Members of the Tacoma Minimum Wage Task Force,

Traditionally, the intended purpose of raising the minimum wage has been to help low-wage workers earn more and alleviate poverty.

While there is some debate as to the effect of a higher minimum wage on employment, existing research strongly indicates that the minimum wage is woefully ineffective at reducing poverty.

Though certainly some workers will be raised out of poverty following a minimum wage increase, others will lose their jobs or see their hours cut. Others will pay more for goods and services as prices rise. On net, the minimum wage appears to be a very poor poverty-reduction tool.

1. In a 2012 paper, Professor David Neumark of the University of California-Irvine provided a succinct summary of the relevant research, writing:

   Research for the United States on state minimum wage increases generally fails to find evidence that minimum wages help the poor, and sometimes even suggests that minimum wages increase the number of poor or low-income families... Thus, the existing research literature provides no solid evidence of beneficial distributional effects of minimum wages for poor or low-income families on the whole. As a result, there is no basis for concluding that minimum wages reduce the proportion of families living in poverty or near poverty. Minimum wages do not deliver beneficial distributional effects that might offset the negative employment effects they cause.

2. It is difficult to improve upon the overview of this issue provided in a peer-reviewed study published in 2010 by Joseph Sabia of American University and Richard Burkhauser of Cornell University, so I will simply provide excerpts for your consideration:

   While reducing poverty among the working poor is a laudable policy goal, the evidence suggests that minimum wage increases have thus far provided little more than symbolic support to this population (Card and Krueger 1995; Neumark and Wascher 2002; Gundersen and Ziliak 2004; Burkhauser and Sabia 2007; Leigh 2007; Sabia 2008). Several explanations have been offered for this finding. Card and Krueger (1995) emphasize that minimum wages fail to reduce poverty because many poor Americans do not work. Others have argued that even among the working poor, the relationship between earning a low hourly wage rate and living in poverty is weak and has become weaker over time (Stigler 1946; Burkhauser, Couch, and Glenn 1996; Burkhauser and Sabia 2007). Moreover, even among affected workers, there is strong evidence that increases in the minimum wage reduce the employment of low-skilled workers (Neumark and Wascher 2008). While an increase in the minimum wage will lift out of poverty the families of some low-skilled workers who remain employed, other low-skilled workers will lose their jobs or have their hours significantly cut, reducing their income and dropping their families into poverty (Neumark and Wascher 2002; Neumark, Schweitzer, and Wascher 2004, 2005; Sabia 2008).

   ... We find no evidence that minimum wage increases between 2003 and 2007 lowered state poverty rates. Moreover, we find that the newly proposed federal minimum wage increase from $7.25 to $9.50 per hour, like the last increase from $5.15 to $7.25 per hour, is not well targeted to the working poor.
...We estimate that nearly 1.3 million jobs will be lost if the federal minimum wage is increased to $9.50 per hour, including 168,000 jobs currently held by the working poor... We conclude that further increases in the minimum wage will do little to reduce poverty...

When calculating the effect of the minimum wage on poverty, many studies try to take into account the reduced employment of low-skilled workers. However, as Sabia and Burkhauser point out, even when operating under the “optimistic assumption” that a higher minimum wage does not harm employment, significant research has shown that, “…workers living in poor households received few of the benefits of past minimum wage increases because their hourly wages were already greater than the proposed state or federal minimum wages. Instead, most of the benefits went to second or third earners living in households well above the poverty line.”

Stating the obvious, Sabia and Burkhauser note that, “One important critique of these simulations is that they overstate the benefits of minimum wages to the working poor because they ignore employment effects.”

In other words, significant research has shown that even under a best-case scenario in which raising the minimum wage has no negative effect on employment, studies still show that it does little to help alleviate poverty.

3. Sabia and Burkhauser’s research has been confirmed by a very recent study, published in April, by Thomas MaCurdy of Stanford University (a copy of the study is attached). As a side note, I strongly recommend reading the introduction to his paper. It provides a relatively short and accessible outline of the debate over the minimum wage before getting into the technical details of his study.

For the purposes of argument, MaCurdy’s study assumed that increasing the minimum wage would not reduce employment and that businesses would pay for the higher labor costs entirely through price increases. Again, for the purposes of argument, MaCurdy also assumes that the price increases will not decrease demand for goods and services. MaCurdy recognizes that neither of these assumptions is accurate, but makes them in order to examine the “distributional effects” of a higher minimum wage; put simply, how low-income vs. high-income households would be affected.

Even under this incredibly favorable scenario, MaCurdy finds that the minimum wage is “an ineffectual antipoverty policy.” From his conclusion:

Whereas fewer than one in four low-income families benefit from a minimum wage increase of the sort adopted in 1996, all low-income families pay for this increase through higher prices, rendering three in four low-income families as net losers. Meanwhile, many higher-income families are net winners...

Because price increases hit low-income households the hardest and many low-income households do not benefit from a higher minimum wage, MaCurdy describes the minimum wage as “more regressive than a typical state sales tax,” concluding that:
Tacoma Minimum Wage Task Force Public Comment Report  
(Period from June 19, 2015 – June 25, 2015)

Far more poor families suffer reductions in resources than those who gain, and as many rich families gain as poor families. These income transfer properties of the minimum wage reveal it to be an ineffectual antipoverty policy.

4. Even David Card and Alan Krueger (authors of the first study claiming the minimum wage didn’t reduce employment) have described the minimum wage as “blunt instrument” for increasing the income of the poor, and note that the effect of minimum wages on the overall poverty rate is “statistically undetectable.” Their primary explanation is that most individuals in poverty do not have jobs, and therefore will not benefit from a higher minimum wage.

While it is easy to “see” the happy worker who gets a pay bump following a minimum wage hike, we must not forget about the essentially invisible poor family that has to pay more for food, or the entry-level employee who has his hours cut as employers respond to higher costs.

Sources:
- David Neumark, “Should Missouri Raise its Minimum Wage?” Show-Me Institute, September 2012.

Maxford Nelsen  
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360.956.3482 | PO Box 552 Olympia, WA 98507

June 22, 2015

Members of the Tacoma Minimum Wage Task Force,

Many advocates of raising the minimum wage point to Washington State as an example that a higher minimum wage is good for the economy. Since voters passed Initiative 688 in 1998, Washington has had the highest state-level minimum wage in the country. The initiative also required the minimum wage to increase annually to account for inflation.

Yet, at the same time, unemployment and poverty typically lag the national average, while job growth often exceeds the national average. Surely, minimum wage supporters argue, this must mean that the high minimum wage has been good for Washington’s economy.
As you may have guessed, however, there are some big problems with this line of argument. For starters, correlation does not prove causation. In other words, just because two phenomenon are true at the same time (Washington has the highest state minimum wage and low unemployment) does not mean that one caused the other. It could quite possibly be true that Washington’s high minimum wage has harmed job growth for certain workers while the overall state economy remained exceptionally healthy.

So has Washington’s high minimum wage helped the economy or not? Washington’s minimum wage law has been on the books for over 15 years now, which allows us to examine several trends over a long time period. The information below is compiled from the Bureau of Labor Statistics and the Census Bureau. Please reference the attached report for specific sources and data citations.

1. Poverty

While the intent of I-688 may have been to decrease poverty, it appears to have accomplished little. The chart below tracks the changes in how a Washington minimum wage workers’ full-time annual salary stacks up against the poverty threshold.

**Key Points:**
- When I-688 was passed in 1998, full-time minimum wage workers earned 126 percent of the poverty threshold. A worker with any dependents fell below the poverty line. Single, full-time minimum wage workers supporting two children under 18 earned 82 percent of the poverty threshold.
Sixteen years later, in 2014, full-time minimum wage workers earned 157 percent of the poverty threshold and workers with two children earned 102 percent of the poverty line.

Despite I-688’s dramatic increase in the minimum wage compared to the poverty threshold, and despite the fact that Washington had the nation’s highest minimum wage, the state poverty rate (the percentage of Washington residents living below the poverty threshold) changed little relative to the national poverty rate.

Key Points:

- The state poverty rate has historically trailed the national rate, even prior to the passage of I-688 in 1998.
- The only time that Washington’s poverty rate exceeded the national rate was in 2003, following four years of increases in the poverty rate that began the year I-688 took effect.
- The average state poverty rate for the 15 years preceding passage of I-688 (1984-1998) was 10.7 percent. The average national poverty rate for the same period was 13.8 percent. The average state poverty rate for the 15 years following passage of I-688 (1999-2013) was 10.9 percent, a slight increase, while the national poverty rate for the same period was 13.1 percent, a slight decrease.

All other things being equal, minimum wage supporters would expect the poverty rate to decrease when the minimum wage increases. Despite the fact that Washington’s minimum wage rose substantially in the years since 1998, there was no noticeable change in the state poverty rate.

However, even this data is only correlative. There are two possible interpretations of the data: (1) The minimum wage increase was ineffective at decreasing poverty, or (2) it did reduce poverty beginning in 1998 but other factors at the same time began to increase poverty, canceling out the anti-poverty effect of the higher minimum wage.
2. Employment

Minimum wage advocates like to point out that the total number of restaurant jobs increased in Washington following passage of I-688 (restaurant jobs are often cited as typical minimum wage jobs). However, a closer look indicates that the growth rate for these jobs slowed dramatically, especially when compared to Washington population and overall jobs growth.

Key Points:

- Washington’s share of total U.S. accommodation and food service industry jobs (mainly hotels and restaurants) exceeded Washington’s share of total U.S. nonfarm employment and total U.S. population every year from 1990 until implementation of I-688 in 1999.
- Since the passage of I-688, Washington’s share of total accommodation and food service jobs has substantially declined, even while the state’s share of the nation’s population and total jobs have steadily increased.
- When voters passed I-688 in 1998, Washington had 2.09 percent of the nation’s population, 2.08 percent of the nation’s jobs and 2.10 percent of the nation’s accommodation and food service jobs. As of 2014, Washington’s share of the population had increased to 2.21 percent, its share of the nation’s jobs had increased to 2.21 percent, while its share of total U.S. accommodation and food services jobs had declined to 1.98 percent.
- While Washington’s share of the nation’s population increased by 5.7 percent since passage of I-688 in 1998, and its share of total U.S. jobs increased by 6.3 percent, the state’s share of U.S. accommodation and food services jobs fell by 5.7 percent.

Again, since the data is correlative, there are two possible interpretations: (1) Washington’s high minimum wage dramatically slowed job growth in low-wage sectors like hotels and restaurants, or (2) some other policy or economic change unique to Washington took effect at the same time the minimum wage was increased and caused the decline in jobs growth.
3. Unemployment

While the sky has not fallen in on Washington’s robust economy since passage of I-688, job prospects for the least-skilled and least-educated workers have certainly declined. The chart below compares Washington’s teen unemployment rate to the national rate before and after passage of I-688.

**Key Points:**
- For the 15 years preceding the implementation of I-688 (1984-1998), teen unemployment in Washington generally followed national trends, with Washington’s teen unemployment rate higher than the national rate in 10 out of 15 years. The worst year in the period for Washington teens occurred in 1986, when the state’s teen unemployment rate was 4.7 percentage points higher than the national rate.
- Washington’s teen unemployment rate has surpassed the national rate every year since the passage of I-688. At the peak of the recession in 2010, Washington’s teenage unemployment rate was 8.2 points higher than the unemployment rate for teens nationwide.

This correlative data means either: (1) the increase in Washington’s minimum wage dramatically reduced job prospects for teens or (2) some other policy or economic change unique to Washington took place at the same time the minimum wage law was passed and is responsible for raising the unemployment rate for teens.

**Conclusion**

While the information presented above is purely correlative, it is worth noting how directly the observed changes in Washington’s economy after passage of I-688 align with the projections of minimum wage
skeptics. Just as significant is the lack of any indication that enacting the nation’s highest minimum wage produced the gains promised by labor activists in any measurable or lasting way.

At the time, supporters of I-688 claimed that raising the minimum wage and indexing it to inflation would end poverty wage jobs and depoliticize the issue in the future. The very fact that Tacoma and the state are again embroiled in debates about whether to raise the minimum wage speaks to the ineffectiveness of prior efforts.

Maxford Nelsen
Labor Policy Analyst | Freedom Foundation
MNelsen@myFreedomFoundation.com
360.956.3482 | PO Box 552 Olympia, WA 98507

(Attachment 2)

June 22, 2015

Gentlemen:

Pertaining to the current wage increase proposal, I have some thoughts. If landlords would roll back rents to the 2007 levels minimum wage earners could afford incremental wage increases. If grocery stores would roll back grocery prices to 2007 levels, wage earners could afford to buy groceries for their families with incremental wage increases. If gasoline refiners would roll back gasoline prices to the 2007 level, they would still be making record profits. That's just a few examples. When the cost of living was increasing 8% to 15% a year and the minimum wage was going up 2% to 3% a year, who cared about that? Wage earners are so far behind right now, employers will never get them caught up. Business owners have been reaping record profits for the last ten years. Now it's time to pay up. It still doesn't get minimum wage earners even. Sweden, Denmark and Norway make out just fine at $25 an hour. $15 an hour is a gift for employers, it should be more. Employers should consider themselves lucky. They will make out just fine.

There's plenty of money in the budget for wage increases if there wasn't so much waste. I can tell by looking at your streets that you plain can't manage money. I come from Plano Texas. Infrastructure comes first in Plano. They manage to replace streets, sidewalks and curbs when needed. Most with federal grants. Does Tacoma mange their federal grants? After Infrastructure is taken care of, you can spend the rest on something else. It's not rocket science.

Federally, taxpayers have paid billions in taxes to maintain bridges. Yet, there's no money for repairs. Where did all the money go? Nobody knows. What a mystery. It's clear that the government of Tacoma has lost control, can't manage money and should hire a money manager.

Sincerely,

Larry Bell
Greetings:
I hope the committee in its deliberations will reflect that the minimum wage proposals do not meet the criterion of an actual living wage.
James H. Williams, PhD, MSW

Living Wage Calculation for Pierce County, Washington
The living wage shown is the hourly rate that an individual must earn to support their family, if they are the sole provider and are working full-time (2080 hours per year). All values are per adult in a family unless otherwise noted. The state minimum wage is the same for all individuals, regardless of how many dependents they may have. The poverty rate is typically quoted as gross annual income. We have converted it to an hourly wage for the sake of comparison.

For further detail, please reference the technical documentation here.

<table>
<thead>
<tr>
<th></th>
<th>1 Adult</th>
<th>1 Adult</th>
<th>1 Adult</th>
<th>2 Adults</th>
<th>2 Adults</th>
<th>2 Adults</th>
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<tbody>
<tr>
<td></td>
<td>1 Child</td>
<td>2 Children</td>
<td>3 Children</td>
<td>(One Working)</td>
<td>(One Working)</td>
<td>(One Working)</td>
<td>(One Working)</td>
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<td>(One Working)</td>
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<tr>
<td></td>
<td>$10.29</td>
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<tr>
<td></td>
<td>$5.00</td>
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Typical Expenses
These figures show the individual expenses that went into the living wage estimate. Their values vary by family size, composition, and the current location.

<table>
<thead>
<tr>
<th>Annual Expenses</th>
<th>1 Adult</th>
<th>1 Adult 1 Child</th>
<th>1 Adult 2 Children</th>
<th>1 Adult 3 Children</th>
<th>2 Adults (One Working) 1 Child</th>
<th>2 Adults (One Working) 2 Children</th>
<th>2 Adults (One Working) 3 Children</th>
<th>2 Adults 1 Child</th>
<th>2 Adults 2 Children</th>
<th>2 Adults 3 Children</th>
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<tr>
<td>Food</td>
<td>$3,607</td>
<td>$5,319</td>
<td>$8,002</td>
<td>$10,607</td>
<td>$6,612</td>
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<td>$10,627</td>
<td>$12,932</td>
<td>$6,612</td>
<td>$8,234</td>
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<td>Child Care</td>
<td>$0</td>
<td>$7,875</td>
<td>$11,659</td>
<td>$15,443</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$7,875</td>
<td>$11,659</td>
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<td>Medical</td>
<td>$1,679</td>
<td>$5,761</td>
<td>$5,550</td>
<td>$5,614</td>
<td>$4,326</td>
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<td>Housing</td>
<td>$7,560</td>
<td>$11,988</td>
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<td>Transportation</td>
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<td>$9,970</td>
<td>$7,382</td>
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<td>Other</td>
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<td>$3,971</td>
<td>$4,344</td>
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<tr>
<td>Required annual income after taxes</td>
<td>$19,184</td>
<td>$42,297</td>
<td>$50,051</td>
<td>$64,549</td>
<td>$31,496</td>
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<td>Annual taxes</td>
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<td>$5,766</td>
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<td>Required annual income before taxes</td>
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<td>$55,817</td>
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<td>$48,454</td>
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<td>$51,855</td>
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Typical Annual Salaries
These are the typical annual salaries for various professions in this location.

<table>
<thead>
<tr>
<th>Occupational Area</th>
<th>Typical Annual Salary</th>
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</thead>
<tbody>
<tr>
<td>Management</td>
<td>$103,870</td>
</tr>
<tr>
<td>Business &amp; Financial Operations</td>
<td>$68,040</td>
</tr>
<tr>
<td>Computer &amp; Mathematical</td>
<td>$99,410</td>
</tr>
<tr>
<td>Architecture &amp; Engineering</td>
<td>$85,240</td>
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</table>
## Tacoma Minimum Wage Task Force Public Comment Report


<table>
<thead>
<tr>
<th>Occupational Area</th>
<th>Typical Annual Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life, Physical, &amp; Social Science</td>
<td>$63,320</td>
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<tr>
<td>Community &amp; Social Service</td>
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<tr>
<td>Legal</td>
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<td>Education, Training, &amp; Library</td>
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<td>Arts, Design, Entertainment, Sports, &amp; Media</td>
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<tr>
<td>Healthcare Practitioners &amp; Technical</td>
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<td>Healthcare Support</td>
<td>$31,940</td>
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<td>Protective Service</td>
<td>$46,060</td>
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<td>Food Preparation &amp; Serving Related</td>
<td>$22,410</td>
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<tr>
<td>Building &amp; Grounds Cleaning &amp; Maintenance</td>
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<td>Personal Care &amp; Service</td>
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<td>Sales &amp; Related</td>
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<td>Farming, Fishing, &amp; Forestry</td>
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<td>Production</td>
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<td>Transportation &amp; Material Moving</td>
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James H. Williams, PhD, MSW
2501 N. Starr St.
Tacoma, WA 98403
(912) 604-4356
June 23, 2015

To the Members of the Tacoma Minimum Wage Task Force:

Attached is a press release that the Northwest Grocery Association (NWGA) has sent to the Tacoma City Council and released to the media. I hope that the enclosed poll results will be received as a valuable tool in your work to determine the components of a minimum wage proposal to be sent to Tacoma voters.

As the representative of 15 grocery stores in your city providing jobs for over 1500 employees, NWGA hopes to provide you with a valuable perspective in positive ways to reach your goal of raising the minimum wage without hurting small and low margin businesses such as the grocery industry. In our view, the common challenges before us are as follows:

- How to improve the wages of employees of businesses that come to market with a low wage / no benefit strategy
- How to reward employers who already pay above the minimum wage and provide employer paid benefits such as health insurance and paid time off
- How to mitigate cuts in benefits and flexibility as a means to meeting a higher mandated wage
- Finding an appropriate minimum wage level within the boundaries of Tacoma's economic framework

I believe you will find that the public supports our common goals as stated above and the poll provides a great framework in which to build a proposal that we all can implement.

Thank you for your consideration of this material and you find our representative Holly Chisa (hollychisa@hpcadvocacy.com) ready to assist you.

Joe Gilliam
President
NW Grocery Association
8565 SW Salish Lane, #100
Wilsonville OR 97070
503.685.6293
503.685.6295 fax
www.nwgrocery.org

(Attachment 3)
June 24, 2015

Minimum Task Force Members,

I feel there should be an “entry level” minimum wage. We have employed high school and college students in the summer for almost 40 years. They bring enthusiasm but very little experience or work ethic. We try to instill some of those qualities in them so they can be more prepared for the working world. As with all businesses the value of your product or service is what is perceived by the consumer.

Since I am a “consumer” of their labor in my pragmatic business perception of their entry level position is they are of little value to my company. If the cost of their labor is increased I will no longer bother to employ them. That means the normal $9.47 they would have gotten becomes $0.

The second point I would like to make is that according to several sources the cost of living in Seattle is much higher than Tacoma. I will go on the low end of around 20% - 25% higher than in Tacoma. I would not mind Tacoma parallel Seattle’s minimum wage but with the cost of living difference taken into account.

Jim Rich, CML, EL06
Guardian Security
5424 S Tacoma Way
Tacoma WA  98409
1-253-474-5855
1-800-474-5855

June 25, 2015

I would like everyone to stop and think about what a big wage increase will do to us Seniors. We are on a fixed income and will not receive raises on our income. If this raise goes through it will our ability to do community service because our cost of living will take the cash we now spend to do the extra we now do. Everyone needs to understand employees earn more by being an asset to their employers not expect top dollar just to show up.

If you have been watching KIRO News about what the Seattle increase has caused for employers that are now having employees asking for less hours so they can still receive subsidized housing, food stamps, health care, etc.

I expect you all to look at the cost to all residents of Tacoma while making this very serious decision.

Donna M. Buck
June 25, 2015

South Tacoma Business District Association
Brenda Valentine President
PO Box 9445 - Tacoma WA 98490-0445
Phone: 253-475-5676

City of Tacoma
Minimum Wage Task Force

Dear Esteemed Committee Members,

The Executive Board of the South Tacoma Business District Association has met and discussed the possible impact of the $15Now on member businesses. After much deliberation, we have decided that although not ideal, we would recommend the following alternative to the $15Now proposition as it is currently written:

- Increase the minimum wage to $12 per hour, phased in over 2 years (this is a 25% increase from the current minimum wage)
- Small businesses with less than 100 employees would be allowed the full two years to phase in the increase.
- Restaurants whose employees receive tips would be “exempt”
- Calculating medical/health benefits as well as paid sick days, vacation days and retirement programs into the equation
- Exempting first-time hires, trainees and interns, youth and chronically unemployed people – the state minimum wage should apply to these types of employees
- Remove collective bargaining units from the minimum wage ordinance
- Exempt businesses that do not sell their products in Tacoma but export them out of the city

We thank you for your time and consideration. We realize the commitment you made to take on this project was substantial and we applaud your efforts. Please let us know if we can be of any assistance.

Brenda Valentine, President
South Tacoma Business District Association
253-272-3553 (Direct Line)
June 25, 2015

Members of the Tacoma Minimum Wage Task Force,

As a final note, I wanted to pass on a summary of a recent study that I came across this week.

