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Abstract:

Minimum wage laws have become a key political issue, following on the heels of over 130 successful living wage campaigns around the country. In the debates surrounding these mandated wage floors, one recurring issue has been whether the legislation has wider-ranging impacts on wages than the legally-required raises alone. Advocates on both sides of the debate dispute the potential magnitude of 'ripple effects'- the non-mandated raises given by employers to maintain a similar wage hierarchy before and after a change in the wage floor. These ripple effects have the potential to greatly expand the overall impact of mandated wage floors. This study uses data from twenty years of the Current Population Survey to assess the magnitude of ripple effects in the context of variations in minimum wage laws, and looks specifically at the retail trade sector to model the potential magnitude of ripple effects under living wage ordinances, where the 'bite' of the legislation would encompass a larger share of the workforce.

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Keywords: ripple effect, wage spillover, wage norms, minimum wage, living wage, wage distribution, retail trade, low wage

Mandated Wage Floors and the Wage Structure:

New Estimates of the Ripple Effects of Minimum Wage Laws

Introduction

Statewide minimum wage ballot initiatives have made minimum wage laws a key political issue for the 2006 mid-term elections. These political campaigns follow on the heels of over 130 successful living wage campaigns to enact municipal-level wage minimums in the last ten years. Moreover, the relatively high wage floors set by living wage laws (nearly double minimum wage levels, on average) distinguish them from most minimum wage laws, raising the stakes of winning or losing these political fights (Brenner and Luce, 2005). This recent upsurge of interest in establishing new and higher wage floors has recharged the academic, as well as, political debate around the economic impact of mandated wage floors.

One reoccurring issue in these debates is whether mandated wage floors have a more wide-ranging impact on wages than the legally-required raises alone. In response to new wage minimums, some employers give non-mandated raises, or "ripple effect" raises, in order to maintain a similar hierarchy of wages before and after the change in the wage floor. By expanding the number of workers who receive raises, these ripple-effect raises have the potential to considerably change the overall impact of mandated wage floors.

Both sides of the political debate around mandated wage floors have a stake in arguing that ripple effects are both large and small. Large ripple effects allow proponents

to argue that mandated wage floors have an even greater potential to reduce poverty by expanding the number of beneficiaries. Opponents, however, can argue that large ripple effects seriously intensify the economic strain on employers from such laws. Small ripple effects enable proponents to minimize estimates of the economic costs to employers of mandated wage floors. But, likewise, small ripple effects allow opponents to minimize their estimated benefits. Regardless of one's political position, understanding the extent and size of ripple effects is an important part of evaluating mandated wage floors.

Past research on mandated wage floors does not provide a clear picture of the size and extent of ripple effects. I attempt to fill this gap by providing detailed empirical estimates of the ripple effects produced by state and federal minimum wage increases in the United States from 1983-2002 using Current Population Survey (CPS) data.

I find that adding ripple-effect raises to mandated raises dramatically increases the number of minimum wage beneficiaries. These raises substantially increase the costs of minimum wage increases to employers: the average ripple effect "multiplier" is 2.5, meaning that the total cost increase from a minimum wage increase—including both mandated and ripple-effect raises—is 250 percent of the cost increase from mandated raises only. This occurs even though the extent of ripple effects is limited. Raises from ripple effects only extend up to workers earning 123 percent of the minimum wage prior to the increase.

I also look at the special case of the retail trade industry[1] where minimum wage workers are concentrated. If mandated raises from a minimum wage increase impacts the

[1] Because of the conversion from the SIC to NAICS industry classification system in 2003 in the CPS, retail trade includes different industries prior to 2003 than in the years 2003 and on. In particular, prior to 2003, retail trade included "Eating and Drinking places." The NAICS system introduced a new category,

retail trade wage structure more dramatically than in any other industry, do retail trade employers also make more dramatic adjustments to their wage scales through ripple-effect raises? I find that retail trade employers do not make more extensive adjustments despite the stronger "bite" of the minimum wage in this industry. Instead, mandated raises make up a larger proportion of the overall cost increases faced by employers than ripple-effect raises. The ripple-effect multiplier in retail trade is smaller at 1.9 than in the general case.

