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Local Minimum Wage Laws: Impacts on Workers, Families and Businesses

Report prepared for the Seattle Income Inequality Advisory Committee

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Executive Summary

As cities and counties across the country increasingly debate whether to establish their own minimum wage laws, policymakers are understandably asking a host of questions. How are existing laws designed? What do we know about the impacts of local wage mandates on workers and their families? What does research tell us about the effect of local wage mandates on employment, and, in particular, do businesses move outside city or county borders in response? In this report, we address these and related questions.

Existing local minimum wage laws

- Nine localities in the United States currently have enacted minimum wage laws: Albuquerque, NM; Bernalillo County, NM; Montgomery County, MD; Prince George's County, MD; San Francisco, CA; San Jose, CA; Santa Fe, NM; Santa Fe County, NM; and Washington DC. (Richmond, CA, just voted to raise its minimum wage to $12.30 an hour by 2017, and a final vote is pending to pass the law.)
- Current mandated wage levels range from $8.50 in Bernalillo County to $10.74 an hour in San Francisco. (New wage mandates in Washington DC and Santa Fe, Montgomery, and Prince George's Counties go into effect later this year.)
- On average, the existing local minimum wage laws have mandated total wage increases of 41.4 percent, many of them in multiple steps and the majority indexed to inflation thereafter. Localities with larger increases have been more likely to implement them in several steps. Across the localities, the average per-step minimum wage increase is 16.7 percent.
- The nine laws are similar in covering the large majority of work that is performed within the boundaries of their cities or counties. San Francisco delayed coverage of nonprofits and small businesses (less than 10 employees) for one year. Santa Fe initially exempted small businesses but later amended its law to cover all establishments.
- Two of the nine laws (San Francisco and San Jose) follow their state's law in treating tipped workers the same as non-tipped workers, maintaining a uniform minimum wage for both groups. The other seven laws follow their states' laws in maintaining a lower minimum wage for tipped workers (even as some increased the base wage for tipped workers). Several of the laws make similar provisions for commissioned workers.

How San Francisco enforces its minimum wage law

- San Francisco uses a variety of high-impact enforcement and education strategies to ensure that the city's minimum wage law has its intended effect.

- From the beginning of 2004 to mid-2012, San Francisco's enforcement agency processed 616 worker complaints related to the minimum wage and recovered $5.8 million in back wages on behalf of 3,004 workers. These are higher benchmarks than typically achieved by state and federal enforcement agencies.
- San Francisco's Office of Labor Standards Enforcement assigns 7.5 compliance officers to minimum wage enforcement on behalf of approximately 611,000 people employed in the city. These officers share responsibility for enforcement of the city's paid sick leave law as well.
- Approximately $979,000 supports the 7.5 positions devoted to minimum wage enforcement. In addition, $462,125 is contracted to community organizations that provide education, outreach, and case referrals, largely focused on minimum wage violations.

Effects of minimum wage laws on workers and families

- Researchers consistently find that minimum wage laws raise pay for workers at the bottom rungs of the labor market. These increases include both directly affected workers (those earning between the old and the new minimum wage) as well as those indirectly affected (those earning above, but near, the new minimum wage).
- Raising the minimum wage also pushes up the wage floor relative to the median wage, thereby reducing pay inequality.
- Researchers consistently find that the affected workers are largely adults and disproportionately women and people of color.
- New research on the effect of minimum wage increases documents important reductions in family poverty rates and enrollments in public assistance programs, such as food stamps.
- Researchers have not estimated the amount of economic stimulus actually created by the new spending power of low-wage workers after minimum wage increases. We do know that low-wage workers and their families are likely to spend a significant portion of those increased earnings.

Effects of minimum wage laws on businesses

Economists have increasingly recognized that raising the minimum wage does not automatically mean that employment will fall. Increased labor costs can be absorbed through a variety of other channels, including savings from reduced worker turnover and improved efficiency, higher prices, and lower profits. Modern economics therefore regards the employment effect of a minimum wage increase as a question that is not decided by theory, but by empirical testing.

- Labor economists continue to debate the actual impacts of the minimum wage on employment and hours. We discuss in our assessment the most rigorous studies and offer a non-technical explanation of the nature of the disagreements in the research literature.
- To date, three rigorous studies have examined the employment impacts of San Francisco's and Santa Fe's local minimum wage laws. Each finds no statistically significant negative effects on employment or hours (including in low-wage industries such as restaurants).
- A larger body of economic research investigates the effects of state and federal minimum wage increases. These studies compare employment trends for states or counties that have different minimum wages. The best studies make comparisons to nearby states or counties to control for regional economic trends. These studies also find no statistically significant negative effects on employment or hours at an aggregate level or for low-wage industries such as restaurants and retail stores, or for specific groups of workers such as teens. These studies also do not find substitution effects (such as shifts in hiring away from black and Latino teens).
- Studies of the impact of minimum wage increases on restaurants' operating costs find that an increase of 10 percent in the minimum wage increases operating costs by about 1 to 2 percent.
- Researchers find small one-time price increases in the restaurant industry (of about 0.7 percent following a 10 percent minimum wage increase), but not in other industries.
- Researchers find that increases in the minimum wage reduce employee turnover, translating into a reduction in direct costs (recruitment, selection, and training of new workers) and a reduction in indirect costs (lost sales, lower quality service, and lost productivity as the new workers learn on the job). Some studies have also identified additional benefits of higher wages, including improved morale, improved work performance, and reductions in absenteeism.
- Researchers have not found evidence that employers absorbed minimum wage increases by reducing health benefits or pensions.

In summary, our assessment of the research evidence indicates that minimum wage mandates raise the incomes of low-wage workers and their families, and that the costs to businesses are absorbed largely by reduced turnover costs and by small price increases among restaurants. That said, it is important to emphasize that existing research is necessarily limited to the range of minimum wage increases that have been implemented to date. While these studies are suggestive, they cannot tell us what is likely to happen when minimum wages are increased significantly beyond current local, state, or general mandates.

1. Introduction

As cities and counties across the country increasingly debate whether to establish their own minimum wage laws, policymakers are understandably asking a host of questions. How are existing laws designed? What do we know about the impact on workers and their families? What does research tell us about the effect of local wage mandates on employment, and in particular, do businesses move outside city or county borders in response?

In this report, we address these and related questions. We first provide an overview of the nine existing local minimum wage laws in the United States. We summarize their wage levels and policy design features, such as phase-ins, coverage and exemptions, and treatment of tipped workers. Our assessment is that, taken together, these laws represent a consistent public policy model that establishes strong local wage standards covering the overwhelming majority of work performed within city or county boundaries. We also provide a case study of how one city, San Francisco, has enforced its minimum wage law.

Economists agree that minimum wage laws have large positive effects on workers' pay and their families' living standards. Raising the minimum wage increases earnings for workers at the low end of the labor market, the majority of whom are adults. Women and workers of color benefit disproportionately. In addition, new research on the effect of minimum wage increases documents important reductions in family poverty rates. Moreover, low-wage workers and their families are often forced to rely on public assistance programs; new research on food stamps finds that raising the minimum wage reduces their reliance on this program.