In November, economists Jeffrey Clemens and Michael Wither of the University of California-San Diego released a study which took a new approach to examining the effect of the minimum wage on employment.

They used data sources that allowed them to track the earnings of individual low-skilled workers prior to and through the increase in the federal minimum wage from $5.15 to $7.25 between 2007 and 2009. Studies typically only examine industries or demographic groups that tend to have a higher concentration of low-skilled workers, rather than analyzing specific individuals.

As the authors explain,

"Past work focuses primarily on the minimum wage’s effects on particular demographic groups, such as teenagers, and/or specific industries, like food service and retail. While minimum and sub-minimum wage workers are disproportionately represented among these groups, both are selected snapshots of the relevant population. Furthermore, it is primarily low skilled adults, rather than teenage dependents, who are the intended beneficiaries of anti-poverty efforts. Assessing the minimum wage from an anti-poverty perspective thus requires characterizing its effects on the broader population of low-skilled workers, which we are able to do.

Among their many findings, Clemans and Wither conclude:

- "Increases in the minimum wage significantly reduced the employment of low-skilled workers. By the second year following the $7.25 minimum’s implementation, we estimate that targeted workers’ employment rates had fallen by 6 percentage points (8 percent).”
- "In addition to reducing employment, we find that binding minimum wage increases increased the likelihood that targeted individuals work without pay (by 2 percentage points or 12 percent). This novel effect is concentrated among individuals with at least some college education. We take this as suggestive that such workers’ entry level jobs are relatively readily posted as [unpaid] internships. For low-skilled, low-education workers, the entire change in the probability of having no earnings comes through unemployment.”
- "We estimate that binding minimum wage increases reduced the average monthly income of low-skilled workers by $97 in the short-run and $153 in the medium-run.”
- "The effect of binding minimum wage increases on the incidence of poverty was statistically indistinguishable from 0.”
- "Binding minimum wage increases reduced the medium-run class mobility of low-skilled workers. Such workers became significantly less likely to rise to the lower middle class earnings threshold of $1500 per month. The reduction was particularly large for low-skilled workers with relatively little education… It appears that binding minimum wage increases blunted these workers’ prospects for medium-run economic mobility by reducing their short-run access to opportunities for accumulating experience and developing skills. This period’s minimum wage increases may thus have made the first rung on the earnings ladder more difficult for low-skilled workers to reach.”
Tacoma Minimum Wage Task Force Public Comment Report
(Period from June 19, 2015 – June 25, 2015)

- “Our best estimate is that this period’s minimum wage increases resulted in a 0.7 percentage point decline in the national employment-to-population ratio for adults aged 16 to 64. This accounts for 14 percent of the total decline in the employment-to population ratio over this time period.”

I have attached copies of the previous briefings for your reference.

Please feel free to contact me with any thoughts or questions you may have.

Best,

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(Attachment 4)
How Effective Is the Minimum Wage at Supporting the Poor?

Author(s): Thomas MaCurdy


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How Effective Is the Minimum Wage at Supporting the Poor?

Thomas MaCurdy
Stanford University

This study investigates the antipoverty efficacy of minimum wage policies. Proponents of these policies contend that employment impacts are negligible and suggest that consumers pay for higher labor costs through imperceptible increases in goods prices. Adopting this empirical scenario, the analysis demonstrates that an increase in the national minimum wage produces a value-added tax effect on consumer prices that is more regressive than a typical state sales tax and allocates benefits as higher earnings nearly evenly across the income distribution. These income-transfer outcomes sharply contradict portraying an increase in the minimum wage as an antipoverty initiative.

I. Introduction

The widespread popularity of raising the minimum wage draws heavily on its appeal as an antipoverty policy, which relies on two beliefs: first, raising the minimum wage will increase the incomes of poor families, and second, the minimum wage imposes little or no public or social costs. Indeed, in 2006 a group of more than 650 economists signed a widely distributed statement issued by the Economic Policy Institute expressing these sentiments in support of legislation calling for a 40 percent increase in the federal minimum wage. This support along with broad

Aspects of the arguments and approach in this study have appeared in several non-peer-reviewed reports and working papers written by me (and different coauthors) since the late 1990s. These reports/papers greatly benefited from discussion, comments, and expert research assistance from Frank McIntyre, Peggy O’Brien-Strain, and Selen Opcin. For this updated paper and newly produced empirical results, I gratefully acknowledge many useful contributions from Kevin Mumford.

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acceptance of these beliefs encouraged policy makers in Washington, DC, to raise the minimum wage from $5.15 in 2007 to $7.25 in 2009.

The policy debate over the minimum wage principally revolves around its effectiveness as an antipoverty program. A popular image used by both sides of the debate consists of families with breadwinners who earn low wages to support their children. Policies that raise the wages of these workers increase their earnings and contribute to their escaping poverty. As a counterbalance to this impact, opponents of the minimum wage argue that wage regulation causes some low-wage workers to lose their jobs and they will suffer income drops. The issue, then, becomes a trade-off: some low-income breadwinners will gain and others will lose. Promoters of the minimum wage retort that employment losses are quite small, and consequently, the workers who gain far exceed those who lose.

In addition to potential adverse employment effects, opponents of minimum wages further counter the belief that the minimum wage assists poor families by documenting that many minimum wage workers are not breadwinners of low-income families. They are, instead, often teenagers, single heads of household with no children, or not even members of low-income families. Promoters of the minimum wage admit that some of these groups may also benefit from the wage increase, but since few workers lose jobs, they contend that the minimum wage still benefits low-income families with children.

The notion that the minimum wage can be increased with little or no economic cost underlies many advocates’ assessments of the effectiveness of the minimum wage in its antipoverty role. Most economists agree that imposing wage controls on labor will not raise total income in an economy; indeed, elementary economics dictates that such market distortions lead to reduced total income, implying fewer overall benefits than costs. If, however, one presumes that employment losses do not occur and total income does not fall, then the minimum wage debate becomes a disagreement over how it redistributes income. The efficacy of a minimum wage hike as an antipoverty program depends on who benefits from the increase in earnings and who pays for these higher earnings. Whereas a number of studies have documented who benefits, who pays is earnings far less obvious. But someone must pay for the higher earnings received by the low-wage workers.

At the most simplistic level, the employer pays for the increase. However, businesses do not actually pay, for they are merely conduits for transactions among individuals. Businesses have three possible responses to the higher labor costs imposed by the minimum wage. First, they can reduce employment or adjust other aspects of the employment relationship (e.g., fewer fringe benefits or training opportunities), in which case some low-wage workers pay themselves through loss of their jobs or by receiving fewer nonsalary benefits; second, firms can lose profits, in
which case owners pay; and, third, employers can increase prices, wherein consumers pay.

Of these three sources, entertaining that low-wage workers bear any cost of the minimum wage has been largely dismissed by proponents in recent years on the basis of several (albeit much disputed) studies that found little or no job loss following historical increases in federal and state minimum wages. While the extra resources needed to cover higher labor costs could theoretically come out of profits, several factors suggest that this source is the least likely to bear costs. Capital and entrepreneurship are highly mobile and will eventually leave any industry that does not yield a return comparable to that earned elsewhere. This means that capital and entrepreneurship, and hence profits, will not bear any significant portion of a “tax” imposed on a particular factor of production. Stated differently, employers in low-wage industries are typically in highly competitive industries such as restaurants and retail stores, and the only option for these low-profit margin industries becomes lowering exposure to low-wage labor or raising prices. With jobs presumed to be unaffected, this leaves higher prices as the most likely candidate for covering minimum wage costs. In fact, supporters of minimum and living wage initiatives often admit that slight price increases pay for higher labor costs following minimum wage hikes.

To evaluate, then, the redistributive effects of the minimum wage adopting the view implicitly held by its advocates, this study examines the antipoverty effectiveness of this policy presuming that firms raise prices to cover the full amount of their higher labor costs induced by the rise in wages. In particular, the analysis simulates the economy taking into account both who benefits and who pays for a minimum wage increase assuming that its costs are all passed on solely in the form of higher consumer prices. The families bearing the costs of these higher prices are those consumers who purchase the goods and services produced with minimum wage labor. In actuality, most economists expect that some of these consumers would respond to the higher prices by purchasing less, but such behaviors directly contradict the assertion of no employment effects since lower purchases mean that fewer workers would be needed to satisfy demand. Consequently, to keep faith with the view held by proponents, the simulations carried out in this study assume that consumers do not alter their purchases of the products and services produced by low-wage labor and they bear the full cost of the minimum wage rise. This approach, then, maintains the assumption of a steady level of employment, the “best-case” scenario asserted by minimum wage proponents. Although highly stylized and probably unrealistic, the following analysis demonstrates that the minimum wage can have unintended and unattractive distributional effects, even in the absence of the employment losses predicted by economic theory.
To evaluate the distributional impacts of an increase in the minimum wage, this study investigates the circumstances applicable in the 1990s when the federal minimum wage increased from $4.25 in 1996 to $5.15 in 1997. To identify families supported by low-wage workers and to measure the effects on their earnings and income, this analysis uses data from waves 1–3 of the 1996 Survey of Income and Program Participation (SIPP). To translate the higher earnings paid to low-wage workers into the costs of the goods and services produced by them, this study relies on national input-output tables constructed by the Minnesota Impact Analysis for Planning (IMPLAN) Group, matched to a time period comparable with SIPP’s. To ascertain which families purchase the goods and services produced by low-wage workers and how much more they pay when prices rise to pay for minimum wage increases, this study uses data from the Consumer Expenditure Survey (CES), again matched to the same time period as SIPP’s. The contribution of this study is not to estimate the distribution of benefits of the minimum wage, nor is it to estimate the effect on prices; both of these impacts have already been examined in the literature. Instead, the goal of this paper is to put the benefit and cost sides together to infer the net distributional impacts of the minimum wage on different categories of families and to translate this impact into a format readily accessible to economists and policy makers.

To provide an economic setting for evaluating the distributional measures presented here, this study develops a general equilibrium (GE) framework incorporating minimum wages. This model consists of a two-sector economy with the two goods produced by three factors of production: low-wage labor, high-wage labor, and capital. A particular specification of this GE model justifies the computations performed in the analysis, and entertaining alterations in its behavioral elements permits an assessment of how results might change with alternative economic assumptions. The model proposed here goes well beyond what is currently available in the literature, which essentially relies on a Heckscher-Ohlin approach with fixed endowments (supplies) of labor and capital inputs. In contrast, the GE model formulated in this study admits flexible elasticities for both input supplies and consumer demand, as well as a wide range of other economic factors.

Seven sections make up the remainder of this paper. Section II reviews the economics literature on the responses available to employers to pay for the higher labor costs imposed by the minimum wage, and it relates these survey findings to the simulation method used in this paper. Section III overviews the methodology and data used to carry out the simulations of minimum wage impacts. Section IV characterizes who ben-

This increase was done in two steps: an increase from $4.25 to $4.75 on October 1, 1996, and then to $5.15 on September 1, 1997. Adjusting for inflation, the $5.15 minimum wage in 1997 was worth about $7.00 in 2010.
effects from an increase in the national minimum wage, and Section V describes who pays for this increase. Section VI calculates the net distributional effects of a rise in the minimum wage. Section VII discusses limitations of the analytical approach used here within a coherent GE model of the distributional impacts of the minimum wage. Finally, Section VIII summarizes the findings.

II. Paying for the Minimum Wage

This section reviews the economics literature on how employers respond to the higher labor costs imposed by the minimum wage and relates the findings from this literature to the simulation method used in this paper. The distributional effects of a minimum wage increase depend in part on who pays the costs of the policy change. The literature has focused on three possible responses (not mutually exclusive): first, employers could respond by reducing the hours of work or the number of employees (workers pay); second, firms could increase prices (consumers pay); and/or third, businesses could not respond at all, which would leave them with lower profits (owners pay). The first three subsections below discuss the economic reasoning and evidence for each of these responses, and the last subsection specifies the assumptions maintained in the following simulation analysis.

A. Reducing Employment

Economics research on the minimum wage has predominantly focused on the issue of employment losses. This focus draws on a fundamental tenet of economic theory: all else being equal, agents purchase less of a good as its price rises. According to this theory, not only will employers reduce their employment to mitigate costs associated with a minimum wage hike, they will also tend to reduce output and/or increase the utilization of other factors of production. For each potential employee, the firm decides whether having additional hours will increase the firm’s revenue sufficiently to justify that worker’s wage. For some firms, the extra revenue generated by the least productive workers becomes insufficient to justify their wages, so employment falls. In this scenario, low-wage workers bear part of the cost of an increase in the minimum wage through reduction in employment and hours of work (also possibly through reductions in forms of compensation other than earnings). In addition to reducing fringe benefits and training, minimum wage employers can also presumably demand greater effort (i.e., higher productivity) from the minimum wage workers who remain employed. Given the limited fringe benefits and training in these jobs, increased effort may well present a more important margin of adjustment. Moreover, higher wages may lower employment costs through reduced turnover. However, as in the
vast majority of the debate over the minimum wage revolves around mea-
suring the rate at which a rise in the minimum wage affects employment.

Prior to the 1990s, economists widely held the view that minimum wage
increases primarily adversely affect the employment of young workers
under age 25. In their survey of 25 time-series studies of youth employ-
ment published between 1970 and 1981, Brown, Gilroy, and Kohen
(1982) conclude that a 10 percent increase in the minimum wage can be
expected to reduce teenage employment by 1–3 percent according to
existing empirical evidence; in their review of a smaller number of cross-
section studies, the estimated decrease in teenage employment ranged
from zero to over 3 percent for a 10 percent increase in the minimum
wage. The accumulated research of this era generally maintains that
young adults beyond the teenage years experience notably smaller neg-
ative employment impacts than their teenage counterparts.

Research in the 1990s onward challenged this conventional wisdom
through a series of studies that exploited variation in state-specific min-
imum wages above the federal level as a primary source of data to mea-
sure the impacts of the minimum wage. This literature, comprising more
than 100 papers written over the past two decades, has become known
as the “new minimum wage research.” The most influential work in this
literature finds no negative employment effects, and some studies even
suggest that employment increases in reaction to minimum wage hikes.
Card and Krueger’s 1995 book Myth and Measurement compiles some of
the most prominent work in this area. Card and Krueger (1994) examine
fast-food employment in New Jersey and Pennsylvania before and after
the 1992 increase in New Jersey’s minimum wage. With point estimates
suggesting a positive employment effect, Card and Krueger conclude,
“we believe that, on average, the employment effects of a minimum-wage
increase are close to zero” (383). Other studies discussed in Myth and Mea-
surement, including Card (1992a, 1992b) and Katz and Krueger (1992),
further support this conclusion. More recent studies by Card and Krue-
ger (2000), Zavodny (2000), Dube, Naidu, and Reich (2007), Dube, Lester,
and Reich (2010), and Allegretto, Dube, and Reich (2011) produce sim-
ilar findings. As economic rationales for explaining their empirical find-
ings, this line of research predominantly cites two characterizations of
labor markets: a monopsonistic labor market of the sort discussed by
Stigler (1946) and bilateral search models with heterogeneous workers

This challenge of the conventional wisdom about minimum wage im-
phone and selected studies are directly

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critique the approaches used to derive the “new” conclusions (e.g., Deere, Murphy, and Welch 1995; Kim and Taylor 1995; Welch 1995; Burkhauser, Couch, and Wittenburg 2000; Neumark and Wascher 2000). Others studies confirm the consensus view of the 1980s and find negative employment effects primarily concentrated among younger workers (e.g., Currie and Fallick 1996; Neumark 2001; Williams and Mills 2001; Neumark and Wascher 2002; Neumark, Schweitzer, and Wascher 2004). Further, the surveys of Brown (1999) and Neumark and Wascher (2007) point out that much of the empirical work in the “new” research actually estimates small and negative employment responses to increases in minimum wages.

Nevertheless, the widely held view today in the economics profession maintains that relatively modest increases in the minimum wage exert negligible impacts on employment. In particular, according to a survey of senior faculty from the top research universities in the United States conducted by the Initiative on Global Markets, only 40 percent (confidence weighted) believe that raising the federal minimum wage would make it noticeably harder for low-skilled workers to find employment. Advocates of the minimum wage often cite such consensus when arguing that impacts on employment can be ignored.

B. Raising Prices

A cost of the minimum wage commonly acknowledged by its advocates concerns its impacts on prices. The labor demand curve, which leads to the basic conclusions about employment effects, assumes that product prices are held constant. This is a reasonable assumption for firms that compete with other firms that are not affected by the minimum wage increase, such as overseas or high-tech firms that employ higher-wage workers. However, many of the industries that employ minimum wage workers do not compete in such markets. These include the types of service industries that make up the largest share of low-wage employers: eating and drinking establishments and retail trade. For these industries, an increase in the minimum wage principally represents an industrywide increase in costs. Therefore, prices for low-wage goods will rise. (Output could also fall, depending on the price sensitivity of consumers, but this reaction is often presumed not to occur to avoid the implications for re-
duction in employment.) In this price increase scenario, some of the burden of the minimum wage increase falls on the consumers of low-wage products.

Although rigorous research on the subject is somewhat limited, a body of work has developed examining the impact of a minimum wage on prices. The basic theoretical predictions were first noted by Stigler (1946) and have been further described by Hamermesh (1993) and Aaronson and French (2007). Lemos (2008) surveys the empirical literature in this area and presents evidence supporting the claim that prices rise as a result of minimum wage increases. Synthesizing the findings of nearly 30 studies, this survey assesses estimated price elasticities in response to minimum wage increases equal up to 0.4 for food prices and up to 0.04 for overall prices.

One set of studies directly estimates price impacts (e.g., Card and Krueger 1995; Aaronson 2001; Lemos 2006; MacDonald and Aaronson 2006; Aaronson, French, and MacDonald 2008). Aaronson (2001), for example, explores the effects of increasing the minimum wage on restaurant prices using a competitive market model. From several data sources on restaurant prices in the United States and Canada, Aaronson’s results show that a 1 percent increase in the minimum wage leads to a statistically significant increase of approximately 0.07 percent in restaurant prices in both countries. Moreover, he finds that these price adjustments are short-run phenomena concentrated in the quarters before and after the enactment of the minimum wage increase. Card and Krueger (1995, 54) conclude that “prices rose 4% faster as a result of the minimum-wage increase” based on a comparison of price growth in New Jersey and Pennsylvania after a minimum wage increase in New Jersey, although the impacts on prices are imprecisely estimated in their cross-state comparisons. Still, Card and Krueger surmise that two different sources of data (city-specific consumer price indexes and observations on hamburger prices collected by the American Chamber of Commerce Research Association) indicate the same pattern of faster price increases in areas more affected by minimum wage increases. In fact, they find that the relationship between higher wages and these higher prices approximates the labor share of product costs, a result consistent with the theory that the majority of the costs are being passed on in higher prices.

Another set of studies indirectly estimate price impacts of minimum wages using input-output models to trace wage increases on the inter-industry flow of goods and services to simulate impacts on employment, output, and prices in the aggregate economy and various market sectors. Assuming a full pass-through effect, no substitution effects, no employment effects, and no spillover effects, Wolf and Nadiri (1981) used an input-output model and data from the Current Population Survey to estimate the price effects attributable to the 1963, 1972, and 1979 min-
imum wage increases. They estimate that a 10–25 percent minimum wage increase raises prices by 0.3–0.4 percent. Under similar assumptions, Lee and O’Roark (1999) use an input-output model to estimate price effects in the food and food service industries. They calculate that a 50-cent minimum wage increase would raise consumer prices of food and kindred products by approximately 0.3 percent. Moreover, the same increase would raise prices by 0.9 percent in eating and drinking establishments, an industry with a higher concentration of minimum wage workers and a larger share of labor costs. They also consider the potential impacts of wage spillovers that refer to increases in wages that occur for those earning slightly more than the minimum wage. This spillover leads to consumer prices increasing slightly more, but never by more than 1.5 percent in eating and drinking establishments and by 0.4 percent in food and kindred products.

Not all empirical studies find evidence of rising prices in response to a minimum wage increase. Katz and Krueger (1992), Machin, Manning, and Rahman (2003), and Draca, Machin, and Van Reenen (2011) do not obtain statistically significant impacts. But this evidence is not compelling since the predicted impacts of minimum wages on prices are small and price data are highly variable and influenced by many factors.

While the precise magnitude of the responsiveness of prices to minimum wage hikes is not firmly established, the direction of the price response seems clear. Most economists and policy makers accept the view that higher minimum wages translate into higher prices for the goods and services produced either directly or intermediately by low-wage workers affected by these policies. At least some of the burden of the increased wage bills faced by low-wage firms is passed on to the consumer through higher prices.

C. Reducing Profits

Since the minimum wage forces employers to pay higher wages, many policy makers and voters presume that minimum wages will be paid out of employer profits. However, a variety of reasons lead one to suspect that profits will not be a significant source for paying the costs of minimum wages. Most economic theory does not suggest that profits are a likely source of covering costs. Rebitzer and Taylor (1995), for example, show in a simple employment matching model with a large number of employers that the introduction of a minimum wage does not reduce profits for employers. Also, Card and Krueger (1995) demonstrate that the introduction of a minimum wage in an efficiency wage model does not reduce profits for employers.

From a less formal perspective, low-wage employers are less likely than other employers to have large profits. The firms that typically employ
low-wage workers are in highly competitive industries. Internal Revenue Service data from corporate income tax returns for major industries that employ low-wage workers (e.g., food stores, eating and drinking establishments, retail trade and department stores) show that most of these industries have lower net incomes than the average across all industries. Low-wage workers are also more likely to work for small employers (e.g., see Card and Krueger 1995). Small employers face greater competition in both the labor market and the product market, meaning that they are unable to command monopoly power in the hiring of workers or in the setting of product prices and therefore have lower profits.

Moreover, even among the most profitable firms, capital is likely to bear little, if any, of the costs of a wage increase. This is especially true for large, publicly traded firms. It is a general result in public finance that taxes are borne by those who are least able to adjust. Capital stock markets are extremely efficient, and the supply of capital is very price sensitive, meaning that a small decrease in returns to capital will cause investors to move their money into a firm with better returns. Firms therefore cannot reduce the returns on their stock and still expect investment.

Unfortunately, little empirical research exists on this subject. Card and Krueger (1995) use an event study of stock prices of firms that employ many low-wage workers such as McDonald’s and Wal-Mart. However, stock prices follow investors’ expectations about future profitability, so the connection between stock prices and the minimum wage is tenuous at best. Card and Krueger find little systematic relationship between excess returns and news about minimum wage changes. Using data from the United Kingdom, Draca et al. (2011) find some evidence suggesting that the minimum wage reduces firm profits in the very short run, but the long-run impacts are left unanswered.