Accounting for ripple effects also changes the demographic profile of minimum wage beneficiaries. Adult workers with greater financial responsibilities in their families make up an even larger majority of minimum wage beneficiaries when ripple effects are accounted for, increasing from 61 to 69 percent.

These ripple effect estimates provide an important insight into the likely impact of the increasingly popular living wage laws. The retail trade analysis indicates that when a mandated wage floor has a stronger bite, the ripple-effect multiplier shrinks. Because living wage laws have an even stronger "bite" among covered employers than in the case of minimum wage laws among retail trade employers, the results of this research suggests that the cost increases that employers bear (and the wage benefits that workers obtain) from living wage laws will be primarily from mandated raises rather than ripple-effect raises. This insight provides a much needed guideline for assessing the economic impact of living wage laws.

What are Ripple Effects?

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separate from retail trade called "Accommodation and Food Services" that includes "Food Services and Drinking Places." Retail trade in this paper refers to the SIC industry category.

Ripple effects are the raises that employers feel compelled to give workers beyond those legally required when a mandated wage floor is increased. Consider this basic scenario: If the current $5.15 federal minimum is increased to $6.15, employers are legally required to raise the wages of all covered workers earning less than $6.15. However, without a ripple effect, workers earning $6.15 prior to the minimum increase will fall in their relative wage position: their wage position falls from $1.00 above the bottom of the wage structure to the bottom of the wage structure. Moreover, these workers will be earning the same wages as workers who had previously earned inferior wages. Such a fall in relative wage position could damage worker morale, and therefore, productivity. To avoid this, employers extend raises above the wage floor to maintain a consistent wage hierarchy. As a result, workers earning $6.15 prior to the increase may receive a "ripple effect" raise to keep their wage position above the bottom of the wage structure.

Ripple effects may alternatively be caused by employers substituting low-skilled workers with high-skilled workers. In response to an increase in the wage floor, employers may increase their demand for high-skilled workers who typically earn wages above the minimum. This increased demand for high-skilled workers can push their wages upwards. Consequently, not only are the wages of workers earning the minimum receiving raises but so too are workers at higher wage rates. Regardless of the cause, minimum wage increases have the potential to raise the wages of more jobs than those bound by the minimum through ripple effects.

The Extent and Size of Ripple Effects

This study advances beyond past research by providing detailed estimates of the extent and size of ripple effects while controlling for macroeconomic trends and changes in workforce composition.[2,3] Specifically, I use Current Population Survey data from 1983 to 2002 and regression analysis to estimate how state and federal minimum wage changes impact wage growth at various points of states' wage distributions as defined by wage percentiles.

The regression estimates indicate that the extent of the ripple effect is limited to a narrow band of wages above the minimum wage and that the raises quickly diminish the higher the worker's wage rate. The impact of minimum wage increases is strongest at the 5th wage percentile which is, on average, equal to the minimum wage (see figure 1). The estimated wage elasticity of 0.44 indicates that for every 10 percent increase in the minimum wage, the 5th wage percentile increases 4.4 percent. Take for example, the last federal minimum wage increase of 1997 from $4.75 to $5.15, an eight percent increase. Workers earning wages around the old minimum of $4.75, on average, received a raise of four percent (0.08 x 0.44 = 0.35), or $0.17, to $4.92 (see table 1).

Why doesn't the fifth wage percentile reflect increases equivalent to the minimum wage increase (i.e., have a wage elasticity of one)? Because the 5th wage percentile drifts

[2] The regression analysis allows for both contemporaneous and lagged minimum wage effects on the wage percentiles.