We then review the economic research on the impact of minimum wage laws workers, families, and businesses. In our assessment, the weight of the evidence suggests that moderate minimum wage increases have insignificant to non-existent negative effects on employment and hours, reduce worker turnover and increase worker retention, and result in small, one-time price increases in heavily-affected industries, such as restaurants. We also explain how conflicting findings on the employment impact of the minimum wage can be traced to differences in the rigor of the research methods.

2. Profile of existing local minimum wage laws

In this section, we give an overview of existing local minimum wage laws in the United States. Currently, there are nine such laws, with the majority passed in recent years. In this group, we include minimum wage laws passed by cities or counties that broadly cover most businesses and workers within their jurisdictions. We do not include local wage mandates with narrow

coverage, such as living wage laws restricted to city contractors or laws targeting airports or specific industries such as hotels. These are important policy models in their own right, but they are less relevant to assessing the economic impacts of local minimum wage laws that affect the large majority of employers and workers in a city or county.

We want to flag several important caveats. Given the short timeline for this report, we were not able to examine any regulatory interpretations of the laws; the below tables summarize statutory provisions. Similarly, we were not able to itemize provisions in the localities' respective state minimum wage laws that are implicitly followed by the city or county statutes. Finally, while we have done our best to be as accurate as possible in these tables, we are not lawyers and encourage verification by the City's legal staff.

Our overall assessment is that despite some variation in policy design, existing local minimum wage laws represent a consistent public policy model that establishes strong local wage standards and covers the majority of work performed within city or county boundaries.

The wage mandates

Table 1 provides an overview profile of the nine existing local minimum wage laws. (Richmond, CA, just voted to raise its minimum wage to $12.30 an hour by 2017, and a final vote is pending to pass the law.) Note that the table summarizes current laws. In Albuquerque, Bernalillo County, and Washington DC, those laws updated older existing laws.

Six of the nine laws were enacted by a legislative process. The San Francisco, Albuquerque, and San Jose laws were enacted using ballot measures. The gaps between the enactment dates and initial implementation dates range from two months to one year. Current mandated wage levels range from $8.50 in Bernalillo County to $10.74 in San Francisco. (The more recent wage mandates in Washington DC and Santa Fe, Montgomery, and Prince George's Counties shown in Table 1 are not yet in effect). Seven of the nine localities increase their wage floors annually according to changes in a consumer price index.

Table 2 details the wage increases mandated by each of the laws, showing the variation in policy design. In this table, we include both current laws as well as older laws that have been superseded.

Some localities established their minimum wage in one step, while others phased in their mandate. For example, San Jose established its minimum wage in 2013, raising it from the state minimum wage (of $8.00 an hour) to $10.00 an hour in one step. San Francisco adopted

a hybrid model; it established its minimum wage in one step, going from $6.75 to $8.50 an hour in 2004, but delayed its mandate by one year for nonprofits and businesses with fewer than ten employees. Santa Fe combined those strategies, establishing its minimum wage in two steps (to $8.50 an hour in 2004 and $9.50 an hour in 2006) and initially exempting businesses with fewer than 25 employees, who were then covered in 2008.

Several localities recently updated their existing laws via new legislation or ballot initiatives. Washington DC's 2004 minimum wage law was implemented in several steps. It then passed a new law in 2014, at about the same time as neighboring Montgomery and Prince George's Counties. Albuquerque and Bernalillo County (Albuquerque's surrounding county) recently passed new ordinances superseding their older existing laws.

Table 3 summarizes the total mandated percentage wage increases for each of the nine laws, calculated to encompass all of the phase-in steps (these percentages do not include subsequent indexing to cost-of-living increases). Total increases range from a low of 13.3 percent in Albuquerque (2012) and Bernalillo County (2013) to a high of 84.5 percent in Santa Fe (2003).[1]

On average, the nine local minimum wage laws increased their wage floors by 41.4 percent. As Tables 1 and 2 show, many of those increases occurred in multiple steps, and seven out of nine indexed to inflation thereafter. In general, localities with larger increases were somewhat more likely to implement them in several steps. Across the localities, the average per-step minimum wage increase was 16.7 percent.

Coverage and exemptions

Table 4 summarizes the businesses that are covered/exempted under the nine local minimum wage laws. The laws are similar in covering the large majority of work that is performed within the boundaries of their cities or counties. The laws vary in the reach of coverage to outside businesses that perform work in the city or county and how that coverage is specified.

In addition, San Francisco delayed coverage of nonprofits and small businesses for one year. Santa Fe initially exempted small businesses from its 2003 law, but in 2007 amended the law to cover all establishments regardless of size (it continues to exempt nonprofits whose primary source of funding is from Medicaid waivers). Several of the localities exempt state and federal agencies to varying degrees.

[1] The first Santa Fe increase, 65 percent, was followed by a smaller increase two years later. The large initial increase may overstate the impact of the law on wages. A small share of covered workers had wages at or near the minimum wage at the time of the increase (Pollin and Wicks-Lim 2005).

Table 4 also summarizes coverage and exemptions for workers. Several laws explicitly state that undocumented workers and various types of contingent workers (e.g., part-time and temporary agency workers) are covered. Groups of workers that are exempted by some localities include employers' family members; workers exempt under state minimum wage law; interns working for academic credit; workers enrolled in apprenticeship programs; persons working fewer than two hours a week in the city or county; and various other groups of workers.

Treatment of other forms of compensation

Table 5 summarizes treatment of tipped workers under the nine laws. Two of the nine laws (San Francisco and San Jose) follow their state's law and treat tipped workers the same as non-tipped workers, maintaining a uniform minimum wage for both groups. The other seven laws follow their states' laws in maintaining a lower minimum wage for tipped workers (even as some increased the base wage for tipped workers above the state level). These laws allow the employer to count the workers' tips in meeting the full minimum wage requirement (often called a "tip credit"). If a worker's tips do not suffice to meet the full minimum wage requirement, the employer must make up the difference. Several of the local minimum wage laws also make provisions for commissioned workers, along similar lines.

Finally, Table 5 lists provisions in a number of the laws pertaining to other forms of compensation. For example, three localities (Albuquerque, Bernalillo County, and Santa Fe) allow employers to include some or all of their payment of health benefits and childcare in the calculation of wages paid. Data are not available on the extent to which employers have made use of these provisions. In general, low-wage workers are less likely than higher-wage workers to have health coverage through an employer.

We were not able to find any references in the laws to how profit-sharing compensation systems should be treated in calculating hourly wages.

3. How San Francisco enforces its minimum wage law

In this section, we summarize an in-depth study of San Francisco's enforcement of its minimum wage law. Our summary draws from a more complete analysis by Dietz, Levitt, and Love (2014).