In the case of small business employers, responses in entrepreneurial resources and capital investments to increases in factor prices are likely to occur over longer periods but would nonetheless mostly neutralize impacts on profits. While entrepreneurs may not be able to shift rapidly from an industry because of their specific skills and fixed costs, those on the margin will do so over time. The opportunity cost of small business entrepreneurs is to become highly paid employees. A reduction in their “profits” (i.e., their earnings) will induce the least profitable of them to move to their next-best alternatives through the closure of establishments. Consequently, just like capital, entrepreneurial resources will shift out of those industries with increased factor costs until equalization of returns is reestablished across industries.

Thus, despite the popular belief that firms pay for minimum wage increases through lower profits, there is little empirical evidence to date supporting this hypothesis, and basic economics suggests compelling reasons this would be a minor factor. In fact, the discussion of the GE
model later in this paper outlines why economic theory could predict that returns to capital (and, thus, profits) can be expected to rise in response to an increase in the minimum wage when employment losses are assumed not to occur for the labor receiving this wage.

D. Assumptions on Paying for Minimum Wages in Assessing Distributional Consequences

To depict the circumstances deemed most likely to apply by minimum wage advocates, the analysis below assumes that no employment or profit losses occur as a result of minimum wage increases. Although many economists remain convinced that increases in the minimum wage will decrease employment, the recent literature on this subject has convinced most policy makers that such employment effects are very minimal. While many in the public policy community intimate that minimum wage increases are paid out of firm profits, no reliable evidence supports this position and few minimum wage advocates in the United States cite this position.5 This leaves price adjustments as the source for paying for minimum wage increases. If all the costs of the minimum wage are passed on to consumers in the form of higher prices, then price increases should reflect the wage increase multiplied by labor’s share of the total cost. In order to have no job or profit loss, consumers must continue to purchase the same amount of low-wage goods at the higher price. Thus, our simulations make three related assumptions:

- consumers do not reduce consumption as prices rise,
- all increased labor costs are passed on in higher prices, and
- low-wage workers remain employed at the same number of hours after the minimum wage rises.

Taken together, these three assumptions provide a setting for simulating the expected effects of minimum wage increases in a relatively straightforward manner. One need not believe that all these assumptions hold in reality, preferring instead to believe that firms pay for minimum wage hikes through all possible sources. This simulation environment, however, depicts a world with no job loss, which is the notion popularly maintained by proponents of the minimum wage. The simulation findings provide a basis for understanding the effectiveness of the minimum wage in redistributing resources across the household income distribution.

5 If minimum wages do reduce profits, then their effects on the income distribution may be more progressive than measured in this study, since stockholders tend to be more wealthy Americans. However, how much more progressive is unclear since many Americans, even ones who are not particularly wealthy, own stock through private and public retirement portfolios.
III. Overview of Methodology and Data

Although the above discussion primarily focuses on payment sources for costs, one must also consider the benefit side of the picture to understand the distributional effects of a minimum wage. The two sides of the simulation analysis—benefits and costs—presented below require different data sets. This section presents an overview of these data and the methodology applied to measure the benefits and costs of an increase in the minimum wage.

A. Description of Data

To calculate the benefits of a minimum wage increase, the analysis relies on data from SIPP, a nationally representative survey of households conducted by the US Census Bureau. To depict circumstances relevant to the 1996 increase in the federal minimum wage, the analysis uses data from waves 1–3 of the 1996 SIPP; the dates covered by these survey waves place them before the 1996 change in the minimum wage. The SIPP data provide information on households, families, and individuals over 15 years of age, including monthly data on income and earnings by source, wages, hours worked, demographic characteristics, family structure, and public-assistance program participation. These data permit identification of low-wage workers, their occupations and industries, their family income, and sufficient information to determine income tax burdens under alternative income scenarios using the National Bureau of Economic Research (NBER) income tax simulator (TAXSIM) program. The following analysis uses SIPP to simulate both the before- and after-tax effects of a minimum wage increase on the earnings and incomes of families with various characteristics.

To translate the effects of price increases induced by a minimum wage on families’ costs of consumption, the analysis relies on data from the CES matched to the same time period as SIPP. The CES is a nationally representative survey of households conducted by the US Bureau of Labor Statistics that includes information on family expenditures on a comprehensive and detailed array of goods and services. It also incorporates a number of income measures and demographic characteristics. Although the income and demographic measures in the CES are not as detailed as those in SIPP, both data sets identify comparable categories of families characterized by their position in the income distribution, poverty level, welfare status, and family structure.

To trace the higher earnings of workers affected by the minimum wage to the prices of the products produced by these workers, the analysis uses national input-output data constructed by the IMPLAN Group. These IMPLAN input-output tables summarize databases on employment, value...
B. Overview of Methodology

Figure 1 illustrates the steps that make up the methodology implemented below to simulate the distributional consequences of increases in the minimum wage. In the figure, data sets are listed in a bold font, and the arrows indicate inputs into the next step.

Starting with SIPP data in this figure, the first step calculates the effect of the 1996 increase in the minimum wage on the earnings of affected workers and on their family income, assuming no change in hours worked. Section IV.A describes the precise formulation of these calculations. This information is then used for both the benefit and the cost sides of the computations.

On the benefit side, these SIPP calculations measure how much the income of each individual family in the survey changes as a result of the wage increase. The second step computes the distribution of these benefits across families categorized by their income quintiles, poverty levels, extent of dependence on low-wage earnings, welfare recipient status, and demographic characteristics. To translate benefits into after-tax values, the third step applies the NBER TAXSIM calculator to each family’s circumstances to determine how much of these additional benefits (i.e., earnings) are reduced through federal, state, and payroll taxes. This produces the final after-tax benefits for each family. The last step on the benefit side generates the distribution of after-tax benefits for the same family categorizations used for the before-tax distributions. Section IV presents these findings.

On the cost side, computations of the minimum wage increase are far more challenging. Inferring the shares of costs borne by the different categories of families requires two sets of calculations: (i) measures of how much prices rise by commodity in response to the minimum wage increase and (ii) the effects of these price increases on the consumption costs by family given its expenditure composition across commodities.

Computing measures of price impacts requires two steps after the first step described above making up the SIPP calculations measuring how much the labor cost of each individual rises as a result of a minimum wage increase. Using information in SIPP on each low-wage worker’s industry of employment, the second step computes the amounts that labor costs rise in each industry. In addition to higher wage costs, employers must also pay higher payroll taxes, primarily in the form of employers’ 

6 The IMPLAN data come from data collected by the Bureau of Economic Analysis, the Bureau of Labor Statistics, and the Census Bureau, among other sources.
contributions to Social Security. Both higher wages and taxes are included in the increased labor costs computed by industry. Then, the third step translates these higher employment costs (i.e., direct costs) into price increases for each final consumer good and service using the IMPLAN input-output tables. This is simply an accounting exercise consistent with the assumption that firms respond to higher labor costs by increasing prices. Sections V.A and V.B present details on the calculation of final price increases.

Computing measures of consumption costs involves two additional steps building on the second and third steps implemented above in calculating price impacts. The fourth step on the cost side uses data from the CES to identify the composition and levels of consumption by different family types for each good and service and translates commodity price increases into consumption cost increases for each family, assuming no change in the family's quantities consumed. The fifth and last step categorizes families in the CES by income quintiles, consumption quintile, poverty status, welfare participation, and other family characteristics and computes the distributions of increased consumption costs across these categories. Section V.C presents these findings.

Finally, to infer the net effects of an increase in minimum wages, Section VI integrates the benefits and cost allocations across and within family types to compute the overall distributions for each category of families. The analysis also calculates the aggregate benefits and cost transfers through a minimum wage increase. Increases in the minimum wage are
known to have spillover effects on raising the wages of workers just above the minimum wage, which is ignored in this analysis. While the following calculations do not measure these effects, computations done in supplemental work analogous to those implemented below produce distributional findings fully compatible with those presented in this paper.

IV. Who Benefits from Increases in the Minimum Wage?

This section first shows how to calculate the additional pretax and posttax earnings for each family induced by an increase in the minimum wage and then examines how these additional earnings are distributed across families by a variety of characteristics with emphasis on particular types of families that might be considered the most important targets of minimum wage policy. Finally, the section reviews previous research done on the distribution of benefits.

A. Calculating Pretax and After-Tax Benefits of Families with Low-Wage Workers

Family gross earnings and income are raised by the combined increase in earnings of all family members; this change in family earnings is the pretax benefit and is calculated as follows. For each worker in the family identified as earning an hourly wage below the new legally specified minimum wage level in 1996, the analysis assumes that his or her hourly wage rises to the new minimum, that is, from as low as $4.25 (the old minimum) to exactly $5.15 (in 1996 dollars). The computations use the new wage rate and annual number of hours worked to calculate the implied increase in total earnings for each worker assuming that there is no change in hours of work. For workers earning less than the old minimum wage of $4.25, the analysis assumes that they also receive a $0.90 wage increase, which does not bring them up to the full $5.15 per hour. The computations assume no spillover benefits for workers already earning more than the new minimum wage.

For the after-tax benefit, the analysis adjusts the increased income for federal and state income taxes (fully incorporating the net effects of the Earned Income Tax Credit [EITC]) and for payroll taxes using the NBER TAXSIM program. These calculations account for the dependent status of young workers as this plays an important role in determining tax liability. These calculations also assume that all married couples are joint taxpayers. Because of data limitations, all taxpayers are assumed to

7 In 1996, taxpayers could claim a dependent exemption if they had a dependent under age 18 or had a dependent under age 23 who was a full-time student. The computations
take the standard deduction rather than itemize their deductions, which should have little impact on low-income taxpayers.

B. Distribution of Benefits across Families by Income: Before and After Tax

Using the before- and after-tax benefits calculated for each family in SIPP, one can compute the shares of benefits received by families sorted by a variety of characteristics, including income quintiles, income as a multiple of the poverty level, presence of children, headship and marriage status, wage rate levels, and dependency on public assistance. Table 1 presents the distributions of benefits across different partitions of families.

To highlight the distribution of benefits across family income, panel A of table 1 segments families into five income quintiles and reports the average levels and distribution of benefits (i.e., higher earnings) across these quintiles. For each quintile, column 5 shows the share of families that include one or more minimum wage workers (i.e., those who benefit from the minimum wage increase). The result is perhaps surprising for those unfamiliar with similar findings in the literature. The minimum wage population is almost equally distributed across the income distribution. While 22.3 percent of all families have one or more minimum wage workers, only slightly more (22.6 percent) families in the lowest quintile include low-wage workers and therefore benefit from the minimum wage increase. This is nearly identical to the 22.7 percent of families in the highest income quintile that have a worker who benefits from a minimum wage increase. Thus, approximately one in five families benefit, regardless of their income.

The more relevant question of “Where do the dollars go?” is addressed in columns 2–4 of table 1. If high-income households have low-wage workers who typically work fewer hours than the low-wage workers at the bottom of the distribution (e.g., part-time teenagers as opposed to family breadwinners), then one would expect the additional dollars from the wage increase to flow disproportionately to the poorer families. Column 2 presents the distribution of additional earnings due to the minimum wage increase across the five quintiles. If the benefits were identically distributed across all families, each quintile would receive about 20 percent of the extra earnings and more than its share of the additional earnings if it receives more than 20 percent. This is essentially the story revealed in table 1: benefits are evenly divided across quintiles.

here assume that any child under age 18 who lived at home for some part of the sample period and earned less than $20,000 (in 1996 dollars) was claimed as a dependent by the parent(s). Children under age 23 who reported being enrolled in college were also assumed to be claimed as dependents by the parent(s). The TAXSIM program fully accounts for these factors in its calculations of income taxes and EITC.
The 40 percent of families at the bottom of the income distribution receive only 38.3 percent of the additional earnings from the minimum wage. Conversely, the top 40 percent of families receive 40.3 percent of the extra earnings. The minimum wage increase distributes money to families at all income levels with little preference given to any group.

Since the US tax system is progressive, the distribution of extra earnings changes when calculating the shares of earnings after taxes, as reported in column 3. The poorest families lose less of their extra earnings to taxes: their share drops only 2.2 points from 19.9 percent to 17.7 percent. Those families in the highest income quintile fare worse: their share drops 6 percentage points from 18.6 percent to 12.6 percent. The distributional impact of the tax system is also apparent from comparing the average value of after-tax benefits for families that have a minimum wage worker as reported in column 4 of table 1. Again, low-income families benefit more than high-income families, though not by as much as might have been expected. Through taxation, the government captures about one-quarter of the total benefits from the minimum wage increase.

These calculations ignore the potential loss of cash and in-kind welfare benefits for families under and near the poverty level whose income rises as a result of the minimum wage. The computation of after-tax benefits performed in this analysis includes transfers from the EITC program, but not from such income support programs as Temporary Assistance to Needy Families (TANF), Aid to Families with Dependent Children (AFDC), and food stamps. Accounting for these welfare transfers would strictly worsen the distributional consequences of the minimum wage conveyed by this study.

C. Benefits to Other Target Families

While ranking families by income does not take into account family size, poverty levels do. Panel C of table 1 report the shares of minimum wage benefits going to families with income and sizes measured against multiples of the poverty threshold. As shown in the after-tax shares in table 1, 13.4 percent of benefits go to families below the poverty threshold. However, nearly 30 percent of the after-tax benefits go to families with incomes that are more than three times the poverty threshold. Thus, the majority of the additional earnings do not go to poor (or near-poor) families.

Another primary target of the minimum wage consists of families dependent on the earnings from a low-wage worker for a substantial part of total family earnings. Panel D of table 1 lists results for four different specifications of families with children that rely on the earnings of low-wage employees: families for which more than 50 percent of their total earnings comes from employment that pays (i) no more than $5.15 per
<table>
<thead>
<tr>
<th>Family Type</th>
<th>Percent of All Families (1)</th>
<th>Percent of Pretax Benefits (2)</th>
<th>Percent of After-Tax Benefits (3)</th>
<th>Average After-Tax Benefits Families with Minimum Wage Worker ($) (4)</th>
<th>Percent of Families with Minimum Wage Worker (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Income quintile:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest income quintile</td>
<td>20.0</td>
<td>19.9</td>
<td>17.7</td>
<td>595</td>
<td>22.6</td>
</tr>
<tr>
<td>2nd income quintile</td>
<td>20.0</td>
<td>18.4</td>
<td>13.5</td>
<td>518</td>
<td>19.7</td>
</tr>
<tr>
<td>Middle income quintile</td>
<td>20.0</td>
<td>21.4</td>
<td>15.7</td>
<td>525</td>
<td>22.6</td>
</tr>
<tr>
<td>4th income quintile</td>
<td>20.0</td>
<td>21.7</td>
<td>15.0</td>
<td>475</td>
<td>24.0</td>
</tr>
<tr>
<td>Highest income quintile</td>
<td>20.0</td>
<td>18.6</td>
<td>12.6</td>
<td>421</td>
<td>22.7</td>
</tr>
<tr>
<td>B. Taxes:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal income taxes</td>
<td>...</td>
<td>...</td>
<td>14.6</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>State income taxes</td>
<td>...</td>
<td>...</td>
<td>3.0</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Payroll taxes (FICA)</td>
<td>...</td>
<td>...</td>
<td>7.9</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>C. Poverty level:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than half the poverty threshold</td>
<td>5.3</td>
<td>3.6</td>
<td>3.9</td>
<td>502</td>
<td>22.0</td>
</tr>
<tr>
<td>50%–100% of the poverty threshold</td>
<td>8.9</td>
<td>10.7</td>
<td>9.5</td>
<td>603</td>
<td>26.7</td>
</tr>
<tr>
<td>1–2 times the poverty threshold</td>
<td>18.4</td>
<td>20.7</td>
<td>17.4</td>
<td>573</td>
<td>25.2</td>
</tr>
<tr>
<td>2–3 times the poverty threshold</td>
<td>16.1</td>
<td>17.3</td>
<td>14.0</td>
<td>552</td>
<td>23.9</td>
</tr>
<tr>
<td>More than 3 times the poverty threshold</td>
<td>51.2</td>
<td>46.1</td>
<td>29.6</td>
<td>456</td>
<td>20.1</td>
</tr>
</tbody>
</table>
D. Wages: families with children where ≥50% earnings (1996 $) come from:

| Jobs paying at most $5.15/hour | 1.7 | 9.9 | 8.7 | 774 | 99.8 |
| Jobs paying at most $6.00/hour | 3.7 | 14.8 | 12.5 | 660 | 76.7 |
| Jobs paying at most $7.50/hour | 7.0 | 29.1 | 16.3 | 588 | 60.2 |
| Jobs paying at most $10.00/hour | 12.5 | 28.1 | 22.2 | 543 | 49.3 |

E. Family type:

| Married | 48.9 | 57.3 | 40.7 | 488 | 26.0 |
| Married with children (under 18) | 25.6 | 39.0 | 28.0 | 485 | 34.3 |
| Single | 48.8 | 40.4 | 31.9 | 546 | 18.2 |
| Single with children (under 18) | 10.6 | 14.4 | 12.3 | 513 | 34.2 |
| Families below 2 times poverty with children | 11.1 | 18.5 | 15.5 | 563 | 37.9 |
| Families below poverty with children | 5.0 | 7.4 | 7.5 | 599 | 38.0 |
| Welfare recipient families | 18.2 | 24.8 | 20.3 | 549 | 30.9 |
| Welfare recipients with children | 9.5 | 16.5 | 13.8 | 548 | 40.2 |
| Families with minimum wage worker | 22.3 | 100.0 | 75.3 | 511 | 100.0 |

Note.—This table uses the 1996 SIPP data on all workers aged 15 and over to compute the impact of a $0.90 increase in the 1996 minimum wage, as described in the text. Column 4 reports after-tax benefits in 2010 dollars.
hour, (ii) no more than $6.00 per hour, (iii) no more than $7.50 per hour, and (iv) no more than $10.00 per hour. Not surprisingly, table 1 shows that these target families receive larger after-tax benefits on average and receive a disproportionate share of minimum wage benefits. For example, families in the third category receive 20 percent of all minimum wage benefits, even though they make up only 7 percent of all families. However, even when the low-wage threshold is expanded to include wages as high as $10.00 per hour, only 22 percent of total after-tax minimum wage benefits go to these target families.

Panel E of table 1 presents projected allocations for married and single families, distinguishing those with children. In general, families with children receive more benefits than those without. Families with children below twice the poverty level receive only 15.5 percent of the total after-tax minimum wage benefits. Table 1 also gives results for families who received welfare at some time during the year. With welfare interpreted as public cash aid and/or food stamps, welfare recipient families with children account for 9.5 percent of families, and they are projected to receive 13.8 percent of the after-tax additional earnings generated by a minimum wage increase.

D. Previous Research on the Distribution of Benefits

This assessment of the distribution of benefits mostly replicates early work by Gramlich (1976), Johnson and Browning (1983), Burkhauser and Finegan (1989), Horrigan and Mincy (1993), and Burkhauser and Sabia (2007). These studies also document that many low-wage workers are members of high-income families. This is especially true for teenagers who are distributed throughout the entire family income distribution and often find employment in minimum wage jobs. This literature consistently shows that while the minimum wage has a small effect on earnings inequality, it has virtually no effect on income inequality. Johnson and Browning (1983) and Horrigan and Mincy (1993) focus on the distribution of minimum wage benefits by family income quintile and show that the additional minimum wage earnings are only mildly redistributive, with somewhat larger benefits going to families in the second to lowest income quintile. Burkhauser and Finegan (1989) and Burkhauser et al. (2000) focus on the distribution of benefits by families’ income measured as multiples of the poverty threshold. They find that the distribution of benefits going to families who depend on low-wage employment for more than half of total family earnings and to families who participate in a welfare program. The findings for these groups, however, fit with the well-established conclusion of this literature: the minimum wage represents a very blunt policy instrument for providing benefits to low-income families.

* Several sets of results in table 1 are not elsewhere in the literature: most important, benefits going to families who depend on low-wage employment for more than half of total family earnings and to families who participate in a welfare program. The findings for these groups, however, fit with the well-established conclusion of this literature: the minimum wage represents a very blunt policy instrument for providing benefits to low-income families.
benefits is not significantly different from the population shares. Burkhauser and Finegan (1989), for example, find that only 18 percent of workers who benefit from a minimum wage increase had a family income that was below the poverty threshold. Burkhauser et al. (2000) find that only 13 percent of affected workers were in poverty. Card and Krueger (1995) report similar results, as do Burkhauser and Sabia (2007), who report benefit shares not only on the distribution of minimum wage benefits by family income quintile but also for near-poor families defined by poverty levels.

E. Summary: Distribution of Benefits

Minimum wage policy offers an inefficient mechanism for boosting the incomes of families that policy makers typically think of as the intended beneficiaries of minimum wage increases: poor families, those supported primarily by low-wage work, and those on welfare. About 35 percent of the total increase in after-tax benefits goes to families with income less than two times the poverty threshold, a common definition of the working poor or near-poor; nearly 13 percent goes to families principally supported by low-wage workers defined as earning wages at or below 117 percent (\(= \$6.00/\$5.15\)) of the new 1996 minimum wage; and only about 14 percent goes to families with children on welfare.

Unlike most public income support programs, increased earnings from the minimum wage are taxable. Over 25 percent of the increased earnings are collected back as income and payroll taxes, including the net effect of EITC, which subsidizes low-earning families. Even after taxes, 27.6 percent of increased earnings go to families in the top 40 percent of the income distribution.

V. Who Pays for Increases in the Minimum Wage?

If employment and profits are unaffected, then the cost of the minimum wage increase is covered through higher prices. As prices rise on the goods and services produced by low-wage workers, all consumers of these products are essentially subsidizing the low-wage workers. The following discussion shows that prices rise on a wide variety of goods, imposing across-the-board price increases that hit all consumers.

To assess the distributional impacts of these price increases, Section V.A relies on national input-output tables to calculate how much individual product prices must rise to cover the new labor costs induced by the minimum wage increase, and Section V.B summarizes the findings produced by this analysis. From the employer’s perspective, the increase in labor costs will be greater than the increase in earnings since employers will also have to pay higher payroll tax contributions. These price calcu-
lations assume a national market with the new prices imposed on all consumers. The analysis then translates these price increases into total consumption cost by family, and Section V.C describes the allocation of these consumption costs across families broken down by their income and demographic characteristics.