[3] Neumark, Schweitzer and Wascher (2004) also offer a serious attempt to address these weaknesses. Using regression analysis, they estimate how minimum wage changes affect wage growth across the wage distribution during 1979-1997. Unfortunately, their study likely produces unreliable results because their model specification appears to exacerbate the measurement error in their wage measure (see Wicks-Lim (2005) for a full critique of their methodology). Consequently, their unlikely results—such as a positive minimum wage effect on the wages of workers earning very high wages and a negative minimum wage effect for almost every segment of the wage distribution one year after a minimum wage increase—appear to reflect problems in their methodology.

above and below the minimum wage over time and across states, the wage elasticity reflects an average of the wage responses to minimum wage changes among a combination of sub-minimum wage workers, minimum wage workers, and workers earning wages very close to, but above, the minimum wage. From other analyses not presented here, I found that sub-minimum wage workers do not receive wage raises equal to minimum wage increases.[4] Workers earning wages very near but above the minimum do not require equivalent wage increases to minimum wage increases to meet or exceed the new minimum. These two influences push the wage elasticity of the 5th wage percentile below one. While those workers earning exactly the minimum wage likely move in tandem with the minimum wage, the workers earning wages *around* (i.e., above and below) the minimum move less than the minimum wage.

Workers with wages around the 10th wage percentile receive, on average, a 2.5 percent increase for every 10 percent increase in the minimum (i.e., a wage elasticity of 0.25). The 10th wage percentile is typically 115 percent of the minimum wage prior to the increase. Applying this to the 1997 federal minimum increase, workers earning around $5.22 got two percent raises (0.025 x 0.08 = 0.02), roughly ten cents to $5.32.

The highest point in the wage distribution with a detectable impact from minimum wage changes is the 15th wage percentile. Since there is no detectable impact at the 20th wage percentile, the 15th wage percentile approximates the lower-bound of the ripple effect's upper limit. Workers with wages around the 15th wage percentile typically earn 123 percent of the minimum wage. These workers receive, on average, a 1.4 percent raise for every 10 percent increase in the minimum wage (i.e., a wage elasticity of 0.14).

[4] One reason for this is that some sub-minimum wage workers are subject to tip credit allowances which do not automatically change when minimum wage levels are changed.

The eight percent federal minimum increase in 1997 produced a one percent raise for workers earning around $5.74 (0.14 x 0.08 = 0.01), or seven cents, to $5.81.

These estimates indicate a compressed wage distribution after the minimum wage increase. In the wage distribution after the minimum wage increase, the 15th wage percentile sits within about 65 cents of the $5.15 wage floor. Prior to the minimum wage increase, the 15th wage percentile was almost one dollar higher than the $4.75 wage floor.

The Overall Impact of Ripple Effects

Despite the limited extent of ripple effects, these wage raises nevertheless considerably expand the overall impact of minimum wage increases. This result is driven by the fact that the number of workers with wages just above the minimum greatly outnumbers workers earning the minimum. To illustrate, I present in table 1 estimates of the wage raises that occurred in response to the 1997 federal minimum wage. The third column presents the number of workers that earned wages around the 5th, 10th, and 15th wage percentiles prior to the federal minimum increase. Since the 5th wage percentile sits right at the minimum wage level, these workers are assumed to receive mandated raises. Based on this example, almost triple the number of minimum wage workers (those earning wages around the 5th percentile) earned wages around the 10th and 15th wage percentiles. In other words, the high concentration of workers near but above the minimum wage produces a large ripple effect.

To provide a measure of how important the ripple effect is in the overall impact of minimum wage increases, I calculated a "ripple-effect multiplier" (see table 1). To do

this, I estimated the total change in employers' annual wage bills caused by the 1997 federal minimum wage increases due to mandated raises and ripple-effect raises separately. The ripple-effect multiplier then quantifies how much the ripple-effect raises multiply the change in employers' annual wage bills from mandated wage raises alone. Specifically, I multiplied the number of workers that earned wages around each wage percentile (column 3) by their average raises as estimated by the regression analysis (column 4), their average hours per week (column 5) and their average weeks worked per year (column 6).

I estimate that employers responded to the federal minimum wage increase by providing roughly 4 million workers with $741 million in mandated raises (column 7). Ripple effects provide another 11.5 million workers with $1.3 billion dollars in raises (column 8), nearly quadrupling the number of minimum wage beneficiaries and almost tripling the overall increase to employers' annual wage bills. In other words, with regard to the overall change in the wage bill, ripple effects multiply the cost increase to employers by 270 percent ((741.0+1280.3)/741.0) producing a ripple-effect multiplier of 2.7. Similar calculations based on the other three federal minimum wage increases of the 1990s produce an average ripple-effect multiplier of 2.5.