A. The Office of Labor Standards Enforcement

San Francisco's Office of Labor Standards Enforcement (OLSE), originally created to enforce the city's prevailing wage laws, expanded its scope as San Francisco passed new labor standards. After the city's minimum wage was passed by ballot initiative in 2003, four of five positions previously assigned to enforce the city's living wage law were reassigned to enforce the new minimum wage law. As of February 2014, 7.5 contract compliance officers are assigned to minimum wage enforcement on behalf of approximately 611,000 people employed in the city of San Francisco. Each of these compliance officers share responsibility for enforcement of the city's paid sick leave law as well.

B. Strategies for minimum wage enforcement

OLSE investigates minimum wage cases by engaging in company-wide investigations. When a worker files a complaint, either directly with the office or through one of the community partners under contract with OLSE, an officer interviews the employee first. The officer arrives at the employer unannounced; he or she then interviews the employer and other employees, audits payroll records, and reviews other relevant documents to determine if the employer violated the labor rights of the original claimant or any other employee. If the officer finds a violation, he or she develops a case against the employer on behalf of *all* employees whose rights were violated and sends a letter of determination to the employer. If the employer disagrees with the OLSE findings or simply ignores the letter, the office must initiate a formal hearing process, which can take months to complete.[2] However, such a hearing process can result in hefty additional fines for the employer. As a result, in most cases OLSE reaches a settlement with the employer without resorting to the lengthy formal process.

This strategy contrasts with the common state and federal enforcement practice of acting as an arbiter rather than investigator. In many cases, these other enforcement agencies' main role is to engage in reconciliation (often a phone call to the employer) or set up an informal settlement conference between the employer and the individual employee. The San Francisco strategy of investigating all labor standards and on behalf of all workers can be more time consuming, but it has a better chance of recovering full back wages for the worker. This strategy focuses on fixing business practices in the long-run, rather than fixing one-off issues quickly.

Other strategies that OLSE considers important for its effectiveness include:

[2] Subsequent laws were written such that employers must take action within 15 days if they disagree with OLSE's determination by filing a request for a hearing; otherwise OLSE's determination is final.

- *Engaging in education and outreach to employers and workers*. Posters announce the new inflation-adjusted minimum wage on public transport at the beginning of every year, and all city businesses with employees are sent the required notices for posting. All OLSE staff spend time responding to questions from hotlines and emails, and setting up meetings to educate workers and employers. Multilingual outreach and announcements are especially important given the linguistic diversity in San Francisco.
- *Building trust with workers*. The same officer handles a case from start to finish, building trust and ensuring that workers are not lost in the process. The office collects back-up contact information from a friend or relative, and has successfully maintained contact with and provided back wages to workers who have moved, even when they move across international borders.
- *Working with other departments*. OLSE has worked with the city and district attorneys' offices to prosecute particularly egregious labor standards violators. OLSE also works with the city's Department of Health, which conducts investigations and administrative hearings related to restaurant health permits. The threat of revoking a health permit has helped OLSE enforce existing agreements for back pay and to resolve disputes with intransigent employers engaged in negotiations with the office.

C. Measures of effectiveness

From the beginning of 2004 to mid-2012, OLSE received 616 worker complaints related to the minimum wage and recovered $5.8 million in back wages on behalf of 3,004 workers. In just 2011, OLSE opened 77 cases and collected $638,171 in back wages. While the amount collected in that year was not necessarily for cases opened in that year, this measure still provides a useful metric to compare to other jurisdictions. Wages collected per case opened in 2011 were $8,288, or $2,041 per claimant. In comparison, Washington DC collected $766 per claim, and California's Department of Labor Standards Enforcement (DLSE) collected $995 per case opened. Two factors explain OLSE's high average amount collected: (a) OLSE investigates on behalf of all workers and often ends up including more than the original worker(s) who filed the claim, and (b) in all but a handful of cases OLSE successfully recovered all of the back wages owed. In other enforcement offices, the amount of wages *due* often differs significantly from the wages *collected*.

Penalties may be levied against employers found to be in violation of minimum wage laws. To reach settlements with employers the office never negotiates away back wages, but may forgo penalties or recovering the cost of investigations. As a result, actual penalties collected are

relatively low: about $310,000 in penalties have been collected for minimum wage and paid sick leave violations since FY 2008-09.

D. Fiscal cost to San Francisco

In FY 2013-14, the budget for OLSE totaled $3.7 million. This amount supports 19 positions and three professional services contracts, including one for web-based certified payroll reporting. However, the office is also tasked with enforcing a number of other labor standards beyond the minimum wage: for city contractors—prevailing wage, living wage and living health, sweat-free contracting, and the displaced worker protection act; for all employers—paid sick leave, a health spending requirement, and a family-friendly workplace ordinance. OLSE estimates that approximately $979,000 supports the 7.5 positions devoted to minimum wage enforcement—about $753,000 in salaries and benefits and $226,000 in overhead, not including clerical support. In addition to this cost, $462,125 goes to community organizations that provide education, outreach, and referrals to OLSE, largely focused on minimum wage violations.

4. The research literature on minimum wage effects

In the following two sections, we summarize the empirical evidence on the effects of minimum wage laws on workers, families, and businesses. Where possible, we highlight research on local minimum wage laws. However, since most of the existing local laws have been in place a short time, the data that are needed for rigorous research on the recent laws are not yet available. To date, rigorous economic impact studies exist only for San Francisco and Santa Fe (UC Berkeley researchers are currently studying the impact of San Jose's law). The San Francisco impact study (Dube, Naidu and Reich 2007, 2014) in particular stands out as well-designed and well-suited to informing the City of Seattle's Advisory Committee, given the many similarities between Seattle and San Francisco.

We also draw upon the much larger body of research on the impacts of state and federal minimum wage increases. Recent studies that compare adjacent counties from different states with different minimum wages are especially relevant. The findings from these studies speak directly to policymakers' concerns that businesses might relocate employment outside their city's borders in response to a local minimum wage law.

5. The effects of minimum wage laws on workers and families

The primary goal of raising the minimum wage is, of course, to raise the pay of low-wage

workers. A broad consensus in the economic research literature agrees that minimum wage laws raise pay for workers on the bottom rungs of the labor market (for an extensive review, see Belman and Wolfson 2014). Researchers also consistently find that the affected workers are largely adults and disproportionately women and people of color. In addition, new research on the effect of minimum wage increases shows important reductions in family poverty rates, especially among working families. Finally, we review what is known about reliance on public assistance programs by low-wage workers and their families.

This section focuses on summarizing what we have learned about the effects of minimum wage increases on workers and families.

A. Impact on low-wage workers' earnings

In assessing the impact of a minimum wage increase on low-wage workers' earnings, it is important to keep two facts in mind. First, many low-paid workers earn wages somewhere above the old minimum wage level but below the new level. Consequently, not all workers who are directly affected by an increase will receive the full amount of that increase. Second, researchers have also documented a "ripple effect" from minimum wage increases in which employers give raises to workers who are earning above, but near, the new minimum wage. (Wicks-Lim 2006). As a result, it is not completely straightforward to estimate either how many workers benefit from minimum wage increases or the policy's impact on their earnings.