A. Attributing Labor Costs to Price Increases

The first step in determining who pays for the minimum wage hike involves calculating the impact of the increased labor costs on the total cost of final goods and services. The following analysis assumes that, if the cost of labor increases in a particular industry, then the price of that industry's output will rise to increase consumer expenditures by the same amount. There are two ways for the total cost of goods to increase after a minimum wage increase. First, there is the direct effect on the cost of labor for industries hiring low-wage workers. Second, there is the indirect effect through intermediate goods. While a portion of an industry's output is consumed by final users (e.g., households and government), the rest of the output is allocated to intermediate use, where the output of the original industry becomes an input for another. Thus, even if an industry employs no minimum wage workers, the prices for that industry's output may rise because the industry uses goods or contracts for services produced with minimum wage labor. This feedback through intermediate uses continues ad infinitum, so the price shock from the wage hike propagates throughout the economy.

The calculations begin by determining the industries that employ low-wage workers. From the SIPP, one can identify all industries that employed workers at wages below the new minimum of $5.15. Considering all low-wage workers in a given industry, one can infer the total increase in industry labor costs resulting from the wage hike, including additional employer contributions for Social Security. Denote these increases by the vector $\mathbf{x}_0$.

The next step is to translate these cost changes into price increases of final goods. The input-output tables provide information to construct the square matrix $B$, where the $(i, j)$ element of this matrix represents the share of commodity $j$ produced by industry $i$. In this representation of the economy, the vector $\mathbf{y}_0 = B \mathbf{x}_0$ specifies the initial increase in costs to produce each commodity or commodity bundle, where elements of the vector $\mathbf{x}_0$ measure the increases in labor costs for each industry attributable to the minimum wage hike. To account for the phenomenon that many commodities are used as inputs in the production of other com-

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9 Commodity bundles are given broad definitions such as food inside the home, food outside the home, rent or home ownership costs, automobile expenditures, etc.
modities, input-output tables specify a square matrix $U$, where the $(i, j)$ element of this matrix represents the proportion of commodity $i$'s output used by industry $j$. Given these specifications, the vector $y_1 = (I + B'U')B'x_0$ constitutes first-round carryover cost incorporating the price increases of intermediate goods. After a sufficiently large number of iterations, the long-run vector of costs arising from the initial increase in labor expenses equals $y_* = (I - B'U')^{-1}B'x_0$. To allocate these increased costs into the final uses of production, input-output frameworks provide data to construct diagonal matrices $F_k$ with diagonal elements $f_{ki}$ designating the fraction of commodity $i$'s total production that goes to final use $k$, where $k = 1, \ldots, 5$ identifies one of the following five categories of final use: households, gross investment, government, inventories, and exports and imports.\(^{10}\) When results are combined, the amount of increased costs passed on to final-use category $k$ is $F_ky_*$. Finally, to close the system, one must allocate final-use costs for gross investment and inventories to consumption goods in order not to lose their higher costs in the computations of price increases. In the case of gross investment, this computational analysis treats investment as a form of intermediate goods and allocates their costs in proportion to each industry’s use of capital as reported by the Bureau of Economic Analysis 1992 Capital Flow Table.\(^{11}\) The analysis treats residential investment as a final consumption good. In the case of inventories, the analysis allocates costs proportionally to the two domestic final users: households and government.

Given these computations, the analysis is now parallel to the starting point on the benefits side. The CES specifies the levels of goods and services consumed by each family. To calculate price effects, one must bundle these products into industries and commodities consistent with the input-output tables. For example, the commodities grocery stores, dairy product stores, retail bakeries, and food stores are mapped into the goods expenditure category “food inside the home.” Given these mappings, one can add up the price increases calculated above across bundles to compute the increased expenditures required for a family to maintain its original level of consumption after the price increases implied by the minimum wage increase.

As with the benefit side, analyzing costs at the family level relates expenditure increases to family characteristics. In particular, one can measure the additional consumption costs allocated to families according to their income and consumption quintile, income relative to the poverty

\(^{10}\) The IMPLAN input-output tables have 10 final-use sectors, which this analysis aggregates into the consumption groups considered in this paper.

\(^{11}\) The Bureau of Economic Analysis investment data by using industry are available online at http://www.bea.gov/industry/capflow_data.htm. These 1992 data are closest to year 1996, which is analyzed in this study.
level, welfare status, marriage status, classification as female headship, and the presence of children.

B. Price Increases from Increased Labor Costs

While the computations below account for all goods and services, one can better understand the cost of the minimum wage on prices by considering the effect on a subset of heavily affected industries. Table 2 lists the 23 industries with the largest number of minimum wage workers. These 23 most heavily affected industries account for 75 percent of all minimum wage jobs. Column 1 presents the percentage of all workers employed in the designated industry benefiting from the 1996 increase of $0.90 in the federal minimum wage. Column 2 gives the per-

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percent All Minimum Wage Jobs</th>
<th>Percent All Minimum Wage Hours</th>
<th>Percent Direct Costs</th>
<th>Percent Final Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eating and drinking places</td>
<td>20.97</td>
<td>18.45</td>
<td>18.67</td>
<td>19.83</td>
</tr>
<tr>
<td>Other retail trade</td>
<td>6.36</td>
<td>5.60</td>
<td>5.02</td>
<td>5.20</td>
</tr>
<tr>
<td>Grocery stores</td>
<td>6.31</td>
<td>5.24</td>
<td>4.49</td>
<td>4.58</td>
</tr>
<tr>
<td>Elementary and secondary schools</td>
<td>4.07</td>
<td>4.20</td>
<td>5.00</td>
<td>5.30</td>
</tr>
<tr>
<td>Household miscellaneous personal services</td>
<td>3.66</td>
<td>3.35</td>
<td>3.98</td>
<td>4.24</td>
</tr>
<tr>
<td>Government</td>
<td>2.96</td>
<td>3.42</td>
<td>4.19</td>
<td>1.43</td>
</tr>
<tr>
<td>Colleges and universities</td>
<td>2.89</td>
<td>2.29</td>
<td>2.63</td>
<td>2.87</td>
</tr>
<tr>
<td>Miscellaneous entertainment and recreation</td>
<td>2.86</td>
<td>2.26</td>
<td>2.15</td>
<td>2.42</td>
</tr>
<tr>
<td>Department stores</td>
<td>2.69</td>
<td>2.31</td>
<td>1.78</td>
<td>1.97</td>
</tr>
<tr>
<td>Construction</td>
<td>2.52</td>
<td>3.00</td>
<td>2.94</td>
<td>2.63</td>
</tr>
<tr>
<td>Hotels and motels</td>
<td>2.22</td>
<td>2.27</td>
<td>2.03</td>
<td>1.01</td>
</tr>
<tr>
<td>Wholesale goods</td>
<td>2.02</td>
<td>2.47</td>
<td>2.37</td>
<td>1.44</td>
</tr>
<tr>
<td>Child day care services</td>
<td>1.68</td>
<td>1.54</td>
<td>1.52</td>
<td>1.75</td>
</tr>
<tr>
<td>Apparel and accessories</td>
<td>1.58</td>
<td>1.95</td>
<td>2.05</td>
<td>2.18</td>
</tr>
<tr>
<td>Agricultural production crops</td>
<td>1.55</td>
<td>1.92</td>
<td>2.15</td>
<td>.81</td>
</tr>
<tr>
<td>Motor vehicle dealers</td>
<td>1.51</td>
<td>2.03</td>
<td>1.99</td>
<td>2.39</td>
</tr>
<tr>
<td>Movies and videos</td>
<td>1.37</td>
<td>1.02</td>
<td>.93</td>
<td>.49</td>
</tr>
<tr>
<td>Real estate</td>
<td>1.27</td>
<td>1.67</td>
<td>1.96</td>
<td>4.82</td>
</tr>
<tr>
<td>Health services</td>
<td>1.24</td>
<td>1.22</td>
<td>1.14</td>
<td>1.51</td>
</tr>
<tr>
<td>Trucking and warehousing</td>
<td>1.23</td>
<td>1.96</td>
<td>2.23</td>
<td>.74</td>
</tr>
<tr>
<td>Apparel and accessory stores</td>
<td>1.21</td>
<td>.89</td>
<td>.76</td>
<td>.88</td>
</tr>
<tr>
<td>Nursing and personal care facilities</td>
<td>1.18</td>
<td>1.15</td>
<td>.86</td>
<td>1.17</td>
</tr>
<tr>
<td>Religious organizations</td>
<td>1.16</td>
<td>1.22</td>
<td>1.45</td>
<td>1.69</td>
</tr>
</tbody>
</table>

Note.—The 1996 SIPP data on all workers aged 15 and over are used in cols. 1 and 2 to determine the industry of workers who benefit from the $0.90 increase in the 1996 minimum wage, as described in the text. The IMPLAN input-output tables are used in combination with the SIPP data in cols. 3 and 4 to calculate the direct and final costs as described in the text.
percentage of all hours worked by employees benefiting from the minimum wage increase. Column 3 reports the percentage of total direct labor cost increases by industry, and column 4 lists the percentage of total final costs (which includes the increased cost of intermediate goods).

For a number of consumption goods, the final cost increase is lower (in dollar value, not just percentage) than the direct increase in labor costs. This can occur when the final users of the outputs live outside the United States. In these instances, the United States exports some of the costs of the wage increase. Alternatively, the costs may be redirected to government expenditures (which are not tracked). Final costs can also be larger than direct costs when the industry uses as inputs the output from other industries employing low-wage workers. For example, a large part of the construction industry involves building residential homes, which then become an input to the real estate industry that sells the homes; thus, much of the direct costs to the construction industry show up in the real estate industry’s final costs.

Table 3 reports the share of the total national cost increase accounted for by commodities grouped into broad consumption categories in column 1. Prices increased for a very long list of goods purchased by families. As expected, food outside the home accounts for the largest share of additional costs since eating and drinking establishments make up the industry most affected by the increased labor costs.

The magnitude of the final price increase depends on the size of the labor cost increase relative to the industry’s overall costs of production. For each good, dividing the additional costs by the total expenditures yields a percentage cost increase. The discussion below refers to these price increases as “implicit incremental tax rates” on household consumption goods. Essentially, these tax rates identify the amount by which consumer prices must increase to cover the total costs added by the minimum wage hike.

Table 3 presents these incremental price increases by broad commodity bundles in column 2. These price increases may at first appear relatively small; one of the largest rates is only 1.83 percent for food outside the home. However, a 0.0185 tax rate increase is large when compared to common state-level sales tax rates. The largest incremental price increases occur for education and social services, moving and storage, miscellaneous personal services such as beauty and barber shops, and food outside the home. It is worth noting that, although these price increases appear small enough to justify the assumption that consumption levels do not change, most families facing these higher prices do not receive additional earnings, so the higher prices will require either a reduction in consumption in nonaffected goods or a reduction in savings.
The price increases reported in table 3 are well within the range found elsewhere in the literature. As reviewed briefly in Section II, the estimated elasticities for responses in prices to increases in the minimum wage fall between 0.04 and 0.4. The computations in this paper consider a 21.2 percent increase in the minimum wage from $4.25 to $5.15. This implies that price increases should be between 0.0085 and 0.085 on average. As shown in column 2 of table 3, the implicit tax rates found in this paper are, on average, in the lower part of this range.

C. Distribution of Costs across Families

The costs paid by each family for the 1996 increase in the minimum wage are determined by applying the implicit tax rates in table 3 to the data on individual consumption goods and services reported in the CES for each family. As with the benefit side, one can further aggregate these costs by family characteristics including income quintile, income relative

<table>
<thead>
<tr>
<th>Commodity Bundle (Industry)</th>
<th>Share of Increased Cost Accounted for by Commodity (%)</th>
<th>Implicit Incremental Tax Rate on Commodity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food: outside home</td>
<td>21.04</td>
<td>0.0185</td>
</tr>
<tr>
<td>Education and social services</td>
<td>11.06</td>
<td>0.0280</td>
</tr>
<tr>
<td>Food: inside home</td>
<td>9.56</td>
<td>0.0034</td>
</tr>
<tr>
<td>Other: general trade</td>
<td>9.06</td>
<td>0.0055</td>
</tr>
<tr>
<td>Other: personal consumption</td>
<td>7.80</td>
<td>0.0004</td>
</tr>
<tr>
<td>Health care and insurance</td>
<td>7.72</td>
<td>0.0004</td>
</tr>
<tr>
<td>Household: personal services</td>
<td>6.21</td>
<td>0.0200</td>
</tr>
<tr>
<td>Housing: rent</td>
<td>5.15</td>
<td>0.0025</td>
</tr>
<tr>
<td>Entertainment and recreation</td>
<td>3.87</td>
<td>0.0097</td>
</tr>
<tr>
<td>Household: clothing</td>
<td>3.44</td>
<td>0.0035</td>
</tr>
<tr>
<td>Transportation: car</td>
<td>3.20</td>
<td>0.0012</td>
</tr>
<tr>
<td>Household: utilities</td>
<td>2.57</td>
<td>0.0018</td>
</tr>
<tr>
<td>Banking and financial services</td>
<td>2.41</td>
<td>0.0029</td>
</tr>
<tr>
<td>Household: child care</td>
<td>1.85</td>
<td>0.0100</td>
</tr>
<tr>
<td>Transportation: auto service</td>
<td>1.51</td>
<td>0.0030</td>
</tr>
<tr>
<td>Housing: hotels</td>
<td>0.95</td>
<td>0.0053</td>
</tr>
<tr>
<td>Household: furniture</td>
<td>0.79</td>
<td>0.0027</td>
</tr>
<tr>
<td>Household: moving and storage</td>
<td>0.65</td>
<td>0.0235</td>
</tr>
<tr>
<td>Household: laundry and cleanings</td>
<td>0.32</td>
<td>0.0034</td>
</tr>
<tr>
<td>Transportation: air travel</td>
<td>0.32</td>
<td>0.0016</td>
</tr>
<tr>
<td>Household: legal services</td>
<td>0.26</td>
<td>0.0029</td>
</tr>
<tr>
<td>Household: computers and office supplies</td>
<td>0.15</td>
<td>0.0010</td>
</tr>
<tr>
<td>Household: landscape services</td>
<td>0.12</td>
<td>0.0013</td>
</tr>
<tr>
<td>Household: appliance repair</td>
<td>0.02</td>
<td>0.0012</td>
</tr>
</tbody>
</table>

Note.—The 1996 SIPP data and the IMPLAN input-output tables are used in combination to calculate the final cost by commodity, as described in the text.
to the poverty level, and family structure. Additionally, one can also aggregate costs for families by consumption quintile.

Table 4 reports the percentage of minimum wage costs borne by those in the specified quintile or family type in column 2 and the average annual cost in column 3. On average, families pay $136 (in 2010 dollars) more per year for their purchases to pay for the 1996 increase in the minimum wage. The amount a particular family pays depends on its level of consumer expenditures, which typically varies by income. These costs range from $74 annually for families in the lowest category to $250 for the richest families. Families in the highest income quintile pay 31.7 percent of the costs of the minimum wage, whereas the poorest 20 percent pay only 9.3 percent of the costs. Families living in poverty pay only 8.3 percent of the costs, compared to the 51 percent of costs paid by families with incomes greater than three times the poverty threshold.

Unsurprisingly, the costs of the minimum wage increase are more correlated with consumption than with income. According to table 4, families in the lowest consumption quintile bear only 5.3 percent of the cost while those in the highest consumption quintile bear 37.6 percent, though, as seen in column 4, the cost is a larger percentage of annual expenditure for families in the lowest consumption quintile compared to those in the highest consumption quintile. This indicates that families with lower levels of consumption disproportionately purchase the goods produced with the larger shares of minimum wage labor.

D. Summary: Cost Incidence of Minimum Wage Is More Regressive than Sales Tax

One of the realities of minimum wage policy is that families are unlikely to associate these minor price increases directly with the wage increase. Imagine, however, a value-added or sales tax that had the identical effect. That is, instead of increasing wages, the government could impose a value-added tax on specific products and distribute the proceeds from the tax to supplement the earnings of low-wage workers. Of course, no such tax is being considered, but it is useful to consider the price effects in this context.

Given this “value-added tax” interpretation of the price increases, the implicit tax rates reported in table 3 needed to pay for the 1996 hike in the minimum wage for the most affected commodity groups fall in the range 0.04–2.8 percent. The consequences of these differential tax rates across commodities on the total cost of a family’s consumption depend

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12 No doubt the broad industry categories applied in this analysis may mask some of the regressivity in calculated price increases. Poor people shop at Wal-Mart and eat at McDonald’s, while the rich are more likely to eat and shop in places where few or no workers earn the minimum wage.
on the degree to which the family purchases the commodities apportioned the higher rates. Column 4 of table 4 shows the combined impact of these implicit tax rates given the consumption patterns of families grouped by various family characteristics. One sees from these results that the poorest families typically pay the higher aggregated rates. Rates decrease monotonically from 0.63 percent for families in the lowest

### TABLE 4

**Minimum Wage Costs Paid by Various Family Types**

<table>
<thead>
<tr>
<th>Consumer Group</th>
<th>Percent All Families</th>
<th>Percent Minimum Wage Costs</th>
<th>Average Annual Cost per Family ($)</th>
<th>Cost as Percentage of Annual Family Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Income quintile:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest income quintile</td>
<td>20.0</td>
<td>9.3</td>
<td>74</td>
<td>.59</td>
</tr>
<tr>
<td>2nd income quintile</td>
<td>20.0</td>
<td>10.9</td>
<td>86</td>
<td>.50</td>
</tr>
<tr>
<td>Middle income quintile</td>
<td>20.0</td>
<td>14.4</td>
<td>114</td>
<td>.51</td>
</tr>
<tr>
<td>4th income quintile</td>
<td>20.0</td>
<td>19.5</td>
<td>154</td>
<td>.54</td>
</tr>
<tr>
<td>Highest income quintile</td>
<td>20.0</td>
<td>31.7</td>
<td>250</td>
<td>.58</td>
</tr>
<tr>
<td>B. Consumption quintile:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest consumption quintile</td>
<td>20.0</td>
<td>5.3</td>
<td>42</td>
<td>.63</td>
</tr>
<tr>
<td>Mid-low consumption quintile</td>
<td>20.0</td>
<td>9.0</td>
<td>71</td>
<td>.56</td>
</tr>
<tr>
<td>Middle consumption quintile</td>
<td>20.0</td>
<td>13.3</td>
<td>105</td>
<td>.56</td>
</tr>
<tr>
<td>Mid-high consumption quintile</td>
<td>20.0</td>
<td>20.6</td>
<td>163</td>
<td>.57</td>
</tr>
<tr>
<td>Highest consumption quintile</td>
<td>20.0</td>
<td>37.6</td>
<td>297</td>
<td>.52</td>
</tr>
<tr>
<td>C. Consumption sectors:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All families (domestic)</td>
<td>100.0</td>
<td>85.9</td>
<td>136</td>
<td>.54</td>
</tr>
<tr>
<td>Federal, state, and local government</td>
<td></td>
<td>7.6</td>
<td>. . .</td>
<td>. . .</td>
</tr>
<tr>
<td>Foreign consumers</td>
<td></td>
<td>6.7</td>
<td>. . .</td>
<td>. . .</td>
</tr>
<tr>
<td>D. Poverty level:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than half the poverty threshold</td>
<td>6.3</td>
<td>3.4</td>
<td>85</td>
<td>.63</td>
</tr>
<tr>
<td>50%–100% of the poverty threshold</td>
<td>9.9</td>
<td>4.9</td>
<td>78</td>
<td>.54</td>
</tr>
<tr>
<td>1–2 times the poverty threshold</td>
<td>23.3</td>
<td>12.9</td>
<td>88</td>
<td>.51</td>
</tr>
<tr>
<td>2–3 times the poverty threshold</td>
<td>18.6</td>
<td>13.7</td>
<td>116</td>
<td>.51</td>
</tr>
<tr>
<td>More than 3 times the poverty</td>
<td>41.9</td>
<td>51.0</td>
<td>193</td>
<td>.56</td>
</tr>
<tr>
<td>threshold</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Family type:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>52.3</td>
<td>55.7</td>
<td>169</td>
<td>.54</td>
</tr>
<tr>
<td>Married with children under 18</td>
<td>24.2</td>
<td>27.4</td>
<td>180</td>
<td>.54</td>
</tr>
<tr>
<td>Single</td>
<td>47.7</td>
<td>30.0</td>
<td>100</td>
<td>.56</td>
</tr>
<tr>
<td>Single with children under 18</td>
<td>8.5</td>
<td>5.9</td>
<td>111</td>
<td>.53</td>
</tr>
<tr>
<td>All families with children under 18</td>
<td>32.6</td>
<td>33.3</td>
<td>162</td>
<td>.54</td>
</tr>
<tr>
<td>Families below 2 times poverty with</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>children</td>
<td>12.9</td>
<td>8.2</td>
<td>101</td>
<td>.49</td>
</tr>
<tr>
<td>Families below poverty with children</td>
<td>5.3</td>
<td>2.8</td>
<td>84</td>
<td>.47</td>
</tr>
<tr>
<td>Welfare recipient families</td>
<td>9.8</td>
<td>4.4</td>
<td>71</td>
<td>.46</td>
</tr>
<tr>
<td>Welfare recipients with children</td>
<td>4.6</td>
<td>2.1</td>
<td>74</td>
<td>.46</td>
</tr>
</tbody>
</table>

**Note.**—This table relies on the Consumer Expenditure Survey to calculate family consumption of goods for which there was a minimum wage–induced price increase. Differences between this table and table 1 with respect to the characterization of families are due to differences between the CES and SIPP data. Column 3 reports average annual cost in 2010 dollars.
consumption quintile to 0.52 percent in the highest. Rates are larger for the lowest income quintile than for the highest and even larger than for the middle quintiles. The same pattern holds for families with income measured compared to the poverty level. Welfare recipients are the only lower-income group who incur lower implicit tax rates on consumption than the average incurred for all families.

State sales taxes often specifically exclude goods that are considered necessities, such as health care, housing, and food purchases. The aim of excluding these goods is to lessen the regressivity of the sale tax since low-income families purchase a disproportionately larger share of these goods in their overall spending. Interpreted as a sales tax, the minimum wage price increases do exactly the opposite. Prices tend to go up most on those goods that make up a larger fraction of consumption for the poor. So, although the rich pay more in terms of dollars, a “minimum wage tax” is more regressive than a typical sales tax.

VI. Net Effects of Minimum Wage Increases

The policy question posed in the introduction rests on the effectiveness of the minimum wage in targeting resources to poor families, where effective targeting means that benefits accrue disproportionately to low-income families and the costs fall disproportionately on high-income families. The previous two sections separately examined the benefits and the costs of the minimum wage for different categories of families, assuming that all costs are passed through as higher prices. Section VI.A now brings these two sides together to explore the net effects across different groups of families to assess how well a minimum wage increase targets resources to the poor. Section VI.B summarizes the aggregate costs and benefits for US workers, consumers, and taxpayers.