Is the Ripple Effect Stronger When the Minimum Wage Has a Stronger "Bite"?

To examine whether minimum wage increases with a stronger "bite" produce stronger ripple effects, I did a separate regression analysis on retail trade workers. I focused on the retail trade industry because a greater proportion of retail trade workers

earn the minimum wage than in any other industry. In 2002, for example, the Bureau of Labor Statistics reported that three percent of all workers paid hourly earned wages at or below the federal minimum. Among hourly-wage workers in the retail trade industry the proportion is more than twice as high at eight percent. Clearly, the minimum wage has a stronger "bite" in the retail trade industry compared to other industries. If a minimum wage increase requires retail trade employers to give a higher proportion of workers mandated raises as compared to other employers, retail trade employers may also need to make more extensive adjustments to their wage scales in the form of ripple-effect raises.

The impact of minimum wages in the retail trade industry has virtually the same pattern as that found for the entire economy, both in terms of extent and magnitude (see figure 2). Instead of producing a qualitatively different effect, the high concentration of minimum and near minimum wage workers in the retail trade industry provides a more detailed view of the minimum wage effect because each wage percentile characterizes a narrower range of wages.[5] As a result, the high wage elasticity of 0.73 for the 10^{th} percentile of the retail trade industry is a more precise estimate for minimum wage workers than the lower wage elasticity of 0.44 for the 5^{th} wage percentile across industries.

The limited extent of the ripple effect in combination with a relatively high concentration of minimum wage workers in the retail trade industry suggests that ripple-effect raises will contribute less to the overall impact of minimum wage increases in this

[5] To see this, consider that the 10th wage percentile is equal to, on average, 99 percent of the minimum wage. The 15th wage percentile, the next percentile for which I produce estimates for, is only four percentage points higher than the 10^{th} wage percentile in terms of its position relative to the minimum, at 103 percent of the minimum wage. Across industries, the 5th wage percentile—the percentile closest to the minimum—is, on average, 100 percent of the minimum wage. The 10th percentile, the next percentile for which I produce estimates for, is much further from the minimum than the 5th wage percentile, at 112 percent of the minimum wage.

industry. In table 2, I repeat the calculations of table 1 for the retail trade industry only. As expected, the heavy concentration of workers at the wage floor in this sector diminishes the size of the ripple-effect multiplier to 1.6. Similar calculations for the other three federal minimum wage increases of the 1990s suggest an average ripple-effect multiplier for the retail trade industry of 1.9.

The Impact of Ripple Effects on Cost Increases to Businesses

The actual economic impact of the costs increases associated with minimum wages can only be assessed when put into context with some measure of businesses' capacity to absorb these costs. One way to evaluate this capacity is to compare the increased costs to businesses' sales revenue. I did such a comparison in a 2004 study with Robert Pollin and Mark Brenner of the economic impact of proposed $6.15 state minimum wage in Florida, increasing the effective minimum wage by one dollar from the federal minimum of $5.15. We estimated the associated cost increases of the minimum wage proposal for both mandated and ripple-effect raises as a percentage of businesses' sales revenue. The estimated ripple effects were of a similar, though somewhat larger, magnitude as those reported in this current study.

We found that, on average, the total cost increases associated with the Florida minimum wage proposal amounted to less than one percent of a business' sales revenue. The mandated raises alone accounted for less than one-half of one percent of businesses' sales revenue. Viewed in this context, it is clear that the large multiplier effect of ripple-effect raises basically does not change the economic burden of minimum wage laws on

businesses. If the typical business in Florida wanted to cover fully the total costs of the minimum wage increase through price increases, they would have to raise their prices by less than one percent. This is true, even though the number of workers receiving ripple-effect raises in Florida was 550,000, nearly double the 300,000 workers receiving mandated raises under the $6.15 proposal.

The Impact of Ripple Effects on the Demographic Profile of Minimum Wage Beneficiaries

These minimum wage ripple effect estimates adds new insight in the debate over whether the benefits of minimum wage laws are well targeted. A longstanding critique of using minimum wage laws to reduce poverty is that some minimum wage beneficiaries are secondary earners (wage earners that do not contribute a large share to their family's income). If ripple effects almost triple the number of workers affected by minimum wage increases, the demographic profile of minimum wage beneficiaries may change dramatically when ripple-effect raises are considered.