Evidence from local minimum wage laws

Dube, Naidu and Reich (2007) assessed San Francisco's minimum wage law when it was first implemented in 2004, using a before-and-after survey of restaurant employers in San Francisco and in nearby parts of neighboring Alameda County. They found that the average wage of workers at surveyed restaurants rose from $10.22 before to $11.01 after the increase, with pay rising twice as much among fast-food restaurants compared to table-service restaurants. They also found evidence that the increase compressed the wage distribution among restaurant workers by raising the bottom of the distribution (not by hurting pay for higher-wage workers). Before the policy, 49.7 percent of restaurant workers earned less than $8.50; afterward, only 5 percent did. The authors also tested whether compliance with minimum wage laws decreased after the law passed. They found no evidence of decreased compliance.

Jacobs and Reich (2014) recently conducted a longer-term assessment of San Francisco's minimum wage law. They estimate that 55,000 workers in the city receive higher pay because of the ordinance, amounting to a cumulative increase of $1.2 billion in wages in the ten years

since the laws' inception. They also found additional evidence that the law had a significant impact on workers' earnings over time. As shown in Figure 1, the wages of San Francisco workers earning at the bottom of the distribution (the 10th percentile) jumped in 2004, when the law was implemented. This wage, when measured to take account of inflation, did not change even during the recession that began in December 2007 because the city's minimum wage standard is indexed to inflation. By contrast, the 10th percentile wage in the surrounding counties, without an indexed minimum wage, declined over that same time period.

Additional lessons can be gleaned from Santa Fe, the other city whose minimum wage law has been extensively studied. Pollin's (2004) detailed prospective study of the city's 2004 law estimated that 17,000 workers would be directly or indirectly affected and that the directly affected workers would see an average increase of $2,647 in annual earnings. In a more recent prospective study, Reich (2012) estimated that San Jose's minimum wage increase from $8 to $10 would lead to higher pay for about 69,000 of the city's 388,000-person workforce (18.9 percent).

Schmitt and Rosnick (2011) studied the wage impacts of both the San Francisco and Santa Fe laws. These authors found that wages increased in a range of low-wage industries in both cities.[3] In San Francisco, for example, the average wage of fast-food workers increased 9 to 11 percent by the third year of the ordinance, and as much as 12 percent in low-wage industries overall. Pay for fast-food workers in Santa Fe increased by similar amounts, together with wage increases of 2 to 9 percent in the retail industry and 5 to 15 percent for low-wage industries overall. (See also Reynis, Segal and Bleeker (2005) for similar findings.)

Finally, a broader literature has looked at state and federal minimum wage increases and estimated their impact on workers' earnings. In their comprehensive review of existing research, Belman and Wolfson (2014) estimate that changes in the minimum wage typically affect about 10 to 20 percent of the labor force (and sometimes as much as 30 percent), counting both direct and indirect effects. The average wage increase per impacted worker depends on the size of the minimum wage increase and what the average worker was earning beforehand. As a concrete example, Schmitt (2013) analyzed federal minimum wage increases from 1989 to 2009 and estimates that impacted workers' wages rose between 8.4 and 13.6 percent. Research consistently finds that the pay of both adults and teens is affected by minimum wage increases (Allegretto, Dube and Reich 2011; Giuliano 2013).

[3] The authors also examined the impact of the 1993 minimum wage law in Washington DC, but found that the size of the increase was too small to raise wages in those industries (too few workers were affected). They conclude that the law therefore did not constitute a meaningful policy experiment.

We also note broad agreement among economists that raising the minimum wage reduces income inequality, by pushing up the wage floor relative to the median wage (Lee 1999; Autor, Manning and Smith 2010).

B. Demographics of affected workers

Evidence on who benefits from minimum wage increases comes mainly from prospective studies (conducted when a minimum wage law is first being considered). In these studies, researchers analyze government survey data and estimate the number and characteristics of workers likely to be affected, given wage thresholds being considered by law makers.

For example, drawing on results in Reich and Laitinen (2003), Lantsberg (2003) conducted a prospective study of San Francisco's first minimum wage increase in 2004 (from $6.75 to $8.50). He estimated that about 55,700 workers (14 percent of private sector workers) would benefit from the law, with 70 percent age 26 or older. Lantsberg also found differences by race and ethnicity. He estimated that while 9 percent of white workers would be affected, the corresponding figures were 18 percent of African American workers, 21 percent of Asian workers, and 22 percent of Hispanic workers. In his prospective study of Santa Fe's 2004 minimum wage law, Pollin (2004) similarly found that the increase would benefit mainly adult workers (many of them primary bread-winners) and especially workers of color.

More recently, the Council of Economic Advisers (2014) analyzed the likely effects of the Harkin/Miller bill to raise the current federal minimum wage from $7.25 to $10.10 by 2016. The CEA found that the proposal would raise wages for 28.2 million workers (19 million directly, the remainder indirectly), or 21.4 percent of the U.S. workforce. CEA estimates that the majority of affected workers are women (55 percent) and aged 20 or older (88 percent). The CEA also estimates that black and Hispanic workers will benefit more than white workers, and that 46 percent of affected families have incomes under $35,000 a year.

In an earlier study, Bernstein and Schmitt (1998) examined the characteristics of workers and families that benefitted from the federal minimum wage increase in the mid-1990s (from $4.25 to $4.75 in 1996 to $5.15 in 1997). The researchers found that the two-step increase raised the wages of 9.9 million workers, largely adults (71 percent) and disproportionately women and black and Hispanic workers. About half of the beneficiaries worked full time, and an additional third worked 20-34 hours a week. Moreover, the average affected worker contributed 54 percent of his or her household earnings. In aggregate, 58 percent of the benefits from the minimum wage increase were received by households in the bottom 40 percent of the family income distribution.

C. Effects on poverty and use of public assistance programs

Impact on poverty

Compared to the large volume of research on the employment effects of minimum wage laws, few studies have examined the impact on poverty. A recent paper by Arindrajit Dube shows important reductions in family poverty rates from minimum wage laws.

Specifically, Dube (2013) finds that higher minimum wages increase incomes at the bottom of the family income distribution, reduce the percent of individuals living below the poverty line, and, in particular, reduce extreme poverty (families with incomes less than one-half the poverty line). The reductions in poverty are somewhat larger for black and Latino individuals, for those with less education, and for children under 18.

Based on state-of the-art econometric methods, Dube's estimates predict that the Harkin-Miller proposal (to raise the federal minimum wage from $7.25 to $10.10 an hour) would reduce the number of people living in poverty in the U.S. by 4.6 million. These Americans constitute about a fifth of the working poor. Other recent studies, using less sophisticated statistical methods, also show that raising the minimum wage reduces poverty. The Council of Economic Advisers (2014) predicts that the proposal would raise incomes for an estimated 12 million now in poverty, lifting 2 million of them out of poverty. The Congressional Budget Office (2014) estimates that the Harkin-Miller proposal would lift 900,000 people out of poverty.

Impact on use of public assistance programs

Until recently, economists have typically not assessed the impact of minimum wage increases on the use of public assistance programs by low-wage workers and their families.