A. Net Distributional Effects by Family Characteristics

According to results from the previous sections, families paid $136 annually, on average, in higher consumption costs to fund the 1996 increase of $0.90 in the federal minimum wage and families received $114, on average, annually in benefits through higher earnings. The cost is larger than the benefit, on average, primarily because of taxation; the cost to employers including payroll taxation exceeds the after-tax benefit to consumers.

Although the data from SIPP and CES are not fully compatible, integrating information in tables 1 and 4 by matching the quintile estimates for benefits and costs provides evidence of the net distributional effects of the minimum wage increase. Two kinds of families make up each income group: those with low-wage workers and those without.
These two kinds of families provide the basis for understanding the effect of a minimum wage law on the income distribution since not all families benefit but all families pay higher prices. The average annual cost listed in table 4 is the costs that all families pay as a result of the rise in prices. The benefits listed in table 1 go only to families with a minimum wage worker.

Table 5 integrates the findings of tables 1 and 4 to depict the circumstances of families within each income quintile and of the population at large. Column 3 reports the net benefits to families with a minimum wage worker, and column 4 presents the net benefits to families without a minimum wage worker. Because families without a minimum wage worker receive no benefits, column 4 comes directly from the average annual cost given in column 3 of table 4. The final column of table 5 reports the net benefit for all families in the income quintile (a weighted average of cols. 3 and 4, where cols. 1 and 2 are the weights).

Table 5 reveals a large amount of income redistribution between families within the bottom income quintile. While the 22.6 percent of families in the bottom income quintile with a minimum wage worker gain $521 on average, the 77.5 percent of families without a minimum wage worker lose $74 on average. Thus, the minimum wage increase is equivalent to taking $74 from 3.4 poor families, for a total of $252, and then giving this amount plus an additional $269 from nonpoor families to one poor family with a minimum wage worker. Nearly half the total income redistribution to families with minimum wage workers in the lowest income quintile comes from other poor families. Looking at column 5, it is clear that there is redistribution from wealthy families to poorer families, though there are large differences between families with and without a minimum wage worker within each income quintile.

As one moves up the income distribution, the costs begin to outweigh the benefits, so that the average family in the highest income quintile pays $154 more in costs than it receives in benefits. However, high-income families with a minimum wage worker still averaged more in additional earnings than they paid in higher prices. Averaging across all

13 The benefits and costs calculated throughout this analysis represent only a snapshot of families in a year and fail to recognize that the presence of minimum wage workers in and the income quintiles of families invariably shifts over time, potentially by large amounts. Thus, when viewed in a life cycle context, a far greater portion of families will benefit by having a member who is a minimum wage worker than is portrayed in table 5. At the same time, the share of benefits going to these families over a longer period will be smaller than depicted in the table. Similar circumstances could, of course, arise in consumption patterns. An interesting research task would be to follow households over longer periods, but this would require data beyond those used in this study.

14 No standard errors associated with either estimation error or data quality appear in table 5 or in any other table. The computational approach implemented in this study corresponds to familiar calibration methods applied throughout economics, and the measured impacts presented here should be interpreted accordingly.
families yields a negative net effect since 25.5 percent of benefits go to taxes.

B. Aggregate Costs and Benefits

In considering the benefits and costs, the previous discussion primarily concentrates on the individual effects for different types of families. However, it is helpful to know the total magnitude and distribution of the minimum wage increase among workers, taxpayers, and consumers. Nationwide, the above analysis predicts that the 1996 wage law resulted in higher annual expenditures of $15 billion in 2010 dollars. The cost of this minimum wage increase is nearly half the amount spent in 1996 by the federal government on the EITC program, on the AFDC/TANF program, or on the food stamp program.

Panel A of table 6 summarizes the allocation of these total benefits across different economic groups. From the national minimum wage increase, low-wage workers receive $14 billion annually in higher gross earnings but only $10 billion in higher after-tax income. The remainder goes to income and payroll taxes.

Panel B of table 6 presents the cost side of the ledger, with costs split among taxpayers and consumers, both inside and outside the United States (because of exports). US consumers pay nearly $13 billion an-

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TABLE 5

<table>
<thead>
<tr>
<th>INCOME QUINTILE</th>
<th>SHARE OF FAMILIES</th>
<th>AVERAGE NET BENEFIT/COST FOR FAMILIES ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With a Minimum Wage Worker</td>
<td>Without a Minimum Wage Worker</td>
</tr>
<tr>
<td>Lowest income quintile</td>
<td>22.4</td>
<td>77.5</td>
</tr>
<tr>
<td>2nd income quintile</td>
<td>19.9</td>
<td>80.1</td>
</tr>
<tr>
<td>Middle income quintile</td>
<td>22.5</td>
<td>77.5</td>
</tr>
<tr>
<td>4th income quintile</td>
<td>24.1</td>
<td>75.9</td>
</tr>
<tr>
<td>Highest income quintile</td>
<td>22.5</td>
<td>77.5</td>
</tr>
<tr>
<td>All families</td>
<td>22.3</td>
<td>77.7</td>
</tr>
</tbody>
</table>

Note.—This table relies on SIPP and CES together with the IMPLAN input-output data to perform the calculations. Columns 1 and 2 come directly from table 1. Columns 3–5 depend on both SIPP and CES data, but the income quintiles come from the CES data. All dollar values are inflation adjusted to 2010 dollars using the Consumer Price Index for All Urban Consumers.
nually through higher prices, and consumers outside the United States and US taxpayers roughly equally split covering the $15 billion cost of the minimum wage increase. On net, the aggregate cost for domestic consumers exceeds the increase in after-tax earnings by more than $2 billion. This net loss shows up in table 5 as the negative per-family net benefit listed in the last row and column.

VII. Projecting Impacts of Economic Factors on Distributional Effects

The measurement approach implemented above constitutes a simple accounting structure that ignores the potential counterbalancing impacts of economic forces, which raises concerns about the validity of the estimates since such behavioral factors will surely activate to prevent violation of budget constraints. Economic models in the empirical minimum wage literature do not offer an adequate framework for assessing how such behavioral elements might change the above distributional findings because these models focus on labor markets alone in partial equilibrium settings. To create a flexible framework for evaluating the possible impacts of behavioral factors, the Appendix formulates a gen-

15 For a review of economic models in the minimum wage literature, see Brown et al. (1982).
eral equilibrium model that incorporates the essential economic elements needed to understand the limitations of the empirical findings in this study.

GE models incorporating minimum wages can be found in the existing literature, but their features make them unsuitable for this analysis. A series of studies in the international trade literature, spawned by Johnson (1969) and Brecher (1974, 1980), construct GE models adapting the familiar Edgeworth-Bowley and Heckscher-Ohlin frameworks to investigate the impacts of minimum wages. A critical drawback of these frameworks relates to their dependence on fixed endowments of labor and capital inputs, implying the absence of any input supply responses. Moreover, these models mostly consider only a single type of labor and household, and their key results primarily rest on assumptions about international trade.

The GE model developed in the Appendix consists of a two-commodity economy with three factors of production: low-wage labor, high-wage labor, and capital. The key feature is that only one of the commodities is produced by low-wage labor. A “low-wage” commodity is produced by all three factors of production, and a second “high-wage” good is produced without any low-wage labor. Three types of households make up the economy: low-wage households, high-wage households, and non-working households. High-wage households own capital, but the key results do not critically rely on this assumption. To complete compatibility with the empirical framework used above, the model also includes both foreign and government sectors, with both sectors consuming both commodities along with all types of households. Taxes on labor income fund government. Finally, a fixed-coefficient production function makes up the production technology, which is consistent with the input-output analysis utilized above.

The following discussion considers three formulations of this GE model to interpret and qualify the empirical findings presented above. The first specification fully justifies the calculations performed in the above accounting exercise, making them entirely consistent with a particular variant of a market economy. The second specification allows for flexible elasticities in the supplies of factor inputs in response to the cost increases resulting from a rise in the minimum wage. The third formulation briefly explores how relaxing the key behavioral assumptions needed to produce no employment effects for minimum wage workers could influence estimates of distributional impacts.

16 As an exception, Flug and Galor (1986) introduce skilled and unskilled labor without capital. This study still maintains the assumption of fixed labor supplies in the short run, and it focuses on analyzing the long-run influence of a minimum wage on encouraging skill acquisition through human capital accumulation.
A. Economic Specification Supporting Simple Accounting Calculations

To impose the popular belief of no employment effects induced by increases in the minimum wage, the first formulation of the GE model in the Appendix assumes that all consumer groups (i.e., low-wage households, high-wage households, nonworking households, foreign households, and government) have perfectly inelastic demands for the good produced by low-wage labor. This specification further imposes the commonly held belief that high-wage workers are unresponsive to changes in their after-tax wages.

This GE specification directly predicts the distributional numbers presented above. In response to an increase in the minimum wage (i.e., the wage of low-wage workers), low-wage households increase their consumption of high-wage goods to the same extent that other consumer groups jointly reduce theirs. The degree of increase in consumption by low-wage households depends on the magnitude of their hours worked compared to the amounts they consume of low-wage goods, with increases being larger the lower the share of low-wage goods consumed by minimum wage households.

Tax revenues do indeed rise in this specification paid entirely by minimum wage workers through their higher earnings. Because of the perfect inelasticities assumed in the model, all households without low-wage workers decrease their consumption of high-wage goods to cover the higher taxes and after-tax earnings of low-wage workers. The input-output framework applied above allocates government resources to the direct purchase of goods (e.g., supplies and services used by government) according to historical purchase patterns and does not explicitly recognize government income transfers. One can, however, conceptually entertain having the government instead transfer added resources to various consumer groups and have them undertake the consumption.17 Assuming that policy makers have the sole goal of undoing the adverse distributional effects of a minimum wage increase, an interesting question becomes whether the government has sufficient incremental resources and inclination to compensate the lowest-income groups for their losses.

To explore the viability of such income transfer policy options, table 6 predicts that the government receives $4.5 billion in additional tax revenues and must spend $1.1 billion in higher costs on low-wage goods to maintain its original demands. This leaves $3.4 billion to be spent on high-wage goods or to be transferred to households. Consider having the government transfer these net resources to those households without minimum wage workers that reduced their consumption in response

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17 To be fully consistent with computations performed in the previous analysis, consumer groups would need to undertake purchases in the same composition as assumed for government in the IMPLAN input-output model.
to higher prices, with the lowest-income households receiving priority in the transfers. To assess how far the government could conceptually make up the consumption losses of the lowest income groups, one can calculate the net aggregate losses of each income quintile using the results in table 5 and the numbers of households in each category. Converting the averages and shares reported in this table to group totals, households without a minimum wage worker in the lowest income quintile suffered an aggregate net cost of $1.1 billion due to the price increases induced by raising the minimum wage, the second-lowest quintile without a minimum wage worker incurred $1.3 billion in aggregate losses, and the middle quintile suffered $1.7 billion in aggregate losses. Thus, through transfers, the government could conceptually cover the losses of the lowest-income households without minimum wage workers up to about the median income.

The idea of using the extra tax revenues implied by this specialized specification of the GE model as a governmental transfer to mitigate the adverse distributional consequences of a minimum wage increase has not been considered elsewhere in the literature to my knowledge; nor has it ever been a part of minimum wage legislation. Operationalizing such a policy dictates that government would need to allocate a significant share of the incremental tax resources to transfers to the poorest families without minimum wage workers; moreover, this allocation would need to be cash transfers appropriate for compensating the relevant disadvantaged families, such as Social Security for the elderly, unemployment insurance and welfare for the nonworking poor, and income support (e.g., food stamps and EITC) for the working poor. The determination of these transfers would be exceedingly complex, and government has not shown itself to be especially capable of earmarking sources of tax revenues to spending priorities even when they are simple and directly mandated by law (such as Social Security taxes for only pensions and gas taxes for only highways).

B. Incorporating Supply Responses in Factor Inputs

The Appendix next considers what happens in the GE model when the elasticities of the supply of labor and capital are made flexible, allowing for complete responses to changes in economic circumstances. The model still assumes perfectly inelastic demands for the good produced by low-wage labor for all consumer groups. This GE formulation implies that high-wage workers increase their labor supply in response to the price increases resulting from a rise in the minimum wage. They do so to mit-

\[ \text{Attachment 1} \]
igate fully reducing consumption of the high-wage good to pay for the increase in prices of the minimum wage good. Consumption of the high-wage good decreases for high-wage households, but less than otherwise would be the case if their labor supply were completely unresponsive to changes in after-tax wage rates. Consequently, the amount of tax revenue obtained by the government will rise further, leaving more room for the government to potentially compensate low-income households for some of their losses assuming this were deemed the priority of the transfer of extra revenues.

Contrary to a popular notion that costs for increasing the minimum wage come out of profits, the GE model indicates that profits will rise in response to the increase if the model incorporates a positive sloping supply function for capital inputs. In particular, the GE model shows that the returns to capital must rise to provide for the expansion in production of high-wage goods induced by the increase in the labor supply of high-wage households. This increased capital cost leads to higher prices of all goods, including those produced by minimum wage workers. This lowers the amounts of the high-wage goods that can be consumed by all households—recall that consumption of the low-wage good is constant—which worsens the welfare of consumers. A household’s net position will depend on its extent of capital ownership and its composition of consumption of the capital-intensive goods. Presuming that low-income households are likely to be minor owners of capital, they will be made worse off with a flexible capital supply and more government transfers would be required to compensate them for a minimum wage increase.

C. GE Specifications Implying Employment Effects for Unskilled Workers

Relaxing the perfectly inelastic restriction on the demand for goods produced by minimum wage labor can be expected to induce a decline in the quantities of these goods in response to an increase in the minimum wage, though the GE model formally implies ambiguous effects. The GE model predicts that the consumption of low-wage goods declines for all consumer groups without minimum wage workers;¹⁹ and for low-wage households, consumption can conceptually go either way depending on the relative elasticities of their preferences for hours of work versus the good produced by these hours and their shares in the consumption and production of this good. The overall outcome in the GE model depends on the sizes of these net effects and the share of low-wage households in the economy. Unless low-wage households entirely make up for the declines in the demands by other groups, which is unlikely since only about

¹⁹ This ignores possible increases from households owning large amounts of capital, which could experience increases if the price of capital rises sufficiently in response to a heightened minimum wage.
one in four households have a minimum wage worker, the consumption of low-wage goods will decline overall according to the GE model. Correspondingly, this decline in demand translates into a loss of employment for minimum wage workers since the fixed-coefficient production technology dictates a proportional decrease in the hours worked by low-wage households.

While such employment losses reduce the total benefits received by low-wage households attributable to a minimum wage increase, the distributional impacts depend on how employment reductions occur across these households. In particular, if job losses principally take place among minimum wage workers from high-income families (e.g., teenagers, secondary workers), then the employment effects would enhance rather than diminish the transfer of income from the rich to the poor. Somewhat paradoxically, then, such employment losses would improve the antipoverty properties of minimum wage policy.

Alternatively, employment losses could function against low-income families and worsen the redistribution effects even more than portrayed above. Within the low-wage group, higher-skilled workers are more likely to remain employed (or to be drawn into the labor force) while lower-skilled workers would have a lower probability of employment. The issue becomes whether higher-skilled workers reside in low- or high-income families. If teenagers, students, and supplementary workers from the higher-income families are the higher skilled, then employment losses go disproportionately against low-income families and further would hinder the redistribution effectiveness of the minimum wage depicted above.

Another source of employment losses for minimum wage workers would arise in the GE model if the fixed-coefficient production technology were abandoned and factor inputs could be substituted for one another at some flexible rate. Even with perfectly inelastic demands for goods produced by low-wage labor, a rise in the minimum wage would induce substitution of other factors of production for low-wage labor, resulting in reductions in employment. Similarly to the discussion above, the distribution implications of such employment effects would depend on who becomes unemployed among minimum wage families.

It is well beyond the scope of this study to attempt to weigh the different impacts described above in the GE settings allowing for employment effects to revise the measures of distributional impacts of the minimum wage. One would need to specify the elasticities of consumer demands for all goods by all groups (including foreign), their labor sup-

20 This feature arises, e.g., in the search model developed by Lang and Kahn (1998). In testing this model, they find evidence that minimum wage laws shift employment away from adults in favor of teenagers and students. Adult breadwinners from lower-income families may be the least skilled.
ploy elasticities, capital supply elasticities, allocations of income/resources across types of households, production technologies and intensities of labor and capital in the production of different goods, and even government behavior. The literature does not provide estimates for many of these quantities in a context that would make them compatible with one another to produce a coherent set of predictions.\textsuperscript{21}

VIII. Summary of Findings

Advocates of higher minimum wages often cite helping poor families as the primary motive for raising its value. They argue that families primarily supported by low-wage earnings will receive a substantial portion of the benefits and, moreover, that increasing minimum wages imposes very little public or social cost. Supporters contend that employment impacts experienced by low-wage workers are small, if any at all, and the pass-through of labor costs to prices induces negligible changes.

Using data from SIPP and CES for the year 1996, the exercise described in this paper simulates the distributional impacts of the rise in the federal minimum wage from $4.25 to $5.15 implemented in 1996–97; in 2010 dollars, this increase corresponds to a change from $5.91 to $7.00. Following the assumptions maintained by advocates, the simulation presumes (i) that low-wage workers earned this higher wage with no change in their employment or any reduction in other forms of compensation, (ii) that these higher labor costs were fully passed on to consumers through higher prices, and (iii) that consumers simply paid the extra amount for the goods produced by low-wage labor with no change in their quantities purchased. The cost of this increase is about $15 billion, which was nearly half the amount spent by the federal government on such anti-poverty programs as the federal EITC, AFDC/TANF, or food stamp program. The analysis assesses the extent to which various categories of families benefit from higher earnings and the amounts that these groups pay more as consumers through higher prices. Combining these two sides yields a picture of who gains and who pays for minimum wage increases, including the net effects for families.

On the benefit distribution side, as other research has shown, the picture portrayed by this analysis sharply contradicts the view held by proponents of the minimum wage. Low-wage families are typically not low-income families. The increased earnings received by the poorest fam-

\textsuperscript{21} The challenges would be even more formidable if one were to attempt to estimate directly who actually benefited from and who actually paid for the 1996 increase in the federal minimum wage in a GE setting. Not only would the data requirements be formidable, one would need compatible estimates for all consumer groups linked to the types of employers that they work for. Moreover, complications would arise in recognizing that neither labor nor goods can be segregated simply into the low-wage and high-wage categories exploited in the GE framework developed in the Appendix.
ilies are only marginally higher than those of the wealthiest. One in four families in the top fifth of the income distribution has a low-wage worker, which is the same share as in the bottom fifth. Virtually as much money goes to the highest-income families as to the lowest. While advocates compare the wage levels to the poverty threshold for a family to make the case for raising the minimum wage, less than $1 in $5 of the additional earnings goes to families with children that rely on low-wage earnings as their primary source of income. Moreover, as a pretax increase, 22 percent of the incremental earnings are taxed away as Social Security contributions and state and federal income taxes. The message of these findings is clear: raising wages wastefully targets the poor contrary to conventional wisdom.

Turning to who pays the costs of an increase in the federal minimum wage through higher prices, the analysis reveals that the richest fifth of families do pay a much larger share (three times more) than those in the poorest fifth. This outcome reflects the fact that the wealthier families simply consume much more. However, when viewed as a percentage of expenditures, the picture looks far less appealing. Expressed as a percentage of families’ total nondurable consumption, the extra costs from higher prices are slightly above 0.5 percent for families at large. The picture worsens further when one considers costs as a percentage of the types of consumption normally included in the calculation of state sales taxes, which excludes a number of necessities such as food and health care. More important, the minimum wage costs as a share of “taxable” annual expenditures monotonically fall with families’ income. In other words, the costs imposed by the minimum wage are paid in a way that is more regressive than a sales tax.

On net, the minimum wage does redistribute income slightly in favor of lower-income families, with higher-income families paying more in increased prices than they benefit from the rise in their earnings. However, adverse impacts occur within income groups. Whereas fewer than one in four low-income families benefit from a minimum wage increase of the sort adopted in 1996, all low-income families pay for this increase through higher prices, rendering three in four low-income families as net losers. Meanwhile, many higher-income families are net winners.

Political support for the minimum wage largely depends on the apparent clarity of who benefits and the inability to trace who pays for the wage increase, irrespective of whether costs are paid through higher prices, lower profits, or cutbacks in jobs or employee benefits. As shown in this study, the benefits created by the minimum wage go to families essentially evenly distributed across the income distribution; and, when minimum wage increases are paid through higher prices, the induced rise in consumption costs mimics the imposition of a value-added or sales tax with a higher tax rate enacted on the goods and services pur-
chased disproportionately by low-income families. Effectively, then, a minimum wage increase emulates imposition of a “national consumption tax” that is more regressive than a typical state sales tax, with its proceeds allocated to families unrelated to their income. Far more poor families suffer reductions in resources than those who gain, and as many rich families gain as poor families. These income transfer properties of the minimum wage reveal it to be an ineffectual antipoverty policy.

Appendix

General Equilibrium Model Incorporating Minimum Wages

This appendix formulates a general equilibrium (GE) model that motivates the calculations presented in this study and that allows for assessing the impacts of relaxing the stringent economic behavioral assumptions need to fully justify these calculations. The following model includes two goods produced by three factor inputs: low-wage labor, high-wage labor, and capital. Five groups consume these goods: low-wage households, high-wage households, nonworking households, a foreign sector, and a government sector. A key feature of this model is that only one of the goods uses low-wage labor as an input and production has a fixed-coefficient technology, which enables development of a specification that implies no employment effects in response to changes in the minimum wage.

Section A describes the production technology of the GE model, and Section B characterizes the demand structure of its economy. Section C presents the implications of raising the minimum wage assuming perfectly inelastic demands for the low-wage good; this specification implies no employment effects on minimum wage workers. Section D presents details of a specification of the GE model that is consistent with the computations performed in this study. Finally, Section E briefly explores how alternative behavioral elements in the GE framework are likely to affect impacts of a minimum wage on equilibrium values of goods and inputs and on distributional consequences.