Table 3 provides one illustration of how the demographic profile of affected workers can change when ripple-effect raises are taken into account using the 2000-2002 Annual Social and Economic Supplements of the CPS.[6] The first column presents the average demographic characteristics of workers earning wages around the 5th wage percentile in 2000 ($5.50, averaged across states). These workers would most likely receive only mandated raises if the federal minimum rose by 13.4 percent—the same

[6] These years are chosen in order to pick a point in time that is neither very close to nor very far from a federal minimum wage increase because the type of workers near the bottom of the wage distribution may be affected by the relatively high or low real value (respectively) of the federal minimum.

amount as in 1990—to $5.85. In the second column, I present the demographic characteristics of all workers expected to receive wage increases due to a minimum wage increase, i.e., workers earning up to $7.15, just beyond the average 15th wage percentile in 2000 ($6.83, averaged across states).

The most striking difference between the two demographic profiles is the fall in the proportion of teenagers and traditionally-aged students (16 to 24 years old)—the types of workers usually identified as secondary wage earners. The proportion of teenagers falls from 33 percent to 25 percent and the proportion of traditionally-aged students falls from 31 percent to 24 percent. Expanding the scope of minimum wage effects to include ripple effects substantially reduces the overall proportion of these young workers from 39 percent to 31 percent among the expected beneficiaries of a minimum wage increase. This demographic shift reflects a greater presence of primary wage earners among affected workers when ripple-effect raises are taken into account. The average worker's contribution toward his/her family's income is higher among all affected workers (39 percent) than among only workers expected to receive mandated raises (34 percent), a statistically significant difference.

Implications for Living Wage Laws

These results also provide insight into the likely role of ripple effects in the context of living wage laws. Living wage laws typically call for much higher wage floors than state and federal minimum wage laws because their levels are explicitly tied to wage rates that provide a "livable income" such as the federal poverty-level income threshold

for a family of three. Minimum wage rates, on the other hand, are not. The difference between these two types of mandated wage floors is dramatic: Living wage laws typically raise the wage floor to levels that are almost twice as high federal and state minimum wages. For example, the current New Mexico state minimum wage is set at $5.15, equivalent to the federal rate. In the city of Santa Fe, New Mexico, however, a citywide living wage rate is set at $9.50, 84 percent higher than the state minimum.

Do the higher wage minimums of living wage laws, relative to state and federal minimum wage laws, cause employers to provide more extensive ripple-effect raises? The estimates from the retail trade analysis partly answer this question. Similar to the case of retail trade, living wage laws require that a significantly larger proportion of workers receive mandated raises than in the general case of minimum wage laws. For example, when Santa Fe's living wage was originally set at $8.50 in 2004, Pollin (2003) estimated that 16.4 percent of Santa Fe's workforce would receive mandated wage raises—more than four times the percentage of workers likely to receive mandated wage raises from a federal minimum wage increase (see table 3). Based on the retail trade analysis, I found that this factor does not produce more extensive ripple effects. The implication for living wage laws is that their higher wage minimums will not produce more extensive ripple effects than those found in the case of minimum wage laws.

In fact, because many more workers of covered employers receive mandated raises from living wage laws than minimum wage laws, the role of ripple-effect raises in the overall impact of living wage laws should be smaller than in the case of minimum wage laws. In other words, the cost increases that employers face (and the wage benefits that workers receive) from living wage laws will likely be primarily due to mandated

raises rather than ripple-effect raises, converse the general case of minimum wage laws. As a result, a reasonable guideline for assessing the economic impact of living wage laws is that ripple-effect raises will make up a smaller—probably significantly smaller—proportion of the overall change in the wage bill than in the case of minimum wage laws.

There are a couple reasons why living wage laws may produce ripple effects that behave differently from the ripple effects estimated from minimum wage laws. First, the workers just above the higher living wage levels (reaching as high as $15.52 in Burlington, Vermont) may have greater bargaining power than workers just above minimum wage levels (the highest is only $7.63 in Washington state), and thus better able to obtain raises when a living wage law is enacted. In that case, living wage laws may produce more extensive ripple effects because different *types* of workers—perhaps more skilled or more unionized—sit just above the new wage floor.