Across several years in the 2000s, researchers in four states used a consistent methodology to estimate the portion of working poor families enrolled in public assistance programs. The research teams considered major programs such as Medicaid, EITC (Earned Income Tax Credit), Food Stamps, SCHIP (State Children's Health Insurance Program), TANF (Temporary Aid to Needy Families), and subsidized child care. Their findings were remarkably consistent across the four states:

- *New York*: In 2001-2004, an estimated 890,000 working families were enrolled in at least one public assistance program, accounting for 33 percent of all public benefits spending in the state, or $5.2 billion annually (Bernhardt, Chaddha and McGrath 2008).
- *Illinois*: In 2001-2004, an estimated 475,000 working families were enrolled in at least one public assistance program, accounting for 37 percent of all public benefits spending in the state, or $2.2 billion annually (Theodore and Doussard 2006).
- *Wisconsin*: In 2001-2004, an estimated 178,000 working families were enrolled in at least one public assistance program, accounting for 45 percent of all public benefits spending in the state, or $837 million annually (Center on Wisconsin Strategy 2006).
- *California*: In 2002, an estimated 2 million working families were enrolled in at least one public assistance program, accounting for 48 percent of all public benefits spending in the state, or $10.1 billion annually (Zabin, Dube and Jacobs 2004).

In all four states, low wages were the leading predictor of enrollment in public assistance programs by working families.

More recently, researchers using a similar methodology found that 60 percent of spending on food stamps and 47 percent of spending on TANF nationally is provided to members of working families. The researchers further found that more than half (52 percent) of families of fast-food workers are enrolled in one or more public programs, at an annual cost of nearly $7 billion. Again, low wages were the main predictor of public program enrollment (Allegretto, Doussard, Graham-Squire, et al. 2013).

Does raising the minimum wage reduce reliance on means-tested public assistance programs? The answer may seem obvious, but West and Reich (2014) point out that the research question is more complex. If, for example, raising the minimum wage causes increased unemployment, more workers and families would have to rely on programs such as food stamps. The authors analyze state and federal minimum wage increases from 1990-2012 and find that, on average, a 10 percent increase in the minimum wage reduces food stamp program enrollment by between 2.4 and 3.2 percent, and reduces program expenditures by 1.9 percent.[4] They predict that an increase of the federal minimum wage to $10.10 would reduce enrollment in the food stamp

[4] Several studies have examined the relationship between the minimum wage and the Earned Income Tax Credit, or EITC. Neumark and Wascher (2011) find that a higher minimum wage increases EITC benefits for families in deep poverty, while reducing EITC benefits for some subgroups. Lee and Saez (2012) argue that the minimum wage and EITC are complementary policies, not substitutes. The Congressional Budget Office (2014) argues that a minimum wage increase will not have a substantial effect on EITC spending, while Rothstein (2010) examines whether the positive effect of the EITC on female labor supply has lowered wages. While these studies are of interest, the EITC is quite different from programs such as food stamps. The EITC has a substantial phase-in period during which benefits increase and a long phase-out period, with eligibility ending completely at an annual income of about $48,000 for a family of four—quite a bit above the reach of the minimum wage.

program by about 3.5 million people and reduce federal expenditures on food stamps by about $4.2 billion per year.

More generally, since eligibility for programs such as SNAP and Medicaid are tied to the federal poverty level, Dube's (2013) finding that higher minimum wages reduce the poverty rate suggests that we might also expect reductions in enrollments in public assistance programs.

D. Effects on the economy

A common question is whether raising the minimum wage might act as an economic stimulus and engine of job growth, as low-wage workers spend their increased earnings in local communities. Unfortunately, the economic research literature has not addressed this question. Consequently it is not possible to make a confident assessment of these broader economic impacts of minimum wage laws.

A few studies have attempted such estimates with prospective studies. For example, Lantsberg (2003) estimated that the first minimum wage increase in San Francisco would result in $45 million in additional spending by low-income families on food, clothing, and other items, likely in local neighborhood businesses. Similarly, Pollin (2004) estimated that Santa Fe's 2004 minimum wage increase would result in an additional $15 million of spending, potentially boosting retail sales in local neighborhoods by 5 percent.

More recently, researchers at the Federal Reserve Bank of Chicago analyzed how a future federal minimum wage increase would affect aggregate household spending. The authors calculate that a $1.75 increase in the federal minimum wage (from $7.25 to $9.00 an hour) would raise aggregate household spending by roughly $48 billion in the short term, increasing GDP by 0.3 percent (Aaronson and French 2013). In a similar vein, the Economic Policy Institute recently estimated that the Harkin/Miller bill would result in an additional $35 billion in wages paid to affected workers by 2016. This projected rise in consumer spending would provide a net increase in GDP of $22.1 billion, creating roughly 85,000 new jobs (Cooper 2013).

These prospective estimates require a series of assumptions about the future behaviors of workers, owners, and consumers and their interactions that are difficult to validate. For local laws, the size of the locality and the proportion of workers who live and spend their income in the locality are also important. We do know that low-wage workers and their families are likely to spend a significant portion of their increased earnings from a minimum wage increase (Johnson, Parker and Soueles 2004).

6. The effects of minimum wage laws on businesses

The impact of the minimum wage on businesses—how many workers they hire, whom they hire, the prices they charge for their goods and services, their location decisions—is one of the most researched topics in economics, with hundreds of studies published over the decades. We do not attempt to summarize the full literature in this report; for recent reviews see Brown (1999), Neumark and Wascher (2006), Schmitt (2013), and Belman and Wolfson (2014).

Economists' understanding of minimum wage effects has undergone significant changes over the past 20 years. This shift began with the groundbreaking work of Card and Krueger (1994), who analyzed employment in fast-food restaurants near the New Jersey and Pennsylvania border after New Jersey increased its state minimum wage. Card and Krueger found no measurable negative impact on employment.

Since then, economists have increasingly recognized that raising the minimum wage does not automatically mean that employment will fall. Increased labor costs can be absorbed through a variety of other channels. For example, if turnover declines, employers save on recruiting and training costs at the same time that they reap the benefits of more experienced workers who are more productive. When a cost increase affects all firms in an industry, firms can also raise their prices rather than reduce the number of employees. They may also experience lower profits. Modern economics therefore regards the employment effect of a minimum wage increase as a question that is not decided by theory, but by empirical testing.

In what follows we summarize the research that in our opinion is best suited to assessing the effects of minimum wage increases on businesses; we also give an intuitive explanation of the nature of the disagreements in the research literature about those effects.

Before proceeding, it is important to mention that existing research has only studied moderate increases in the minimum wage, of the size discussed in previous sections. These studies can only be suggestive of what might occur when minimum wages are increased significantly beyond existing local, state, or federal mandates.

A. Impact on employment and hours

Evidence from local minimum wage laws

To our knowledge, there are three rigorous studies of the employment impacts of existing city minimum wage laws. Dube, Naidu and Reich (2007) studied the impact of San Francisco's

minimum wage law after it increased from $6.75 to $8.50 an hour in 2004, using a unique quasi-experimental research design. They surveyed a sample of restaurants before the wage increase, and then re-surveyed the same businesses nine to ten months after. The sample included restaurants from San Francisco as well as neighboring East Bay cities that were not covered by the policy, allowing the researchers to compare outcomes at restaurants affected by the minimum wage mandate with those that were not. The study also was able to compare outcomes at fast-food restaurants with outcomes at full-service restaurants.

