statewide, Dr. Macpherson estimated that the cost to taxpayers of a $10.10 minimum wage would be $87 million annually. While this study did not address the specific proposals in the Initiative Petitions, Dr. Macpherson's methodology applies directly to the impact of the proposed minimum wage increases.

The second fiscal study was reviewed and used by this office in evaluating earlier minimum wage proposals. It was prepared by Dr. Macpherson in March 2012 and details the impact of a statewide minimum wage increase to $8.25 per hour. This study is attached hereto as Exhibit B. In this study, Dr. Macpherson concluded that state and local entities would pay out $16 million in increased wages. What's more, Dr. Macpherson estimated that the net state and local fiscal impact would range from a loss of over $22 million to a loss of $13 million. While this study is now three years old, the analysis is pertinent to the proposed wage increase in the Initiative Petitions. Notably, using Dr. Macpherson's methodology, the heightened minimum wage proposals contained in the Initiative Petitions would have a substantially greater negative fiscal impact than that found in the 2012 study.

The proponents of the Initiative Petitions will likely rely on data sourced from political activist groups who claim increases in minimum wage only serve to create new taxable income. The reality is that such groups approach this issue with indisputable political bias. Further, that type of analysis is one-sided, disregarding the significant impact on Missouri businesses. True, some workers will collect increased wages, but no new money is created; Missouri businesses will be the source of the increase which will lower their taxable income and, from time to time, cause them to forego hiring or to cut employment. Regarding secondary employment and tax revenue effects, the Auditor must refrain from assessing only one half of the wage increase equation.

In addition, the most significant and most direct effect of a minimum wage increase is the amount of the increased wages that will actually be paid by state and local governments. As has been shown during prior efforts to increase the minimum wage, very few of the hundreds of state and local entities who actually employ minimum wage workers will take the time to provide fiscal impact estimates in response to the Auditor's requests. Further, the Auditor's requests are simply sent to a sample of governmental employers. The more appropriate method to calculate the fiscal impact of the wage increase is to use the actual number of minimum wage workers who work for state and local governments, as calculated by the United States Census Bureau's CPS. Rather than simply adding the sums reported in the scattershot and unreliable fiscal note responses from state and local entities, the Auditor should supplement them with broader analyses such as those of Dr. Macpherson. At the very least, the Auditor should state in the fiscal note summary that state and local impacts are "large" or "substantial," rather than simply reporting impacts of "at least" the few thousand dollars in costs that may or may not be reported by those local entities that take the time to respond to the Auditor's sampling.

Finally, the proponents of the Initiative Petitions may argue that the Auditor should abandon the state and local cost estimates altogether. The proponents will argue that a new provision they have inserted in the statute would make the increases apply only if "there are appropriations for wages at those [i.e., the newly-increased] rates." The proponents will urge the Auditor's Office to assume that legislators will not actually fund the increases, and that therefore there will be no cost to taxpayers. Setting aside unjustifiable projections about the political judgments of legislators, the provision is of uncertain legal effect and constitutionality. On the one hand, it may not change existing law, since arguably the legislature always has the power to reduce or increase appropriations. But it is also unclear whether the legislature has the power to fix wage rates within an appropriations bill, or whether a mere statutory petition can confer this type of power upon the legislature. The application of the requirement for a specific type and manner of appropriation is also unclear in the context of political subdivisions and other public bodies whose funds are generally not appropriated by the general assembly. These are just a few examples of the serious flaws with the proposal itself that may have to be addressed by the courts. Suffice it to say that as a matter of law, it would be insufficient and unfair for the Auditor's fiscal note or summary to simply assume that these legal issues do not exist, or to make a political judgment that legislators will not in fact fund any of the minimum wage increases at any level of state government. Such assumptions would only serve to artificially deflate the fiscal note and fiscal note summary by tens of millions of dollars.

June 2014

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

Exhibit A

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.

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.

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
San Antonio, TX 78212

March 26, 2012

Exhibit B

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.

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[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.

[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

[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

Home Address

125 Park Drive
San Antonio, TX 78212
(210)-863-4808

Office Address

Department of Economics
Trinity University
One Trinity Place
San Antonio, TX 78212

Citizenship: U.S.
E-mail: David.Macpherson@trinity.edu;
davemacpherson1@yahoo.com
Webpage: http://www.davemacpherson.com

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.
Research Affiliate, Pepper Institute on Aging and Public Policy, FSU, 1992-1993, 2001-2003.
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).

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Journal Publications (Economics)

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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.

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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.

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

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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

The State Auditor's office did not receive a response from the **Department of Agriculture,** the **Department of Higher Education,** the **Department of Transportation, Adair County, Boone County, Callaway County, Cass County, Clay County, Cole County, Greene County, Jackson County Legislators, Jasper County, St. Charles County, St. Louis County, Taney County,** the **City of Cape Girardeau,** the **City of Jefferson,** the **City of Joplin,** the **City of Kirksville,** the **City of Mexico,** the **City of St. Joseph,** 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**.

Fiscal Note Summary

Increased state and local government expenses resulting from this proposal could exceed $420 million annually if funding is appropriated. State and local government tax revenue could increase by an estimated $489 million annually; however, employment decisions made by businesses could impact this estimate.