Second, living wage laws typically cover only employers with financial ties to their municipal government, such as city contractors. As a result, the coverage of living wage laws is typically no more than two percent of workers within a city (Neumark and Adams, 2003). Minimum wage laws tend to have virtually universal coverage. This aspect of living wage laws introduce the possibility of ripple effects *across* firms in addition to ripple effects up the wage scale within covered firms. Employers who are not covered by living wage laws may increase the wages of their workers as they compete for workers within the same local labor market as covered employers. This additional source of ripple-effect raises may cause the ripple effect to larger than suggested by the above analysis.

However, the empirical evidence thus far supports the conclusion that the ripple-effect multiplier from living wage laws will tend to be much smaller than that of minimum wage laws. Two case studies, one of San Francisco's living wage law, and the other of Los Angeles' living wage law, suggest that ripple-effect raises added only 13 to 35 percent to the cost increases from mandated raises (Reich, Hall, and Jacobs, 2003; Fairris, Runsten, Briones, and Goodheart, 2005).

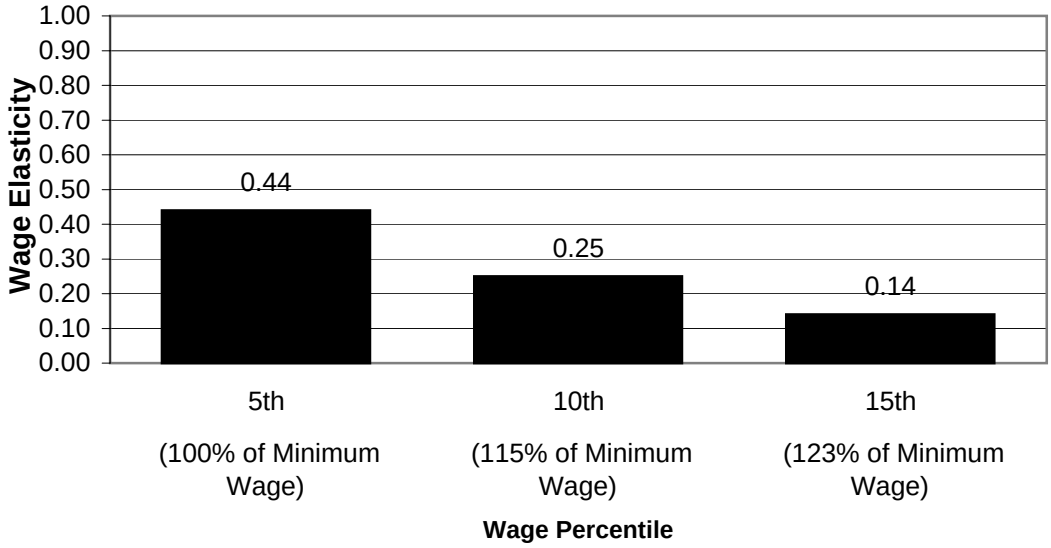
Conclusion

This research brief presents the results of new research on the question of whether mandated wage floors have a wider impact on wages—through ripple effects—than required by law. The results suggest that ripple effects have the potential to change dramatically the overall impact of mandated wage floors. However, how much ripple-effect raises contribute to the overall impact of mandated wage floors varies.

In the case of minimum wage laws, ripple-effect raises can as much as triple the costs associated with a minimum wage increase and nearly quadruple the number of workers who benefit from such an increase. However, because the cost of legally-required raises—as measured as a percentage of businesses' sales revenue—is so small, adding ripple-effect raises to the overall costs associated with minimum wage increases still generally represent a very small cost burden for employers. Ripple effects do tend to make minimum wage laws somewhat better targeted. With ripple effects, the pool of minimum wage beneficiaries includes more low-wage adult workers and fewer teenage and traditionally-aged student workers.