After controlling for a variety of potential confounding factors, the authors found no statistically significant negative effects on either employment or the proportion of full-time jobs as a result of the San Francisco law. This finding holds for both full-service and fast-food restaurants (one might expect more sensitivity to a higher minimum wage in the latter). We show in Figure 2 the results from a follow-up study (Jacobs and Reich 2014). Restaurant employment in San Francisco rose slightly faster than in surrounding counties after the minimum wage increase, and again after San Francisco implemented two additional policies (paid sick leave and a health spending requirement).[5]

Potter (2006) studied the impact of Santa Fe's minimum wage law after it increased from $5.15 to $8.50 in 2004, a substantial increase of 65 percent (at that time, only businesses with 25 or more employees were covered). Potter also uses a quasi-experimental research design to compare changes in employment at Santa Fe businesses before and after the ordinance went into effect and to changes in employment in nearby Albuquerque over the same time period.[6] Potter found no statistically significant negative impact of Santa Fe's minimum wage increase on Santa Fe employment, both at an absolute level and relative to Albuquerque. This finding held for the most affected industries of accommodation and food services, which had the highest proportion of minimum wage workers. Potter did find a decline in construction employment in both cities, with the decline stronger in Santa Fe; he ascribes this finding to differences in the timing of an overall slowing of the region's construction boom.[7]

Finally, Schmitt and Rosnick (2011) studied the impact of the above two laws, comparing employment trends in these cities before and after their minimum wage increases to control

[5] Trends in overall employment in San Francisco closely matched those in the surrounding counties during the same time period, indicating that the differential trends in restaurant employment were not caused by differences in economic growth between the two areas. Restaurant closed in San Francisco at a 2.8 percent lower rate than in nearby areas not covered by the law. This difference, however, was not statistically significant.

[6] Albuquerque did not have a city minimum wage law at that time.

[7] In Santa Fe, net store closings were 1.1 percent higher in businesses covered by the law than among those that were not. This difference was not statistically significant.

groups of surrounding suburbs and nearby metropolitan areas.[8] The authors found no discernible negative effects on employment, even three years after the respective ordinances were implemented. The authors focused on fast-food restaurants, food services, retail trade, and other low-wage industries.

Several additional studies of Santa Fe and San Francisco have been produced by the restaurant industry-backed Employment Policies Institute. In a study of Santa Fe, Yelowitz (2005a, 2005b) found an increase in the probability of unemployment for low-skilled workers and evidence of replacement of low-skilled adults by teens. In his study of San Francisco, Yelowitz (2012) found the opposite result: a decrease in teen work hours and no discernible effect on overall employment.

Unfortunately, both studies suffer from serious methodological problems that make the results unreliable.[9] Since higher wages are likely to increase the labor supply, unemployment *rates* can increase even as the number of people who are employed also increases. Pollin and Wicks-Lim (2005) replicate Yelowitz's (2005a) study but look at employment, rather than unemployment. They find no negative impact on employment. Furthermore, even if the reported results for each of the studies held, total compensation for teens and low-skilled workers would still have increased. Any employment or hours reductions would be more than offset by the increase in hourly earnings (Pollin and Wicks-Lim 2005; National Employment Law Project 2012).

Evidence from state and federal minimum wage laws

If the findings of the small number of case studies discussed above are taken on their own, it would be difficult to draw broad conclusions about the impact of minimum wage laws. However, the results from studies of city and county minimum wage laws are corroborated by detailed research on state and federal minimum wage laws that provide a much larger sample of events to study.

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[8] The authors also examined the impact of the 1993 minimum wage law in Washington DC, but found that the size of the increase was too small to raise wages in those industries (too few workers were impacted). They conclude that the law therefore does not constitute a meaningful policy experiment.

[9] Detailed critiques of the studies were made by Pollin and Wicks-Lim (2005) and the National Employment Law Project (2012). Among other issues, the data used in the San Francisco study starts one year after the law was implemented and fails to capture pre-trends or the first year of implementation. The study compares San Francisco to 20 other "superstar" cities. As with Neumark and Wascher (2008), the results may be biased by underlying regional differences that are unrelated to minimum wage policies. Colla, Dow and Dube (2014) solve this problem by comparing trends in earnings and employment between a similar group of central cities and their peripheral counties from 2002 to 2010. They find no evidence that increasing the minimum compensation standard led to a decrease in employment in San Francisco.

Two innovative studies conducted by researchers from UC Berkeley, University Massachusetts-Amherst, and UNC-Chapel Hill are especially relevant (Dube, Lester and Reich 2010, 2013; Allegretto, Dube, Reich and Zipperer 2013). This research team looked at every state and federal minimum wage increase in the U.S. between 1990 and 2011 and identified several hundred pairs of adjacent counties that were located on different sides of a state border with a minimum wage difference.

This research design compares the employment trends of the most affected groups – teens and restaurants – across adjacent counties that were exposed to different minimum wage levels. It is therefore an excellent test of whether businesses relocate employment outside county borders to avoid being subject to a higher minimum wage. Using this research design, Dube, Lester and Reich (2010, 2013) and Allegretto, Dube, Reich and Zipperer (2013) find no statistically significant effects of minimum wage increases on either employment or hours in restaurants and other low-wage industries, controlling for a range of regional and local differences that previous research did not include.

Allegretto (2013) uses the same dataset to examine the effects of the subminimum wage for tipped workers (which has remained at $2.13 an hour at the federal level for more than two decades, but varies significantly across states). Focusing on restaurants, she finds no statistically significant evidence of negative employment effects in states with higher (or no) subminimum wages for tipped workers.

We highlight these studies because they combine state-of-the art econometric methods with the most detailed datasets available, allowing researchers to accurately control for differences in local economic conditions that could confound the analysis.

That said, the economics literature includes conflicting findings on the employment impacts of the minimum wage. Even if the employment impacts of minimum wage are zero, we would expect to find case studies clustered around that point, with some finding positive and others finding negative impacts (Schmitt 2013). However, most of the broader studies that find negative effects, as reviewed in Neumark and Wascher (2008), fail a fundamental necessary condition for identifying statistically unbiased estimates of minimum wage effects. The key issue is that their research design assumes that states that increase minimum wages are otherwise not different from those that do not increase minimum wages. Dube, Lester and Reich (2010) and Allegretto, Dube, Reich and Zipperer (2013) show that this assumption is incorrect. In the states that increased their minimum wages, employment among low-wage workers was already growing more slowly two years before the implementation of the minimum wage increases, compared to states that did not increase minimum wages. Existing

differences in regional employment trends that are unrelated to minimum wage policy can explain the differences in outcomes after the increases. As Allegretto, Dube, Reich and Zipperer (2013) document, local comparisons make sense because nearby areas are much more similar than areas that are farther away. And when minimum wage effects are estimated using local comparisons—such as across adjacent counties on a state border—the negative effect on employment disappears.[10]

Belman and Wolfson (2014) provide the most extensive summary of the minimum wage research since Card and Krueger. They conclude that the employment effects of the minimum wage in the United States are "both vanishingly small and not statistically significant in even the most generous test" (p. 168). A separate review of minimum wage research by Schmitt (2013) similarly finds "the minimum wage has little or no discernible effect on the employment prospects of low-wage workers."