A. Production Technology and Costs

This GE model consists of a two-sector economy: a “low-wage” and a “high-wage” good. The low-wage good \((x)\) is produced by all three factors of production: low-wage labor \((l)\), high-wage labor \((h)\), and capital \((k)\). The high-wage good \((y)\) is produced with high-wage labor \((h)\) and capital \((k)\) but without any low-wage labor \((l)\). Consistent with the input-output framework used in the paper’s empirical calculations, the following fixed-coefficient production functions make up the production technology:

\[
  x = \min (\alpha_l l, \alpha_h h, \alpha_k k) \quad \text{and} \quad y = \min (\beta_h h, \beta_k k).
\]  \(\text{(A1)}\)

The production function coefficients \(\alpha_l\), \(\alpha_h\), and \(\alpha_k\) determine the intensities of labor and capital inputs. The quantities \(h\) and \(k\), and \(k_l\) measure the amounts of high-wage labor and capital serving as inputs in the production
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of the goods \(x\) and \(y\); no subscript appears for the low-wage labor input \(\ell\) since this factor is used only in the production of good \(x\).

A fixed-coefficient production technology is well known to imply the following relationships linking factor inputs and outputs:

\[
x = \alpha_c \ell = \alpha_h h_x = \alpha_k k_x,
\]

\[
\ell = \frac{x}{\alpha_c}, \quad h_x = \frac{x}{\alpha_h}, \quad k_x = \frac{x}{\alpha_k},
\]

and

\[
y = \beta_c h_y = \beta_h h_y,
\]

\[
h_y = \frac{y}{\beta_c}, \quad k_y = \frac{y}{\beta_h}.
\]

Defining \(k = k_x + k_y\) and \(h = h_x + h_y\), the above relationships imply

\[
k = k_x + k_y = \frac{\alpha_x}{\alpha_h} h_x + \frac{\beta_x}{\beta_h} h_y = \frac{\beta_x}{\beta_h} h + \left(\frac{\alpha_x}{\alpha_h} - \frac{\beta_x}{\beta_h}\right) h_x,
\]

which is exploited below in the derivation of comparative-static results.

The corresponding cost and price structure implied by this production technology takes the form

\[
C_x = \omega \ell + h_x + nk_x = \left(\frac{\omega}{\alpha_h} + \frac{1}{\alpha_c} + \frac{r}{\alpha_h}\right) x = P_x x,
\]

\[
C_y = h_y + nk_y = \left(1 + \frac{r}{\beta_h}\right) y = P_y y,
\]

where \(\omega\) denotes the wage of \(\ell\) (relative to the wage of high-skilled, high-wage labor), \(r\) designates the input price of capital (relative to the wage of high-skilled labor), \(P_x\) equals the price of good \(x\), and \(P_y\) equals the price of good \(y\).

B. Household Sectors and Consumer Groups: Demands for Goods and Labor Supply

Three types of households make up the economy: “high-wage” households, “low-wage” households, and “nonworking” households. In addition, product demands are determined by a government and foreign sector.

1. High-Wage Households

High-wage households select their consumer demands for goods \(y_h\) and \(x_h\) and their labor supply \(h\) by solving the following utility optimization problem:

\[
\max U_h(y_h, h, x_h) \quad \text{subject to} \quad h - \tau_h + (rk - q) = P_x x_h + P_y y_h;
\]

the quantity \(\tau_h\) in the budget constraint represents the income tax levied on hours of work \(h\); \(\tau_h = \tau_h(h)\) is a monotonically increasing convex function of \(h\). This GE formulation presumes that only high-wage households own capital, which accounts for the term \(rk - q\) in their budget constraint. The quantity \(rk\) measures the income received by these households, and \(q\) constitutes the cost of
supplying capital; \( q = q(k) \) is a monotonically increasing convex function of \( k \). One can think of the function \( q \) as incorporating payments of taxes on capital income, but this generalization is ignored in the current construction of the GE model to simplify the exposition.

To characterize preferences for high-wage households, designate their marginal rates of substitution (MRS) between the high-wage good and hours of work and between the low-wage good and hours of work as

\[
M_h(y_h, x_h, h) = M_e = -\frac{\partial U_h}{\partial y_h} / \frac{\partial U_h}{\partial x_h} > 0,
\]

\[
S_h = -\frac{\partial U_x}{\partial x_h} / \frac{\partial U_x}{\partial h} > 0.
\] (A7)

Quasi concavity of preferences in consumption \( y_h \) and in leisure (i.e., \( -h \)) implies

\[
\frac{\partial M_h}{\partial y_h} < 0 \quad \text{and} \quad \frac{\partial M_h}{\partial h} < 0.
\] (A8)

Analogous preference assumptions would imply the same inequality properties for \( S_h \).

Equilibrium values of goods \( x_h \) and \( y_h \) and labor supply \( h \) must satisfy the first-order conditions

\[
M_h(y_h, h, x_h) = M_e = \left( \frac{1}{P_y} \{ h - \tau_h + (rk - q) - P_x x_h \}, h, x_h \right)
\]

\[
= \frac{P_y}{1 - \tau_h},
\]

\[
S_h = \frac{P_x}{1 - \tau_h},
\] (A9)

where \( \tau_h > 0 \) denotes the marginal tax rate on hours of work \( h \). Equilibrium values of capital inputs \( k \) satisfy

\[
r = q' = \frac{\partial q}{\partial k} > 0 \quad \text{and} \quad q'' = \frac{\partial^2 q}{\partial k^2} > 0,
\] (A10)

where the inequalities follow from the properties of the function \( q \).

2. Low-Wage Households

Low-wage households select their consumer demands for goods \( y_\ell \) and \( x_\ell \) and their labor supply \( \ell \) by solving the following utility optimization problem:

\[
\max U_\ell(y_\ell, \ell, x_\ell) \quad \text{subject to} \quad \omega \ell - \tau_\ell = P_x x_\ell + P_y y_\ell;
\] (A11)

the quantity \( \tau_\ell \) in the budget constraint represents the income tax levied on hours of work \( \ell \); \( \tau_\ell = \tau_\ell(\omega \ell) \) is a monotonically increasing function of earning \( \omega \ell \).

One can define expressions for the MRS relationships \( M_\ell \) and \( S_\ell \) analogous to (A7) with properties (A8).
Equilibrium values of goods \( x \) and \( y \) and labor supply \( \ell \) must satisfy conditions

\[
M_i \left( \frac{1}{P_y} (\omega \ell - \tau_i - P_i x_i), \ell, x_i \right) = \frac{P_i}{(1 - \tau_i)\omega},
\]

\[
S_i = \frac{P_i}{(1 - \tau_i)\omega},
\]

where \( \tau_i' > 0 \) denotes the marginal tax rate on hours of work \( \ell \).

3. Nonworking Households

Nonworking households select their consumer demands for goods \( x_n \) and \( y_n \) by solving the following utility optimization problem:

\[
\max U_n(y_n, x_n) \quad \text{subject to} \quad \tau_n = P_x x_n + P_y y_n;
\]

(\( A_{13} \))

\( \tau_n \) represents transfers from the government. One can also readily introduce capital returns as another source of income for these households without any substantive change in the key results below, but again this is not done to simplify the exposition.

One can define expressions for nonworking households’ MRS function \( R_n \) between goods \( y \) and \( x \) with properties analogous to \((A7)\).

Equilibrium values of goods \( y_n \) and \( x_n \) must satisfy conditions

\[
R_n = R_n \left( \frac{1}{P_y} (\tau_n - P_x x_n), x_n \right) = \frac{P_x}{P_y}.
\]

(\( A_{14} \))

4. Government and Foreign Sectors

The model includes both foreign and government sectors, with taxes on labor income funding government. Goods demand for government must satisfy

\[
\tau_i + \tau_h = \tau_n + P_x x_g + P_y y_g.
\]

(A15)

A similar representation can be introduced for the foreign sector.

C. GE Specification with Perfectly Inelastic Demands for the Minimum Wage Good

The initial formulation of the GE model considered here assumes perfectly inelastic demands for good \( x \) for all categories of consumers, which implies in equilibrium that all of the following quantities are fixed: \( x_{h}, x_{e}, x_{o}, x_{h}, \ell, h_{o}, \) and \( k_{x} \). Under this assumption, the discussion below describes the impacts of raising the minimum wage on the behavior of the five consumer groups.

1. Impacts of Minimum Wage Increase on High-Wage Households

A standard comparative-statics analysis provides the information necessary for evaluating the effects of raising \( \omega \) on the values of high-wage households’ de-
mand for $y_h$ and their supply of $h$ and $k$. As the first step, total differentiation of the right-hand-side MRS equilibrium condition in (A9) with respect to $\omega$ with $x_h$ held fixed yields

$$\frac{\partial M_h}{\partial y_h} \frac{dy_h}{d\omega} + \frac{\partial M_h}{\partial h} \frac{dh}{d\omega} = \tau'' \frac{P_y}{(1 - \tau'_h)^2} \frac{dh}{d\omega} + \frac{1}{1 - \tau'_h} \frac{q''}{\beta_k} \frac{dk}{d\omega}. \tag{A16}$$

As the second step, total differentiation of the budget constraint (A6) with respect to $\omega$ with $x_h$ held fixed yields\(^{22}\)

$$\left(1 - \tau'_h\right) \frac{dh}{d\omega} + q'' k \frac{dk}{d\omega} = \frac{1}{\alpha_t} x_h + \frac{q''}{\alpha_t} x_h \frac{dh}{d\omega} + P_t \frac{dy_h}{d\omega} + \frac{q''}{\beta_k} y_h \frac{dk}{d\omega}. \tag{A17}$$

Total differentiation of (A4) holding $x$ (and, therefore, $h$) constant yields $dk/d\omega = (\beta_h/\beta_k)(dh/d\omega)$, which substituted into (A17) produces

$$\frac{dy_h}{d\omega} = \frac{1}{P_t} \frac{P_t}{\alpha_t} + \left(1 - \tau'_h\right) \frac{1}{\beta_h} \frac{\beta_k}{\beta_h} \left(k - \frac{x_h}{\alpha_t} - \frac{y_h}{\beta_k}\right) \frac{dh}{d\omega}. \tag{A18}$$

The quantity $k - y_h/\beta_k - x_h/\alpha_t > 0$ since all capital is not fully exhausted by the consumption of high-wage households, and the entire quantity multiplying $dh/d\omega$ is therefore positive.

As the third and final step, substitution of relationship (A18) into (A16) yields

$$\left\{\frac{\partial M_h}{\partial y_h} \frac{1}{P_t} \left(1 - \tau'_h\right) + q'' \frac{\beta_h}{\beta_k} \left(k - \frac{x_h}{\alpha_t} - \frac{y_h}{\beta_k}\right) \right\} \frac{dh}{d\omega} + \frac{\partial M_h}{\partial h} \frac{1}{P_t} \left(1 - \tau'_h\right)^2 - \frac{q''}{(1 - \tau'_h) \beta_k^2} \frac{dk}{d\omega} = \frac{M_h}{\alpha_t} \frac{dh}{d\omega}. \tag{A19}$$

Since the expression in the right-hand brace of relationship (A19) multiplying $dh/d\omega$ is negative and the right-hand side of this relationship is also negative, this relationship implies

$$\frac{dh}{d\omega} \geq 0 \quad \text{and} \quad \frac{dk}{d\omega} \geq 0, \tag{A20}$$

where the second inequality follows from differentiation of (A4) and using the first inequality. Consequently, with this specification of the GE model, a rise in the minimum wage leads to an increase in the hours worked by high-wage households.

2. Impacts of a Minimum Wage Increase on Low-Wage Households

A similar comparative-statics exercise provides the information needed to assess the impacts of raising $\omega$ on the values of low-wage households’ demand for $y_c$. (Recall that their labor supply $\ell$ remains constant.) This demand response is determined by total differentiation of their budget constraint ($P_y y_c = \omega \ell - \tau_c - P_x x_c$) with $x_c$ and $\ell$ held fixed, which yields

\(^{22}\) This result uses $dP_x/d\omega = 1/\alpha_t + q''/\alpha_t \cdot dk/d\omega$ and $dP_y/d\omega = q''/\beta_k \cdot dk/d\omega$, which follows $P_x = \omega/\alpha_t + 1/\alpha_t + r/\alpha_t$ and $P_y = 1/\beta_k + r/\beta_k$ from (A5) and (A10).
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\[
dy_i = \frac{1}{P_i} \left( \frac{(1 - \tau'_i)\ell - x_i}{\alpha_i} \right) - \frac{q''}{P_i} \frac{\beta_i}{\beta_i} \left( \frac{x_i}{\alpha_i} + \frac{y_i}{\beta_i} \right) \frac{dh}{d\omega}. \tag{A21}
\]

(This derivation relies on the differentiation relationships exploited in obtaining [A19].)

3. Impacts of a Minimum Wage Increase on Nonworking Households and Other Sectors

The implied effect of the consumption of nonworking households is essentially a special case of the high-wage household without a labor supply response option and no capital ownership. Adapting (A18) without an own labor supply response creates the following relationship showing the effect of raising the minimum wage for nonworking households on their demand for the low-wage good:

\[
dy_n = \frac{1}{P_y} \left( \frac{dr_n}{d\omega} - \frac{x_n}{\alpha_i} \right) - \frac{q''}{P_y} \frac{\beta_x}{\beta_i} \left( \frac{x_n}{\alpha_i} + \frac{y_n}{\beta_i} \right) \frac{dh}{d\omega}. \tag{A22}
\]

A similar expression can be derived for the government and foreign sectors, but to do so provides no insights beyond what already appears above.

D. GE Specification Consistent with Empirical Calculations in the Study

In addition to having no employment effects occur for low-wage workers in response to changes in the minimum wage as accomplished above by assuming perfectly inelastic demands for good \( x \), the calculations performed in this study also maintain the behavioral assumption that the labor supply of high-wage workers is also perfectly inelastic. This no–employment impact characterization of the economy mimics the critical notions advocated by many supporters of minimum wage policies.

For high-wage households, if one introduces the commonly held belief that the labor supply of the high-wage households is entirely unresponsive to their wages, then (A18) reduces to

\[
dy_h = -\frac{1}{P_y} \frac{x_h}{\alpha_i} < 0. \tag{A23}
\]

Comparison with (A18) reveals that the decline in the demand for high-wage goods by high-wage households is mitigated when these households have elastic labor supplies and respond positively to compensate for the loss of resources arising from higher prices for the low-wage good induced by increasing the minimum wage.

For low-wage households, (A21) simplifies to

\[
dy_l = \frac{1}{P_x} \left( \ell - \frac{x_l}{\alpha_i} - \tau'_i \ell \right). \tag{A24}
\]

The quantity \( \ell - x_l/\alpha_i > 0 \) since all of the low-wage good is not fully consumed by low-wage households. Consequently, the consumption of the high-wage good by
low-wage households increases unless the progressivity of taxation overcomes this effect.

Finally, for nonworking households, (A22) reduces to

$$\frac{dy_n}{d\omega} = \frac{1}{P} \left( \frac{d\tau_n}{d\omega} - \frac{x_n}{\alpha_i} \right).$$

(A25)

Accordingly, consumption of the high-wage good by these households will decline because the loss of resources attributable to higher prices for the low-wage good induced a higher minimum wage, unless sufficient governmental transfers make up for the difference. Note that all of these transfers come from minimum wage households through their higher taxation on earning.

Relationships (A18), (A19), (A21), and (A22) determine the effects of increasing the minimum wage in a GE framework with the consumer demands for the low-wage good assumed to be perfectly inelastic. With the labor supply response of high-wage workers also deemed to be perfectly inelastic, these relationships become (A23), (A24), and (A25). When combined with the analogous relationships for the government and foreign sections, this specification of a GE model is consistent with the accounting computations presented in this study.

E. Evaluating Minimum Wage Impacts under More Flexible Behavioral Assumptions

The above relationships provide insights into how business owners share in the costs of increasing the minimum wage in this GE setting. If the supply of capital inputs is perfectly elastic—which could arise when international markets set rates of return and the foreign sector supplies incremental capital at a constant rate—then \( q'' = 0 \). In this case, all of the simplifications for the demands of low-wage and nonworking households in Section D apply without assuming that high-wage households have unresponsive labor supply. The income earned by capital is unaffected by the minimum wage.

Alternatively, if one relaxes this elasticity assumption and allows the supply of capital to involve increasing costs (as captured by \( q = q(k) \)), then raising the minimum wage will increase the returns to capital (and profits). When high-wage households have responsive labor supply, a rise in the minimum wage induces an increase in the hours worked by these households (see (A20)), and capital inputs must rise to accommodate increased production of the high-wage good. Relationship (A19) shows that \( dh/d\omega \) (and \( dk/d\omega \)) declines as the marginal costs of capital \( (q'' > 0) \) increase. The impact on the demand for \( y_h \) is formally ambiguous according to relationship (A18) because of the contribution of capital returns to the income of high-wage households. However, this is not the case for the demands \( y_l \) and \( y_n \), which unambiguously decline according to relationships (A21) and (A22) as the marginal costs of capital \( q'' \) increases.

Loss of employment will occur for low-wage labor when the production technology allows for flexible factor substitution among inputs, and this will be true even with perfectly inelastic demands for goods produced by low-wage workers. Without the fixed-coefficient production technology, a rise in the minimum wage would induce substitution of other factors of production against low-wage labor in the GE specification presented above.
Relaxing the perfect inelasticity of the demands for low-wage goods invokes operation of the MRS relationships $S_h$, $S_c$, and $R_n$ characterized by relationships (A7) along with equilibrium conditions (A9) for all consumer groups. Conventional demand income and substitution effects apply. High-wage and nonworking households will substitute against the low-wage good in response to its higher price, contributing to a decline in its aggregate demand. This effect also operates for low-wage workers, but the increase in their wages more than compensates for the rise in higher prices given the production technologies maintained in this GE framework. The impact on their labor supply depends on the familiar forces determining whether workers exhibit backward-bending labor supply. Given these counterbalancing forces, the overall impact in this GE setting will depend on the size of these net effects and the share of low-wage households in the economy. Because the fixed-coefficient production technology requires the hours of work of low-wage workers and the goods produced by this labor to remain in fixed proportions, an overall decline in the demand for low-wage goods would necessarily translate into a loss of employment for minimum wage workers.

References


EFFECTIVENESS OF THE MINIMUM WAGE

PROMISES MADE, PROMISES BROKEN:
THE FAILURE OF WASHINGTON STATE’S MINIMUM WAGE LAW

A report by the Freedom Foundation | Maxford Nelsen, Labor Policy Analyst
CONTENTS

1  Introduction

2-5  Poverty

6-11  Employment

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6-11  Conclusion
In 1998, Washington voters approved Initiative 688, dramatically boosting the state minimum wage from $5.15 to $5.70 on Jan. 1, 1999, and to $6.50 on Jan. 1, 2000, and, for the first time in the U.S., indexing the minimum wage to inflation.

Supporters of the initiative argued at the time its passage would “end poverty-wage work from the fields of eastern Washington to the garment-assembly plants hidden behind Seattle’s skyline to the explosion of low-paying service-sector jobs that surround us.”

In addition to combating poverty, automatically increasing the minimum wage each year to keep up with inflation was supposed to “depoliticize the issue” or, as the Washington State Labor Council put it, “take the politics out of this issue, and put the fairness back.”

Sixteen years after I-688’s implementation, however, the minimum wage is as political as ever. Despite having the nation’s highest state minimum wage, labor activists are pressing for an even larger increase in the minimum wage to at least $15 an hour using much the same arguments that were used to pass I-688 in 1998: No working person should live in poverty, a higher minimum wage will stimulate the economy, and job growth will not be harmed.

An analysis of I-688’s effect on Washington’s poverty rate, job growth and unemployment, however, indicates the minimum wage initiative has failed to measurably deliver on its promises.

There is no doubt that I-688 dramatically increased the state minimum wage. Before passage of I-688, a full-time minimum wage worker could live above the poverty line only if single. As of 2014, a full-time minimum wage worker could support two children just above the poverty threshold.

But despite the significant increase in the state minimum wage relative to the poverty threshold, Washington’s poverty rate has remained essentially unchanged. At the same time, while the state’s overall job market has performed well, job growth in low-wage industries like accommodation and food service has slowed substantially.

The decrease in employment in these sectors does not necessarily indicate that workers are moving on to more profitable fields. While the state’s teen unemployment rate generally mirrored the national rate before the minimum wage initiative, Washington’s teen unemployment rate has significantly surpassed the national rate every year since I-688’s passage.

Furthermore, despite claims that a higher minimum wage would boost the economy through additional consumer spending, all the economic evidence to date continues to indicate minimum wage hikes are a net drain on the economy.

Given I-688’s poor track record, state and local voters and policymakers should seriously consider the potential consequences before enacting further, unprecedented increases in the minimum wage.
The primary impetus to increase the minimum wage is to enable people who work full-time to earn their way out of poverty.


While the intent of I-688 may have been to decrease poverty, it appears to have accomplished little. The chart below tracks the changes in how a Washington minimum wage workers’ full-time annual salary stacks up against the poverty threshold.

KEY POINTS

1. When I-688 was passed in 1998, full-time minimum wage workers earned 126 percent of the poverty threshold. A worker with any dependents fell below the poverty line. Single, full-time minimum wage workers supporting two children under 18 earned 82 percent of the poverty threshold.

2. Sixteen years later, in 2014, full-time minimum wage workers earned 157 percent of the poverty threshold and workers with two children earned 102 percent of the poverty line.
Despite I-688’s dramatic increase in the minimum wage compared to the poverty threshold, and despite the fact that Washington had the nation’s highest minimum wage, the state poverty rate (the percentage of Washington residents living below the poverty threshold) changed little relative to the national poverty rate.

![WA AND U.S. POVERTY RATES](image)

The fact that Washington’s poverty rate lags behind the national average is sometimes referenced as evidence that the state’s high minimum wage has been good for the poor. However, the state poverty rate has historically trailed the national rate, even prior to the passage of I-688 in 1998.

The only time that Washington’s poverty rate exceeded the national rate was in 2003, following four years of increases in the poverty rate that began the year I-688 took effect.

The average state poverty rate for the 15 years preceding passage of I-688 (1984-1998) was 10.7 percent. The average national poverty rate for the same period was 13.8 percent. The average state poverty rate for the 15 years following passage of I-688 (1999-2013) was 10.9 percent, a slight increase, while the national poverty rate for the same period was 13.1 percent, a slight decrease.

Despite the fact that Washington’s minimum wage rose substantially in the years since 1998, there was no noticeable change in the state poverty rate. This is in line with recent research showing “the failure of minimum wage hikes as an antipoverty policy.”

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4. Despite the fact that Washington’s minimum wage rose substantially in the years since 1998, there was no noticeable change in the state poverty rate. This is in line with recent research showing “the failure of minimum wage hikes as an antipoverty policy.”
<table>
<thead>
<tr>
<th>Year</th>
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<th>Poverty Line - 1 Worker w/2 Children</th>
<th>WA Minimum Wage</th>
<th>Annual FT Minimum Wage Salary in WA</th>
<th>% of Poverty Line - 1 Worker</th>
<th>% of Poverty Line - 1 Worker w/2 Children</th>
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<td>129.0%</td>
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</table>
DATA NOTES

The annual, full-time minimum wage salary calculations are computed by multiplying the hourly minimum wage by 40 hours per week for 52 weeks per year.