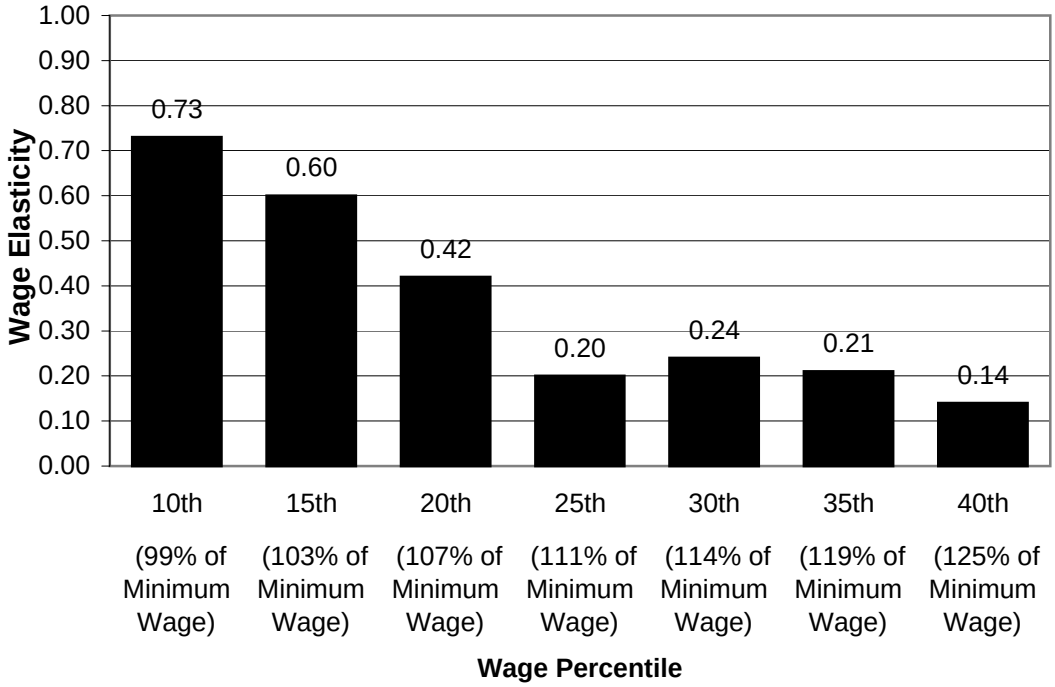
The minimum wage ripple effect estimates suggest that the case of living wage laws—with their much higher wage floors—is different. In particular, the analysis of minimum-wage ripple effects within the low-wage retail trade industry provides a look at what happens when a change in the mandated wage floor has a more dramatic impact on the wage structure through mandated raises alone—similar to living wage laws—than the general case of minimum wage laws. I find that the minimum wage does not produce a more dramatic ripple effect even though it has a stronger "bite" in retail trade. In fact, in retail trade, mandated wage raises are more prevalent than ripple-effect raises. Consequently, the ripple-effect multiplier is smaller when the minimum wage has a stronger "bite." This result implies an even smaller ripple-effect multiplier in the case of living wage laws which have an even stronger "bite" among covered employers than in the case of minimum wage laws and retail trade employers. In other words, living wage laws should be expected to generate cost increases for employers, as well as the wage benefits for workers, mainly through mandated wage increases rather than ripple-effect raises, converse the general case of minimum wage laws.

Figure 1: Estimated Wage Elasticities by Wage Percentile
All Industries



Source: Current Population Survey, 1983-2002.
Notes: Wage effects combine immediate and lagged minimum wage effects. For a full methodological discussion see Wicks-Lim 2005. Refinements to that analysis to control for spurious results cause the estimates to vary slightly from original results.Details may be obtained from author by request.

Figure 2: Estimated Wage Elasticities by Wage Percentile
Retail Trade Industry Only



Source: Current Population Survey, 1983-2002.
Notes: See Figure 1.

Table 1: Estimate of the Ripple-Effect Multiplier, All Industries

Based on Federal Minimum Wage Increase of September 1997: $4.75 to $5.15

(1) Wage percentile	(2) Average wage before[a]	(3) Number of workers (thousands)[b]	(4) Average raise due to minimum wage increase[c]	(5) Average hours worked/ week before change[d]	(6) Average weeks worked/ year[e]	(7) Mandatory raises (millions of dollars)	(8) Ripple-effect raises (millions of dollars)
5th	$ 4.73	3,982	$ 0.17	28.0	39	$ 741.0	$ -
10th	$ 5.22	6,118	$ 0.10	30.5	40	$ -	$ 757.5
15th	$ 5.74	5,385	$ 0.07	32.5	43	$ -	$ 522.7
						$ 741.0	$ 1,280.3
						Multiplier =	2.7

Source: Current Population Survey, 1997.