Impact on which workers are hired

In his review of minimum wage research, Schmitt (2013) considers several channels through which employers might adjust to increases in the minimum wage. One possible scenario is that employers will simply switch to hiring more skilled workers, thereby hurting the employment prospects of less educated workers and, in particular, black and Latino teens. Schmitt reviews several studies that have explicitly researched this question, some of which yield conflicting findings. Again, research design matters a lot here, and studies that thoroughly control for regional or local differences do not find evidence of labor substitution. For example, Allegretto, Dube and Reich (2011) examine the impact of the minimum wage on the employment of white, black, and Hispanic teens, covering the period from 1990 to 2009. After improving on previous research by controlling for regional differences, they find no statistically significant negative effects on employment or hours for teens, regardless of race or gender. In their contiguous counties dataset, Dube, Lester and Reich (2013) similarly find no evidence of such substitution by either age or gender.

[10] A recent report by the Congressional Budget Office (2014) projects that a $10.10 national minimum wage would raise wages for 16 million Americans, lift 900,000 out of poverty, and result in a reduction in jobs of 500,000. The report claims to synthesize recent research on teen employment, but it does so without making adjustments for research quality. The CBO's estimated elasticity for adult employment is unsupported by the recent empirical research, including that of Neumark and Wascher (2008), which found no measurable employment impact for adults.

B. Impacts on firms' costs

The impact of minimum wages on the overall cost structure of a business varies significantly by industry. The impact of the minimum wage on a firm's operating costs will depend on the share of the workforce at or below the new minimum wage rate, their average wage before the increase, and the share of labor costs in total operating costs. Operating costs include not only labor, but also materials, rent, maintenance, supplies, taxes, utilities, and energy costs. An industry may have large numbers of low-wage workers, but if labor is a relatively small share of the total costs of the firm the wage increase will have a correspondingly small impact on the overall cost structure of the firm.

In a prospective study of the San Francisco minimum wage, Reich and Laitinen (2003) carried out a representative survey of establishments. They estimated that a 25.9 percent increase in the minimum wage from $6.75 to $8.50 would result in a 1.1 percent increase in the overall wage bill. When viewed from the perspective of operating costs, a 26 percent increase would result in 82.0 percent of establishments experiencing an increase in operating costs of less than 1 percent or more, and 95.2 percent experiencing an increase in operating costs of less than 5 percent. Breaking down results by industry, they estimated that 17.9 percent of restaurants would experience an increase in operating costs of 5 percent or more, as would 8.6 percent of retail establishments. For manufacturing, entertainment, hotel, and personal service firms, the estimated increase in operating costs was close to zero.

Pollin (2004) similarly estimated that the average increase in firms' costs relative to sales under Santa Fe's 2003 minimum wage ordinance would be 1 percent; the average cost increase for hotels relative to sales would be 3 percent.

Benner and Jayaraman (2012) analyzed the impact of a proposed increase in the federal minimum wage from $7.25 to $10.10 (a 39 percent increase, not accounting for inflation during the phase-in) on the food industry. They estimated a maximum increase in operating costs for the food service and drinking establishment industry of 2.25 percent over three years, and 1 percent in the retail food industry.

To put these results in context, consider the following hypothetical example of how a 10 percent increase in the minimum wage might affect costs in the restaurant industry. If one-third of restaurant workers were paid exactly the minimum wage or up to no more than 10 percent above the minimum wage (and if wages were evenly distributed), then these workers would receive a pay increase that would average half of the 10 percent increase in the statutory minimum. The increase in the wage bill would thus be one-third of 5 percent, or 1.67 percent.

Moreover, labor costs comprise about one-third of operating costs in the restaurant industry. A 10 percent increase in the minimum wage would therefore increase operating costs by one-third of 1.67 percent, or 0.56 percent. A larger minimum wage increase would imply a greater increase in costs. In the retail industry, the proportion of low-wage workers is lower than in restaurants; the proportion making exactly the minimum wage is also lower; and labor costs are only about 10 percent of operating costs (compared to about one-third in restaurants). So the effect on costs in the retail industry would be even smaller. The research results we summarized above are consistent with these hypothetical examples.

C. Impacts on prices

Since a higher minimum wage applies to all employers, a firm that serves the local market, like a restaurant, will be able to pass through a share of the higher costs without suffering a disadvantage relative to its competitors. Belman and Wolfson (2014) survey seven studies of price effects of the minimum wage, all of which found some impacts on prices in industries highly affected by the minimum wage, namely restaurants. Dube, Naidu and Reich (2007) found that restaurant prices in San Francisco rose 2.8 percent more than those in neighboring Alameda County, following the implementation of a 26 percent increase in the city's minimum wage law. Using a very small sample, Hirsch, Kaufman and Zelenska (2011) found that two-thirds of the cost increase for quick serve restaurants in Georgia and Alabama were offset by increases in price. Aaronson (2001) found that a 10 percent increase in the minimum wage results in a 0.7 percent increase in restaurant prices.

Price effects outside the restaurant industry are largely negligible. Benner and Jayaraman (2012) provide estimates of price impacts across industries for a $10.10 federal minimum wage increase. They estimate that if the entire cost were passed through to prices, restaurant prices would increase 2.5 percent over three years, retail food 1 percent, warehouse and storage and accommodations 0.7 percent, and administrative and support services 0.9 percent. In most other industries, price increases could not be detected.

When these small price increases are considered in the context of who receives the wage increases, research shows a redistribution effect towards lower income families. Jacobs, Graham-Squire and Luce (2011) estimated the impact of a $12 minimum wage for large retailers on employees and consumers. They found that if the entire cost were passed through to consumers, Wal-Mart would increase prices 1.1 percent. The increased costs would be shared by consumers across the income spectrum, with 28.1 percent borne by shoppers in lower income households. By contrast, they found that the increase in workers' earnings would

be large and concentrated, with 41.4 percent going to workers in families with incomes below 200 percent of the federal poverty line.

D. Impact on employee turnover

The relationship between low wages and high employee turnover is well documented (Cotton and Tuttle 1986). In 2011, 37 percent of food service workers and workers in hotels and accommodations voluntarily quit their jobs (Boushey and Glynn 2012). In an extensive study of minimum wage impacts on employment flows, Dube, Lester and Reich (2013) found that a 10 percent increase in the minimum wage results in a 2.1 percent reduction in turnover for restaurant workers and a 2.0 percent reduction in turnover for teens. Dube, Naidu and Reich (2007) found an increase in the average tenure of workers in limited-service restaurants of three and a half months.