DATA SOURCES

U.S. poverty rate:

Washington poverty rate:
U.S. Census Bureau, Current Population Survey Annual Social and Economic Supplements, Historical Poverty Tables, Table 21, “Number of Poor and Poverty Rate, By State.”
http://www.census.gov/hhes/www/poverty/data/historical/people.html

Poverty threshold:
U.S Census Bureau, Poverty thresholds by Size of Family and Number of Children.
http://www.census.gov/hhes/www/poverty/data/threshld/

Washington minimum wage levels:
http://www.lni.wa.gov/WorkplaceRights/Wages/Minimum/History/default.asp

U.S. minimum wage levels:
http://www.dol.gov/whd/minwage/chart.htm
As they do today, minimum wage advocates in 1998 contended that the government could raise the wage floor without negatively affecting job growth or employment. Washington’s generally robust population and job growth is often referenced as proof that having the nation’s highest minimum wage did not harm the state’s economy. The chart below indicates that Washington’s population growth has consistently exceeded the national growth rate.

**KEY POINTS**

1. Washington’s population growth rate has consistently exceeded the national rate since 1990, except in 2003 when both Washington’s population and the total U.S. population grew by .86 percent.
Similarly, Washington’s overall job growth has generally outpaced national growth since 1991, as indicated by the chart below.

**KEY POINTS**

1. Growth in Washington’s total nonfarm employment exceeded the national rate in 15 of the 24 years since 1991. Washington’s strong overall labor market has led some observers to argue that the state’s high minimum wage has not negatively affected job growth.\(^8\)
Despite the increases in Washington’s population and overall employment, however, industries with a predominance of entry-level, low-wage jobs have not fared as well. The chart below compares Washington’s growth in accommodation and food service jobs (mainly hotel and restaurant jobs, as defined by NAICS sector 72) to the national rate.

**TOTAL ACCOMMODATION AND FOOD SERVICE EMPLOYMENT**

![Graph showing percentage change from prior year for total Washington and total U.S. from 1991 to 2013.]

**KEY POINTS**


2. After the passage of I-688, job growth in Washington’s accommodation and food service sector slowed and, from 2001-2002, actually declined. The industry did experience strong growth from 2004-2006, when the state’s population and overall jobs growth surged, but the state shed twice as many accommodation and food service jobs as the nation when the recession took hold from 2008-2010.

3. Despite the fact that Washington’s population increased faster than the national rate every year since 1991 and total nonfarm employment increased faster in Washington than the nation 15 out of the 24 years since 1991, growth in Washington’s accommodation and food service industry exceeded the national rate in only six of the 17 years since passage of I-688 in 1998.
The increases in Washington’s population and total employment, coupled with the decline in accommodation and food services jobs, meant that Washington’s share of the nation’s accommodation and food service jobs has declined noticeably relative to its population and total jobs.

**KEY POINTS**


2. Since the passage of I-688, Washington's share of total accommodation and food service jobs has substantially declined, even while the state’s share of the nation's population and total jobs have steadily increased.

3. When voters passed I-688 in 1998, Washington had 2.09 percent of the nation’s population, 2.08 percent of the nation’s jobs and 2.10 percent of the nation's accommodation and food service jobs. As of 2014, Washington's share of the population had increased to 2.21 percent, its share of the nation's jobs had increased to 2.21 percent, while its share of total U.S. accommodation and food services jobs had declined to 1.98 percent.

4. While Washington's share of the nation's population increased by 5.7 percent since passage of I-688 in 1998, and its share of total U.S. jobs increased by 6.3 percent, the state’s share of U.S. accommodation and food services jobs fell by 5.7 percent.
<table>
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<tr>
<th>Year</th>
<th>WA % of US Pop.</th>
<th>WA NF Jobs</th>
<th>% Change From Prior Year</th>
<th>US NF Jobs</th>
<th>WA % of US NF Jobs</th>
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<th>WA AFS Jobs</th>
<th>% Change From Prior Year</th>
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<th>% Change From Prior Year</th>
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DATA NOTES

In the chart on the previous page, NF = “Nonfarm” and AFS = “Accommodation and food services.” Total jobs numbers are listed in thousands. Nonfarm employment numbers and accommodation and food services numbers come from the Bureau of Labor Statistics’ Current Employment Statistics (CES). Above charts reflect the 12-month average employment for each year. State-level CES data is only available back to 1990.

DATA SOURCES

Bureau of Labor Statistics, Current Employment Statistics (CES). Series ID numbers for the pertinent CES datasets are provided below:

- U.S. nonfarm employment: CES0000000001
- Washington nonfarm employment: SMS53000000000000001
- U.S. accommodation and food services employment: CES7072000001
- Washington accommodation and food services employment: SMS53000007072000001

U.S. Census Bureau
The opponents of Initiative 688 are like Chicken Little crying the sky is falling. Whenever a minimum wage increase is contemplated, they always warn of impending job losses. But it never happens, and they never go back and look at the data that shows that there are not statistically significant impacts on jobs from minimum wage increases.


While the sky has not fallen in on Washington’s robust economy since passage of I-688, job prospects for the least-skilled and least-educated workers have certainly declined. The chart below compares Washington’s teen unemployment rate to the national rate before and after passage of I-688.
KEY POINTS:
WA AND U.S. TEEN UNEMPLOYMENT

1. The decline in the number of entry-level jobs in industries like accommodation and food services that followed passage of I-688 corresponded with elevated unemployment for low-skilled workers like teens.

2. For the 15 years preceding the implementation of I-688 (1984-1998), teen unemployment in Washington generally followed national trends, with Washington’s teen unemployment rate higher than the national rate in 10 out of 15 years. The worst year in the period for Washington teens occurred in 1986, when the state’s teen unemployment rate was 4.7 percentage points higher than the national rate.

3. Washington’s teen unemployment rate has surpassed the national rate every year since the passage of I-688. At the peak of the recession in 2010, Washington’s teenage unemployment rate was 8.2 points higher than the unemployment rate for teens nationwide.

DATA NOTES

Unemployment rates included in the charts are 12-month averages.

DATA SOURCES

U.S. teen unemployment rate:

Washington teen unemployment rate:
*Obtained by request from the Bureau of Labor Statistics. Author can provide a copy of the data file upon request.*
“\[The greater the proportion of minimum wage workers in a local economy, the bigger and more positive the economic impact of increasing the minimum wage becomes. Minimum wage workers spend a higher proportion of their income on immediate consumption than higher-income workers do. In fact, increasing the minimum wage may have a disproportionately positive impact in rural low-income areas.\]


Years after I-688’s passage, both national and state advocates of higher minimum wage laws have failed to provide any evidence that minimum wage hikes stimulate the economy or benefit local businesses.

Minimum wage proponents will sometimes use demographic information to estimate the number of employees that would be affected by a proposed minimum wage. Proponents then multiply the number of affected workers by the additional amount they would earn if all received a raise to the new minimum and everything else remained constant.

This unrealistic analysis allows advocates to trumpet alleged increases in economic activity of millions or billions of dollars, but fails to account for the decreased employment and increased prices that typically accompany minimum wage increases. After all, the money to pay the employee raises has to come from somewhere; it is not “new” money.

While certain low-skill employees will certainly be able to spend more money following a minimum wage hike, the evidence indicates that their higher spending power is more than offset by other factors.

Advocates sometimes refer to a 2011 study by researchers at the Chicago Federal Reserve that found, unsurprisingly, that households benefitting from a minimum wage increase spend more than they did previously. The authors specifically warn, however, that their study is “silent about the aggregate effects of a minimum wage hike.”

In prior papers, the same researchers documented some of the negative consequences of a higher minimum wage, including decreased employment and higher prices.

When the researchers took only the negative employment effects of a higher minimum wage into account, they concluded in a 2013 study, “A minimum wage hike provides stimulus for a year or so, but serves as a drag on the economy beyond that.”

Some minimum wage advocates, like Rep. Laurie Jinkins (D-Tacoma), have cited a 2006 paper by Marshall Fisher of the Wharton School at the University of Pennsylvania that concluded strategic changes in payroll can boost monthly retail sales as proof that the minimum wage is an economic stimulus. However, the paper had to do with increasing efficiency on the store’s side and made no mention of the minimum wage or its effects on the wider economy. In response to an email inquiry, Professor Fisher confirmed that “those citing the paper (to support the minimum wage) are misinterpreting it.”

On the other hand, a 2010 study by Joseph Sabia, now at San Diego State University, concluded, “Far from stimulating an economy, an increase in the minimum wage has no discernible impact on overall GDP and could actually hinder growth in certain low-wage sectors.”

The one-sidedness of the debate on the issue has lead minimum-wage expert David Neumark of the University of California-Irvine to conclude, “There is simply no evidence” that boosting the minimum wage stimulates the economy through consumer spending.
While I-688’s minimum wage increase was significant by historic standards, a $15 minimum wage in Washington state would far exceed the magnitude of any prior increase.

**VALUE OF WASHINGTON MINIMUM WAGE**

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**KEY POINTS**

1. While some argue that the minimum wage has not kept up with inflation, this is not generally the case in Washington. Though below its 1968 peak, the purchasing power of Washington’s current minimum wage of $9.47 is well above its historic average value of $7.85 (2014 dollars).

2. A $15 minimum wage would represent a $5.53 (58.4 percent) increase above its current level.

3. An increase of this magnitude has never been attempted in any measurable way. Though the city of SeaTac adopted a $15 minimum wage initiative in November of 2013, ongoing litigation and the narrow drafting of the initiative have prevented all but a handful of businesses from being subject to the requirement. Seattle’s $15 minimum wage ordinance will not be fully phased in until 2025, and the first increase in Seattle’s minimum wage, to $11 an hour, only recently occurred.

**DATA NOTES**

The above chart projects a $15 minimum wage taking effect on Jan. 1, 2016. The chart also assumes the minimum wage will be indexed to inflation and increase an average of 3 percent per year.

**DATA SOURCES**

Washington state minimum wage:

Inflation:
http://www.bls.gov/data/inflation_calculator.htm
While the information presented in this report is purely correlative, it is startling how directly the observed changes in Washington's economy after passage of I-688 align with the projections of minimum wage skeptics. Just as significant is the lack of any indication that enacting the nation's highest minimum wage produced the gains promised by labor activists in any measurable or lasting way.

Despite the heated rhetoric about ending “poverty-wage jobs,” the state poverty rate failed to decline beyond its historic levels. At the same time Washington's economy was performing strongly overall, job growth in low-wage industries slowed following the increased minimum wage and has yet to recover. Low-skilled workers like teens have consistently had a more difficult time finding work and getting a foothold in the job market. Economy-infusing spending increases from low-wage workers have not been measured or proven, while research continues to indicate that minimum wage increases do not lead to net economic growth.

If nothing else, the fact that Washington yet again finds itself embroiled in a debate over an issue that was supposed to be “depoliticized” 16 years ago is a testament to the long-term ineffectiveness of I-688. As labor activists renew their drive to boost government wage floor regulations still further, I-688's track record should give voters and policymakers reason to think twice.
October 24, 2006.

For Immediate Release:  Contact Joe Gilliam, 503.685.6293

TACOMA VOTERS STRONGLY OPPOSE $15 PER HOUR MINIMUM WAGE; SUPPORT ALTERNATIVE PROPOSAL

An effort to impose an immediate $15 per hour minimum wage in Tacoma is strongly opposed by Tacoma voters in a poll just released by the Northwest Grocery Association. The Poll, completed June 11th of 250 Tacoma voters by Moore Information, showed initial opposition to the proposal 69% to 27% with only 4% undecided.

When voters were informed of the other components of the plan such as granting police powers to the city for investigating violations, the possibility of felony penalties, a ten year record keeping requirement for employers, and the creation of a new permanent city commission to oversee future minimum wage hikes, the opposition grew 8 points to 77% with only 21% in favor of the proposal.

The silver lining for entry level workers and Tacoma employers is the voters did support a more modest increase in the minimum wage if it were phased in over three years with credit given to employers that provide employer paid health insurance benefits and paid time off.

The alternative proposal would increase the minimum wage to $12 per hour over three years, would allow all taxable income to be used in calculating the minimum wage, and would give up to $1 per hour credit for both the actual hourly cost of employer paid health insurance and paid time off. This proposal found 68% support amongst voters with 28% opposed and only 4% undecided.

“We found in the poll there is strong support to change the status quo and increase the minimum wage in Tacoma. In addition, we found that the current $15 NOW movement is too extreme for Tacoma’s economy and voters recognize the value of giving employers time to phase in the increase and recognize the value of employer paid benefits such as health insurance that often times mean as much to an employee as their cash wages”, said Joe Gilliam, President of the Northwest Grocery Association.

Tacoma Mayor Marilyn Strickland has established a citizens committee to consider an alternative to the $15 NOW ballot measure that may result in two competing ballot measures. Gilliam said the poll contemplated this possibility and asked voters how they would vote on the two proposals side by side. The poll showed that 52% of the voters would support only the $12 per hour proposal, 10% would vote yes for both, 24% would vote no on both proposals, and 9% would support only the $15 per hour proposal. The end result would be the $12 per hour proposal winning passage 62% to 33% with 5% undecided and the $15 per hour proposal failing 19% to 76% with 5% undecided.

The Northwest Grocery Association serves as the spokesperson for the Pacific Northwest’s grocery industry by promoting the common interests and issues of its membership by providing current communications, leadership and member services. www.nwgrocery.org

###
NWGA Tacoma Minimum Wage Poll Summary  
*City of Tacoma Voters (N=250)*  
*June 10-11, 2015*

**A) Before Hearing Details of Plans:**

Q. Would you vote yes to support or no to oppose a ballot measure that increased the minimum wage in Tacoma to $15 dollars per hour, effective immediately?

- Total YES: 27%
- Total NO: 69%
- Undecided: 4%

Q. Would you vote yes to support or no to oppose a ballot measure that increased the minimum wage in Tacoma to $12 dollars per hour, phased in over three years?

- Total YES: 68%
- Total NO: 26%
- Undecided: 6%

**B) After Hearing Details of Plans:**

$15 NOW Detail Summary: Granting New Police Powers to City; Felony Penalties; 10 Year Record Keeping Requirement; New City Minimum Wage Commission; Does Not Include Commissions and Tips; Applies to Workers Visiting/Delivering in Tacoma.

Q. After everything you just heard, would you vote yes to support or no to oppose a ballot measure that increased the minimum wage in Tacoma to $15 dollars per hour, effective immediately?

- Total YES: 21% (-6 change)
- Total NO: 77% (+8 change)
- Undecided: 2% (-2 change)

$12 Alternative Detail Summary: Three Year Phase-in; Including all taxable income including commissions and tips in wage calculation; Up to $1 per hour credit for actual hourly cost of employer paid health insurance; Up to $1 per hour credit for actual hourly cost of paid time off;

Q. After everything you just heard, would you vote yes to support or no to oppose a ballot measure that increased the minimum wage in Tacoma to $12 dollars per hour, phased in over three years?

- Total YES: 68% (0 change)
- Total NO: 28% (+2 change)
- Undecided: 4% (-2 change)

**C) Side by Side on the Same Ballot**

Q. Another option is to place both proposals on the ballot and have voters decide between the two. If both measures appeared on the same ballot, how would you vote?

- YES for both the $15 and the $12 ballot measures: 10%
- YES for the $15 and NO for the $12 ballot measures: 9%
- YES for the $12 and NO for the $15 ballot measures: 52%
- NO for both the $15 and the $12 Proposal: 24%
- Undecided: 5%

- Total YES for $15: 10% + 9% = 19%
- Total NO for $15: 52% + 24% = 76%
- Undecided: 5%

- Total YES for $12: 10% + 52% = 62%
- Total NO for $12: 9% + 24% = 33%
- Undecided: 5%
Members of the Tacoma Minimum Wage Task Force,

I work on labor policy for the Freedom Foundation, a right-of-center policy think tank based in Olympia. I’ve been closely involved with the minimum wage debates in Washington for the last two years.

Just so there isn’t any doubt, I take the position that, while often well-intentioned, raising the minimum wage does more harm than good.

In my experience, there are many poor arguments out there on this issue. Statistics and research are often misinterpreted.

To help provide you with some resources to consider, this is the first of several short updates discussing various aspects of this debate.

Please do not take anything I say at face value, but weigh it against the other arguments out there. I welcome your feedback.

**Inflation:**

Supporters of raising the minimum wage often argue that it hasn’t kept up with inflation, or the cost of living. They frequently point to the purchasing power of the minimum wage in 1968, which was worth $10.88 in 2015 dollars. Washington State’s current minimum wage is $9.47.

1. But the current state minimum wage is not out-of-line with historic trends. The selection of 1968 as the benchmark year is deliberate. The purchasing value of the minimum wage hit its all-time high in 1968.

   When the minimum wage was first created in 1938, it was worth $4.20 in today’s dollars, less than half of the current state minimum. From 1938 to 2015, the minimum wage prevailing in Washington (sometimes the federal minimum was higher, sometimes the state minimum was) averaged a purchasing power of $7.87 in today’s dollars.

   In other words, Washington’s current minimum wage of $9.47 is noticeably higher than the historic average value of the minimum wage of $7.87.

2. Additionally, the state minimum wage law passed in 1998 provided for automatic yearly increases based on inflation, meaning that the current state minimum wage will continue to keep pace with cost of living increases.

3. The creation of the Earned Income Tax Credit (EITC) in 1975 helped compensate for the decline in the purchasing power of the minimum wage that occurred during the 1980s and ‘90s. The Congressional Research Service describes the EITC as, “a refundable tax credit available to eligible workers with relatively low earnings. Under current law there are two categories of EITC recipients: childless adults and families with children. Because the credit is refundable, an EITC recipient need not owe taxes to receive the benefits.”
Sources:

Members of the Tacoma Minimum Wage Task Force,

Today I’d like to briefly address whether the minimum wage has kept up with the productivity of the labor force.

Some advocates of raising the minimum wage contend that it has failed to keep up with increases in workers’ productivity. Supporters argue that compensation largely tracked with productivity until 1968, when wage growth began to lag behind productivity increases. Consequently, they argue that workers are not being fairly compensated for their labor.

The productivity-minimum wage contrast was first promulgated by the left-leaning Center for Economic and Policy Research (CEPR) in 2012, which compared increases in the productivity of the average worker to the increases in the purchasing power of the minimum wage. CEPR contended that, “If the minimum wage had continued to move with average productivity after 1968, it would have reached $21.72 per hour in 2012.”

Cast in this light, calls to boost the minimum wage to $10, $12 or even $15 an hour appear much more reasonable.

However, there are serious problems with this comparison.

1. There is serious debate about whether average wage growth has actually lagged behind average productivity increases. A detailed analysis of the issue by the right-leaning Heritage Foundation determined that, properly measured, the value of workers’ wages and benefits continue to growth with productivity. The Heritage report notes:

   “Harvard Professor Martin Feldstein, the former President of the National Bureau of Economic Research, concluded that the apparent divergence results from using the wrong data to measure pay and productivity. Using the correct data, he finds that pay and productivity have both grown together. Dean Baker, director of the left-leaning Center for Economic and Policy Research, and staff at the Federal Reserve Bank of St. Louis also come to that conclusion. Georgetown Professor Stephen Rose likewise finds that the apparent gap between pay and productivity collapses under scrutiny. He concludes that economic growth resulting from productivity growth continues to benefit working Americans.”

2. Regardless, however, the productivity and compensation of average workers tells us nothing about the productivity of the average minimum wage worker. In order to begin to be relevant, the data would need to show that the productivity of minimum wage workers was increasing faster than their compensation. I have yet to see any evidence that this is the case, and some to the contrary.

   For example, while the Dept. of Labor’s Bureau of Labor Statistics (BLS) does not track minimum wage workers’ productivity, it recently released information about the productivity of restaurant employees. Because many restaurant employees’ hourly wages
(not counting tips) are fairly low, they are frequently featured prominently in minimum wage debates.

According to the BLS, labor productivity for employees of “food services and drinking places” increased by an average of 0.6 percent per year from 1987 to 2013. Over the same period, pay for these workers increased by an average of 5.1 percent per year.

Put simply, from 1987 to 2013, restaurant worker compensation increased more than eight times as fast as restaurant worker productivity.

For these reasons, I find the argument that the minimum wage has failed to keep up with productivity to be unproven and unconvincing.

Sources:
Members of the Tacoma Minimum Wage Task Force,

An increasingly common argument used by supporters of raising the minimum wage is that boosting entry-level workers’ income will prompt them to spend more, thus stimulating the economy and local businesses. President Obama, Governor Inslee, local millionaire Nick Hanauer and labor activists have all made variations of this argument.

Unfortunately, the argument is logically unsound and empirically unsupported.

1. Some minimum wage supporters simply take the number of workers earning less than a proposed minimum wage, multiply it by the wage increase per worker, and conclude that increasing the wage floor creates millions of dollars in new consumer spending in the economy. Left-leaning Puget Sound Sage has used this method to estimate that a $15 minimum wage in Seattle would generate millions in new economic activity.

However, such simplistic estimates are of little value since they fail to account for the other effects of a minimum-wage increase — reduced business spending, higher prices and decreased employment.

As the Congressional Budget Office noted in a report last year,

“The increased earnings for some workers would be accompanied by reductions in real (inflation-adjusted) income for the people who became jobless because of the minimum-wage increase, for business owners, and for consumers facing higher prices.”

The fundamental flaw in the argument is that it assumes the additional income received by entry-level workers is new money in the economy when, in reality, it has simply been redistributed from businesses that must raise prices or cut back on human labor (layoffs, reduced hiring, fewer hours for employees, more automation) in response.

2. Furthermore, the evidence indicates that, overall, the economy is no better off in the end.
   a. Minimum wage expert Professor David Neumark of the University of California-Irvine has noted that “there is simply no evidence” to support the claim that raising the minimum wage stimulates the economy.
   b. Professor Sylvia Allegretto of the University of California-Berkeley, whose research has often been used by minimum wage supporters, has admitted that her research does not show that the minimum wage stimulates the economy.
   c. In a 2010 paper published by the right-leaning Employment Policies Institute, Dr. Joseph Sabia of the U.S. Military Academy at West Point concluded that, “Far from stimulating an economy, an increase in the minimum wage has no discernible impact on overall GDP [Gross Domestic Product] and could actually hinder growth in certain low-wage sectors.”