Three studies analyzed the impact of living wage laws on employee turnover. A study of the Los Angeles Living Wage Ordinance (Fairris 2005) found a 35 percent reduction in turnover in firms that increased wages as a result of the law, with an average increase of 23 percent. Reich, Hall and Jacobs (2005) found an overall decrease in turnover at the San Francisco International Airport of 60 percent for firms that were highly impacted by mandated pay increases. Turnover of airport screeners fell by 80 percent following a 55 percent wage increase, from $5.75 to $10 per hour. Howes (2005) found a 17 percent decrease in turnover following a 13 percent wage increase for homecare workers in San Francisco. Putting the living wage studies together, Jacobs and Graham-Squire (2010) estimate that for every 1 percent increase in wages in low-wage service positions, turnover declines by an average of 1.45 percent. The impact may be smaller for broad minimum wage laws where all employers in a market increase their wages at the same time and the wage difference between firms remains the same (Manning 2011).

Employers incur significant costs from employee turnover. This includes both direct costs for recruitment, selection, and training of workers and the indirect costs associated with lost sales, poor customer relations, and lost productivity as new workers learn on the job. The cost of worker replacement varies based on compensation, firm size, and skill level of the job. Hinkin and Tracey (2000) conducted a detailed study of non-managerial staff at four hotels, two in Boston and two in Chicago. Taking into account both direct and indirect costs, they estimated replacement costs ranging from $1,322 for room service wait staff and $2,077 for a line cook to $7,658 for an administrative assistant in sales and catering. A study of the cost of supermarket turnover by the Coca Cola Research Council estimated the replacement cost for an $8 an hour non-union worker at $4,199 (Blake 2000). Boushey and Glynn (2012) find that the median cost of replacement for jobs paying $30,000 a year or less is 16.1 percent of an employee's annual

salary. A statistical analysis of California businesses by Dube, Freeman and Reich (2010) obtained similar results. Jacobs and Graham-Squire (2010) estimate that 18 percent of the costs of a wage increase for school cafeteria workers would be offset by lower turnover costs.

E. Impacts on firms' operations and productivity

A higher minimum wage may reduce costs through additional channels that improve firm performance. In a small case study of quick service restaurants in Georgia and Alabama, Hirsch, Kaufman and Zelenska (2011) suggest how firms adjust to higher wage mandates. These authors analyzed detailed payroll data and also surveyed managers and employees about human resource practices. The authors found no negative effect from the minimum wage increase on employment or hours worked. Managers reported they could offset 23 percent of the labor cost increase through operational efficiencies. Ninety percent of the employers reported they had or would increase performance standards, including requiring better attendance, requiring more proficient and faster performance of job duties, having workers take on additional tasks, and more quickly terminating workers who were not performing. Managers reported economizing on non-labor inputs, including water, electricity, and food wastage.

Reich, Hall and Jacobs (2005) surveyed employers and employees at the San Francisco International Airport following the implementation of higher mandated compensation standards. Employers reported improvements in overall work performance (35%), employee morale (47%), absenteeism (29%), reductions in grievances (45%), reductions in disciplinary issues (44%), improvements in equipment maintenance (29%), reductions in equipment damage (24%), and improvements in customer service (45%). Employees reported that more skills were required of them (50%), that they were working harder on the job (44%), that they were experiencing greater stress on the job (43%) and that the pace of work had increased (37%).

F. Impacts on retail businesses

The retail industry is the second most intensive user of minimum wage and near-minimum wage workers (after Accommodation and Food Services). A few studies have examined the effects of minimum wages on the retail sector. In her research on the retail industry, Zeynep Ton (2012) finds that highly successful retail chains "not only invest heavily in store employees but also have the lowest prices in their industries, solid financial performance and better customer service than their competitors." Using *County Business Patterns* data and their border-county pair research design, Dube, Lester and Reich (2010) found no negative effects of

minimum wages on retail employment. In a related study, Dube et al. (2006) compared the number of national retailers operating in San Francisco before and after the city minimum wage policy was implemented. They found that the number of top retailers grew, as did the number of stores. Overall retail employment did not decline in San Francisco or Santa Fe, nor did employment in individual retail sectors, such as grocery stores, general merchandise stores, or clothing and accessories.[11]

G. Impacts on health benefits and pensions

If employers are required to increase their wages, they may compensate by reducing other benefits. For this reason, some of the local minimum wage laws count contributions towards health care towards meeting the minimum compensation requirement. Schmitt (2013) summarizes the empirical research, finding "small or no effects along these lines," either on the receipt of health insurance, on provision of family health insurance, or whether or not the employer paid the full premium. Dube, Naidu and Reich (2007) did not detect any decrease in the provision of health benefits in restaurants in San Francisco.[12] Belman and Wolfson's (2014) detailed survey of minimum wage research found that the evidence was "thin," and that any effect on health insurance provision was concentrated in smaller firms. They find no impact on employer-provided pensions, which is not surprising given that this benefit is rare among low-wage workers. Since the provision of employment-based health benefits are closely correlated with wage, effects could be larger at higher minimum wage rates.

7. Conclusion

In 1994 David Card and Alan Krueger published a groundbreaking study that changed how many economists view the minimum wage. Card and Krueger (1994) looked at employment in fast-food restaurants across the New Jersey and Pennsylvania border after New Jersey increased its state minimum wage. They found no measurable negative impact on employment. As we reviewed above, a large body of research has since built upon their methodology. As a result, we have learned a great deal about how employers respond to increases in the minimum wage.

First, paying workers more can change their work performance. It can change their productivity, their attitude about their job, how hard they work, and their ability to make it to the job on time. Second, low-wage labor markets have high levels of job churning. Turnover levels are high as workers leave jobs looking for better wages or because they are unable to stay in their

[11] However, data were not available for comparisons to areas not covered by the minimum wage policy.
[12] Their surveys were carried out sufficiently prior to San Francisco's proposal to establish an employer minimum health spending requirement to avoid any contamination of the results.

jobs due to poverty-related problems such as difficulties with transportation, child care, or health. As a result, rather than eliminating jobs, raising the minimum wages can reduce turnover and increase job stability. Third, firms can absorb higher labor costs through other means as well. They can pass on some of the increased costs to consumers through higher prices or earn lower profits. In short, firms use a combination of strategies to adjust to higher minimum wages without cutting jobs or hours (Schmitt 2013).

Nonetheless, it is important to emphasize again that the existing research literature is necessarily limited to the range of minimum wage increases that have been actually been implemented. While these studies are suggestive, they cannot tell us what might occur when minimum wages are increased significantly beyond existing local, state, or federal mandates.

Finally, raising the minimum wage is not a cure-all, especially in the face of larger forces generating inequality that require national attention. Still, our assessment of the research evidence is that these policies have worked well. They raise the incomes of low-wage workers and their families. The costs to businesses are absorbed largely by reduced turnover costs and by small price increases among restaurants. Additional benefits, such as reduced spending on public assistance programs and the local stimulus of additional spending by low-income families, might also occur. But we do not yet have enough definitive research on these effects.