3. Minimum wage supporters frequently misinterpret studies to argue in favor of a positive economic stimulus from the minimum wage.
   a. A 2011 study by Daniel Aaronson, Sumit Agarwal and Eric French of the Chicago Federal Reserve found, unsurprisingly, that households benefiting from a
minimum wage increase spent more. However, they specifically warned that their study is “silent about the aggregate effects of a minimum wage hike.”

The same research team has documented some of the negative consequences of a higher minimum wage. In a 2006 paper, Aaronson and French found that a 10 percent increase in the minimum wage decreased employment in the restaurant industry by 1 to 3 percent.

Furthermore, Aaronson and French concluded in a 2007 study that “restaurant prices unambiguously rise” following a minimum wage increase.

Taking only the negative employment effects into account led the researchers to conclude in a 2013 paper, “A minimum wage hike provides stimulus for a year or so, but serves as a drag on the economy beyond that.”

b. Minimum wage supporters in the state legislature have pointed to a 2006 paper by Marshall Fisher, Jayanth Krishna and Serguei Netessin of the University of Pennsylvania which found that, “increasing associate payroll by $1 at a given store is associated with a sales lift of anywhere from $4 to $28.”

However, the paper had nothing to do with the minimum wage, but rather about how retail stores could structure their payroll and staffing to optimize sales.

Responding to my email inquiry about the nature of his paper, Professor Fisher confirmed that “those citing the paper [in support of the minimum wage] are mis-interpreting it.”

The upshot: Both reason and existing economic evidence confirm that raising the minimum wage simply redistributes existing wealth in a manner that appears to have slightly negative effects on the overall economy. No new economic activity is generated and no new wealth is created. No net economic stimulus should be expected from raising the minimum wage.

Sources:

- David Neumark, “Should Missouri Raise its Minimum Wage?” Show-We Institute, September 2012.
Members of the Tacoma Minimum Wage Task Force,

The past three briefings have discussed important issues, but were peripheral to perhaps the biggest question surrounding the minimum wage: does raising the minimum wage harm employment?

There is too much information on this question to cover every study that has been done on the topic. Instead, I will endeavor to provide an overview of the development of the debate in broader terms.

Opponents of raising the minimum wage contend that increasing the cost of human labor will cause employers to purchase less of it, reasoning that the economic laws of supply and demand apply to labor just as they do to any other good or service. Employers can use less human labor by: laying off low-skilled workers; reducing the hours of entry-level employees; cutting employee benefits; replacing less-skilled workers with employees that have more education or experience; replacing human labor with automation; or limiting their future hiring and expansion.

Supporters of raising the minimum wage contend that the evidence indicates that a higher minimum wage does not noticeably reduce employment opportunities. In many cases, they explain their research by contending that raising the minimum wage will produce an economic stimulus as low-wage workers spend more money, and that the resulting increase in jobs will outweigh any jobs lost because of the higher wage. Others argue that a higher minimum wage will increase workers’ productivity and be good for the business in the long run, or that businesses have enough profit to pay for the raises without making any other changes.

Yesterday’s briefing dealt with the unfounded stimulus argument. The argument about higher productivity implies that “greedy” business owners don’t know what’s best for them and need to be forced to adopt more profitable business practices. While this may be true for a few businesses, it seems unlikely to be the case generally. As for profits, a few businesses that employ minimum workers (by no means all) likely make enough profit to mathematically afford an increase in the minimum wage without taking other mitigating steps. But that doesn’t mean that they will respond by simply throwing up their hands and eating the increase, especially if employees are unable to produce enough value to offset the increased cost of their employment.

All of this leaves many minimum wage supporters without a clear theoretical explanation for why their studies indicate the minimum wage doesn’t kill jobs.

Below is a brief overview of the history and research related to the effect of the minimum wage on jobs and employment:

1. Up until 1994, the general economic consensus was that increasing the minimum wage would decrease employment of low-wage employees. In 1981, the economists on the Congressional Minimum Wage Study Commission concluded that “studies typically find that a 10 percent increase in the minimum wage reduces teenage employment by one to three percent.”
2. In 1994, Princeton economists David Card and Alan Krueger published a study which looked at fast food employment following a minimum wage increase in New Jersey. The original Card and Krueger study was based on phone interviews with employers, and concluded that New Jersey’s increased minimum wage resulted in a 17.6 percent increase in employment compared to neighboring Pennsylvania, which did not raise its minimum wage. However, two years later, economists David Neumark (University of California-Irvine) and William Wascher (Federal Reserve) published a paper for the National Bureau of Economic Research debunking the Card and Krueger paper. When the Card-Krueger study was repeated by Neumark and Wascher using actual payroll data for the same fast food restaurants, employment among the New Jersey restaurants actually declined by 4.6 percent relative to Pennsylvania. Card and Krueger repeated their study with different data in 2000 and concluded that the higher minimum wage did not boost employment in New Jersey after all. Nevertheless, the original Card-Krueger paper is still often cited as proof that the minimum wage does not harm employment.

3. In 2007, Neumark and Wascher published a review of modern minimum wage studies. Two-thirds of the studies concluded that a higher minimum wage had negative employment effects, and 85 percent of the studies Neumark and Wascher considered to be the most credible pointed to negative employment effects.

4. Since 2007, about a half dozen economists (including Michael Reich of the University of California-Berkeley, Ken Jacobs of UC Berkeley, Sylvia Allegretto of UC Berkeley, Arin Dube of the University of Massachusetts-Amherst, and William Lester of the University of North Carolina) have published a series of studies using a new methodology and purport to find that moderate minimum wage increases have no discernable effect on employment. This new methodology relied on comparing employment in jurisdictions that had increased the minimum wage to employment in neighboring jurisdictions that did not.

5. In 2012, David Neumark, Ian Salas and William Wascher published a paper evaluating the methodology of the new minimum wage research and concluding that, "…neither the conclusions of these studies nor the methods they use are supported by the data." Neumark, Salas and Wascher contend that comparing neighboring jurisdictions often results in an apples-to-oranges comparison. For instance, it wouldn’t make sense to compare King County (population of 2 million+, 3.3% unemployment) to neighboring Kittitas County (population of 42,000, 5.9% unemployment). The economies are too dissimilar, and the effects of a higher minimum wage in the city is likely to be obscured by its generally strong economy as the region’s urban center. It is more appropriate, they argue, to compare jurisdictions based on similarity rather than simply proximity.

6. In 2014, the Congressional Budget Office reviewed the literature on the minimum wage, split the difference between the studies, and concluded that a federal minimum wage of $10.10 would eliminate about 500,000 and as many as 1 million jobs nationwide.

7. It’s also important to bear in mind that there are many ways in which job opportunities for low-skilled individuals could decrease following a minimum wage hike that would not show up as decreased overall employment.

a. For instance, in a 2013 study, Jonathan Meer of Texas A&M University and Jeremy West of the Massachusetts Institute of Technology argued that, “the minimum wage reduces net job growth, primarily through its effect on job creation by expanding establishments,” or, in other words, jobs never created.
b. Reductions in employee hours or benefits decrease workers’ pay without registering as jobs lost. For example, a [2012 paper](#) by Dr. Aaron Yelowitz of the University of Kentucky examined San Francisco’s $10.24 minimum wage (as of 2012) and concluded that every dollar increase in a city’s compensation floor causes a 26-hour reduction in the number of hours worked per year by younger employees. His paper also argued that every dollar increase in the minimum wage boosted unemployment for young workers by 4.5 percentage points and decreases their participation in the labor force by two percentage points.

c. If employers hire more skilled/educated workers over less-skilled/educated workers, the total number of jobs may remain the same while still making it harder for the least-skilled individuals to find work. As David Neumark, Ian Salas and William Wascher explained in a [2012 paper](#), “The minimum wage can lead employers to substitute higher-skilled workers for lower-skilled workers without reducing net employment very much.”

Overall, I think the evidence is pretty clear. As common sense would indicate, increasing the cost of labor will make it that much harder for the least-skilled, least-educated workers to find employment. After all, an employer is not likely to hire someone if they can’t produce enough value for the business to offset the cost of paying them. Effectively, the minimum wage criminalizes low-skill, entry-level jobs. While there is little disagreement that small increases in the minimum wage have moderate consequences, the larger the increase, the larger the consequences.

Sources:

Members of the Tacoma Minimum Wage Task Force,

Traditionally, the intended purpose of raising the minimum wage has been to help low-wage workers earn more and alleviate poverty.

While there is some debate as the effect of a higher minimum wage on employment, existing research strongly indicates that the minimum wage is woefully ineffective at reducing poverty.

Though certainly some workers will be raised out of poverty following a minimum wage increase, others will lose their jobs or see their hours cut. Others will pay more for goods and services as prices rise. On net, the minimum wage appears to be a very poor poverty-reduction tool.

1. In a 2012 paper, Professor David Neumark of the University of California-Irvine provided a succinct summary of the relevant research, writing:

   Research for the United States on state minimum wage increases generally fails to find evidence that minimum wages help the poor, and sometimes even suggests that minimum wages increase the number of poor or low-income families... Thus, the existing research literature provides no solid evidence of beneficial distributional effects of minimum wages for poor or low-income families on the whole. As a result, there is no basis for concluding that minimum wages reduce the proportion of families living in poverty or near poverty. Minimum wages do not deliver beneficial distributional effects that might offset the negative employment effects they cause.

2. It is difficult to improve upon the overview of this issue provided in a peer-reviewed study published in 2010 by Joseph Sabia of American University and Richard Burkhauser of Cornell University, so I will simply provide excerpts for your consideration:

   While reducing poverty among the working poor is a laudable policy goal, the evidence suggests that minimum wage increases have thus far provided little more than symbolic support to this population (Card and Krueger 1995; Neumark and Wascher 2002; Gundersen and Ziliak 2004; Burkhauser and Sabia 2007; Leigh 2007; Sabia 2008). Several explanations have been offered for this finding. Card and Krueger (1995) emphasize that minimum wages fail to reduce poverty because many poor Americans do not work. Others have argued that even among the working poor, the relationship between earning a low hourly wage rate and living in poverty is weak and has become weaker over time (Stigler 1946; Burkhauser, Couch, and Glenn 1996; Burkhauser and Sabia 2007). Moreover, even among affected workers, there is strong evidence that increases in the minimum wage reduce the employment of low-skilled workers (Neumark and Wascher 2008). While an increase in the minimum wage will lift out of poverty the families of some low-skilled workers who remain employed, other low-skilled workers will lose their jobs or have their hours significantly cut, reducing their income and dropping their families into poverty (Neumark and Wascher 2002; Neumark, Schweitzer, and Wascher 2004, 2005; Sabia 2008).
... We find no evidence that minimum wage increases between 2003 and 2007 lowered state poverty rates. Moreover, we find that the newly proposed federal minimum wage increase from $7.25 to $9.50 per hour, like the last increase from $5.15 to $7.25 per hour, is not well targeted to the working poor.

...We estimate that nearly 1.3 million jobs will be lost if the federal minimum wage is increased to $9.50 per hour, including 168,000 jobs currently held by the working poor... We conclude that further increases in the minimum wage will do little to reduce poverty...

When calculating the effect of the minimum wage on poverty, many studies try to take into account the reduced employment of low-skilled workers. However, as Sabia and Burkhauser point out, even when operating under the “optimistic assumption” that a higher minimum wage does not harm employment, significant research has shown that, “…workers living in poor households received few of the benefits of past minimum wage increases because their hourly wages were already greater than the proposed state or federal minimum wages. Instead, most of the benefits went to second or third earners living in households well above the poverty line.”

Stating the obvious, Sabia and Burkhauser note that, “One important critique of these simulations is that they overstate the benefits of minimum wages to the working poor because they ignore employment effects.”

In other words, significant research has shown that even under a best-case scenario in which raising the minimum wage has no negative effect on employment, studies still show that it does little to help alleviate poverty.

3. Sabia and Burkhauser’s research has been confirmed by a very recent study, published in April, by Thomas MaCurdy of Stanford University (a copy of the study is attached). As a side note, I strongly recommend reading the introduction to his paper. It provides a relatively short and accessible outline of the debate over the minimum wage before getting into the technical details of his study.

For the purposes of argument, MaCurdy’s study assumed that increasing the minimum wage would not reduce employment and that businesses would pay for the higher labor costs entirely through price increases. Again, for the purposes of argument, MaCurdy also assumes that the price increases will not decrease demand for goods and services. MaCurdy recognizes that neither of these assumptions is accurate, but makes them in order to examine the “distributional effects” of a higher minimum wage; put simply, how low-income vs. high-income households would be affected.

Even under this incredibly favorable scenario, MaCurdy finds that the minimum wage is “an ineffectual antipoverty policy.” From his conclusion:

Whereas fewer than one in four low-income families benefit from a minimum wage increase of the sort adopted in 1996, all low-income families pay for this increase...
through higher prices, rendering three in four low-income families as net losers. Meanwhile, many higher-income families are net winners ...

Because price increases hit low-income households the hardest and many low-income households do not benefit from a higher minimum wage, MaCurdy describes the minimum wage as “more regressive than a typical state sales tax,” concluding that:

Far more poor families suffer reductions in resources than those who gain, and as many rich families gain as poor families. These income transfer properties of the minimum wage reveal it to be an ineffectual antipoverty policy.

4. Even David Card and Alan Krueger (authors of the first study claiming the minimum wage didn’t reduce employment) have described the minimum wage as “blunt instrument” for increasing the income of the poor, and note that the effect of minimum wages on the overall poverty rate is “statistically undetectable.” Their primary explanation is that most individuals in poverty do not have jobs, and therefore will not benefit from a higher minimum wage.

While it is easy to “see” the happy worker who gets a pay bump following a minimum wage hike, we must not forget about the essentially invisible poor family that has to pay more for food, or the entry-level employee who has his hours cut as employers respond to higher costs.

Sources:
- David Neumark, “Should Missouri Raise its Minimum Wage?” Show-Me Institute, September 2012.
Members of the Tacoma Minimum Wage Task Force,

Many advocates of raising the minimum wage point to Washington State as an example that a higher minimum wage is good for the economy. Since voters passed Initiative 688 in 1998, Washington has had the highest state-level minimum wage in the country. The initiative also required the minimum wage to increase annually to account for inflation.

Yet, at the same time, unemployment and poverty typically lag the national average, while job growth often exceeds the national average. Surely, minimum wage supporters argue, this must mean that the high minimum wage has been good for Washington’s economy.

As you may have guessed, however, there are some big problems with this line of argument. For starters, correlation does not prove causation. In other words, just because two phenomenon are true at the same time (Washington has the highest state minimum wage and low unemployment) does not mean that one caused the other. It could quite possibly be true that Washington’s high minimum wage has harmed job growth for certain workers while the overall state economy remained exceptionally healthy.

So has Washington’s high minimum wage helped the economy or not? Washington’s minimum wage law has been on the books for over 15 years now, which allows us to examine several trends over a long time period. The information below is taken from a Freedom Foundation report (attached) on the minimum wage. Please reference the report for sources and data citations.

1. Poverty

While the intent of I-688 may have been to decrease poverty, it appears to have accomplished little. The chart below tracks the changes in how a Washington minimum wage workers’ full-time annual salary stacks up against the poverty threshold.
Key Points:

- When I-688 was passed in 1998, full-time minimum wage workers earned 126 percent of the poverty threshold. A worker with any dependents fell below the poverty line. Single, full-time minimum wage workers supporting two children under 18 earned 82 percent of the poverty threshold.

- Sixteen years later, in 2014, full-time minimum wage workers earned 157 percent of the poverty threshold and workers with two children earned 102 percent of the poverty line.

Despite I-688’s dramatic increase in the minimum wage compared to the poverty threshold, and despite the fact that Washington had the nation’s highest minimum wage, the state poverty rate (the percentage of Washington residents living below the poverty threshold) changed little relative to the national poverty rate.
Key Points:
- The state poverty rate has historically trailed the national rate, even prior to the passage of I-688 in 1998.
- The only time that Washington’s poverty rate exceeded the national rate was in 2003, following four years of increases in the poverty rate that began the year I-688 took effect.
- The average state poverty rate for the 15 years preceding passage of I-688 (1984-1998) was 10.7 percent. The average national poverty rate for the same period was 13.8 percent. The average state poverty rate for the 15 years following passage of I-688 (1999-2013) was 10.9 percent, a slight increase, while the national poverty rate for the same period was 13.1 percent, a slight decrease.

All other things being equal, minimum wage supporters would expect the poverty rate to decrease when the minimum wage increases. Despite the fact that Washington’s minimum wage rose substantially in the years since 1998, there was no noticeable change in the state poverty rate.

However, even this data is only correlative. There are two possible interpretations of the data: (1) The minimum wage increase was ineffective at decreasing poverty, or (2) it did reduce poverty beginning in 1998 but other factors at the same time began to increase poverty, canceling out the anti-poverty effect of the higher minimum wage.

2. Employment

Minimum wage advocates like to point out that the total number of restaurant jobs increased in Washington following passage of I-688 (restaurant jobs are often cited as typical minimum wage jobs). However, a closer look indicates that the growth rate for these jobs slowed dramatically, especially when compared to Washington population and overall jobs growth.
Key Points:

- Washington’s share of total U.S. accommodation and food service industry jobs (mainly hotels and restaurants) exceeded Washington’s share of total U.S. nonfarm employment and total U.S. population every year from 1990 until implementation of I-688 in 1999.
- Since the passage of I-688, Washington’s share of total accommodation and food service jobs has substantially declined, even while the state’s share of the nation’s population and total jobs have steadily increased.
- When voters passed I-688 in 1998, Washington had 2.09 percent of the nation’s population, 2.08 percent of the nation’s jobs and 2.10 percent of the nation’s accommodation and food service jobs. As of 2014, Washington’s share of the population had increased to 2.21 percent, its share of the nation’s jobs had increased to 2.21 percent, while its share of total U.S. accommodation and food services jobs had declined to 1.98 percent.
- While Washington’s share of the nation’s population increased by 5.7 percent since passage of I-688 in 1998, and its share of total U.S. jobs increased by 6.3 percent, the state’s share of U.S. accommodation and food services jobs fell by 5.7 percent.

Again, since the data is correlative, there are two possible interpretations: (1) Washington’s high minimum wage dramatically slowed job growth in low-wage sectors like hotels and restaurants, or (2) some other policy or economic change unique to Washington took effect at the same time the minimum wage was increased and caused the decline in jobs growth.

3. Unemployment
While the sky has not fallen in on Washington’s robust economy since passage of I-688, job prospects for the least-skilled and least-educated workers have certainly declined. The chart below compares Washington’s teen unemployment rate to the national rate before and after passage of I-688.

Key Points:
- For the 15 years preceding the implementation of I-688 (1984-1998), teen unemployment in Washington generally followed national trends, with Washington’s teen unemployment rate higher than the national rate in 10 out of 15 years. The worst year in the period for Washington teens occurred in 1986, when the state’s teen unemployment rate was 4.7 percentage points higher than the national rate.
- Washington’s teen unemployment rate has surpassed the national rate every year since the passage of I-688. At the peak of the recession in 2010, Washington’s teenage unemployment rate was 8.2 points higher than the unemployment rate for teens nationwide.

This correlative data means either: (1) the increase in Washington’s minimum wage dramatically reduced job prospects for teens or (2) some other policy or economic change unique to Washington took place at the same time the minimum wage law was passed and is responsible for raising the unemployment rate for teens.

Conclusion

While the information presented above is purely correlative, it is impressive how directly the observed changes in Washington’s economy after passage of I-688 align with the projections of minimum wage skeptics. Just as significant is the lack of any indication that enacting the nation’s
highest minimum wage produced the gains promised by labor activists in any measurable or lasting way.

At the time, supporters of I-688 claimed that raising the minimum wage and indexing it to inflation would end poverty wage jobs and depoliticize the issue in the future. The very fact that Tacoma and the state are again embroiled in debates about whether to again raise the minimum wage speaks to the ineffectiveness of prior efforts.
Members of the Tacoma Minimum Wage Task Force,

As a final note, I wanted to pass on a summary of a recent study that I came across this week.

In November, economists Jeffrey Clemens and Michael Wither of the University of California-San Diego released a study which took a new approach to examining the effect of the minimum wage on employment.

They used data sources that allowed them to track the earnings of individual low-skilled workers prior to and through the increase in the federal minimum wage from $5.15 to $7.25 between 2007 and 2009. Studies typically only examine industries or demographic groups that tend to have a higher concentration of low-skilled workers, rather than analyzing specific individuals.

As the authors explain,

*Past work focuses primarily on the minimum wage’s effects on particular demographic groups, such as teenagers, and/or specific industries, like food service and retail. While minimum and sub-minimum wage workers are disproportionately represented among these groups, both are selected snapshots of the relevant population. Furthermore, it is primarily low skilled adults, rather than teenage dependents, who are the intended beneficiaries of anti-poverty efforts. Assessing the minimum wage from an anti-poverty perspective thus requires characterizing its effects on the broader population of low-skilled workers, which we are able to do.*

Among their many findings, Clemans and Wither conclude:

- “Increases in the minimum wage significantly reduced the employment of low-skilled workers. By the second year following the $7.25 minimum’s implementation, we estimate that targeted workers’ employment rates had fallen by 6 percentage points (8 percent).”
- “In addition to reducing employment, we find that binding minimum wage increases increased the likelihood that targeted individuals work without pay (by 2 percentage points or 12 percent). This novel effect is concentrated among individuals with at least some college education. We take this as suggestive that such workers’ entry level jobs are relatively readily posted as [unpaid] internships. For low-skilled, low-education workers, the entire change in the probability of having no earnings comes through unemployment.”
- “We estimate that binding minimum wage increases reduced the average monthly income of low-skilled workers by $97 in the short-run and $153 in the medium-run.”
- “The effect of binding minimum wage increases on the incidence of poverty was statistically indistinguishable from 0.”
- “Binding minimum wage increases reduced the medium-run class mobility of low-skilled workers. Such workers became significantly less likely to rise to the lower middle class earnings threshold of $1500 per month. The reduction was particularly large for low-skilled workers with relatively little education… It appears that binding minimum wage increases blunted these workers’ prospects for medium-run economic mobility by
reducing their short-run access to opportunities for accumulating experience and developing skills. This period’s minimum wage increases may thus have made the first rung on the earnings ladder more difficult for low-skilled workers to reach.”

- “Our best estimate is that this period’s minimum wage increases resulted in a 0.7 percentage point decline in the national employment-to-population ratio for adults aged 16 to 64. This accounts for 14 percent of the total decline in the employment-to population ratio over this time period.”

I have attached copies of the previous briefings for your reference.

Please feel free to contact me with any thoughts or questions you may have.