Notes: [a]Average wages are estimated from workers earning between the wage percentile ± 2. For example, the average wage of workers for the 5th wage percentile is based on workers earning above the 3rd wage percentile and below the 8th percentile."Before" refers to January to June, 1997. [b]Number of workers is estimated from the same sample of workers as the average wages. [c]Average raise based on wage elasticities presented in figures. [d]Average hours are estimated from the same sample of workers as the number of workers. [e]Average weeks worked per year estimates are not available from the CPS ORG data. Instead, approximations were taken from analysis presented in Table 3; see notes to Table 3.

Table 2: Estimate of the Ripple Effect Multiplier, Retail Trade Industry

Based on Federal Minimum Wage Increase of September 1997: $4.75 to $5.15

(1) Wage percentile	(2) Average wage before[a]	(3) Number of workers (thousands)[b]	(4) Average raise due to minimum wage increase[c]	(5) Average hours worked/ week before change[d]	(6) Average weeks worked/ year[e]	(7) Mandatory raises (millions of dollars)	(8) Ripple-effect raises (millions of dollars)
10th	$ 4.26	610	$ 0.26	26.6	39	$ 162.3	$ -
15th	$ 4.70	786	$ 0.23	24.4	39	$ 173.2	$ -
20th	$ 4.97	779	$ 0.17	26.2	39	$ 135.4	$ -
25th	$ 5.11	1,130	$ 0.08	27.4	40	$ 102.1	$ -
30th	$ 5.31	1,083	$ 0.10	28.4	40	$ -	$ 126.5
35th	$ 5.56	948	$ 0.09	29.1	43	$ -	$ 111.9
40th	$ 5.86	923	$ 0.07	31.9	43	$ -	$ 83.8
						$ 573.1	$ 322.2
						Multiplier=	$ 1.6

Source: Current Population Survey, 1997.

Notes: See notes to Table 1. Samples from the retail trade industry are too small to provide reliable estimates for the 5th wage percentile.

Table 3: Demographic Profiles of Workers in 2000

	Total	Workers expected to receive mandated raises only from hypothetical Federal minimum increase $5.15-$5.85	All workers expected to receive raises from hypothetical Federal minimum increase $5.15-$7.15
Individual Characteristics			
Average Hourly Wage	$16.27	$5.52	$6.17
	(0.03)	(0.00)	(0.00)
Student and 16-24 yrs. old	6.5%	31.1%	24.0%
	(0.06)	(0.72)	(0.37)
Teenager	6.8%	33.3%	25.4%
	(0.06)	(0.72)	(0.37)
Student or Teenager	8.6%	38.7%	30.6%
	(0.07)	(0.73)	(0.39)
Non-white	24.5%	29.7%	30.3%
	(0.00)	(0.62)	(0.35)
Female	48.2%	57.5%	58.3%
	(0.00)	(0.69)	(0.38)
No High School Diploma	13.8%	37.3%	32.0%
	(0.00)	(0.38)	(0.36)
Age	38.2	30.1	32.1
	(0.03)	(0.21)	(0.12)
Usual hours worked/week	39.3	30.6	32.7
	(0.03)	(0.18)	(0.10)
Family Characteristics			
Family Income	$66,623	$47,981	$46,348
	(139.70)	(716.07)	(373.37)
Worker's Earnings as % of Family Income	60.8%	33.9%	38.9%
	(3.60)	(0.48)	(0.30)
Severely Poor (Federal Poverty Level)	5.4%	17.1%	14.3%
	(0.06)	(0.52)	(0.27)
Low-Income (200% Federal Poverty Level)	18.5%	45.5%	44.9%
	(0.09)	(0.69)	(0.38)
Number of Workers (in millions)	134.8	4.8	14.4
% of Workforce	100%	3.6%	10.7%

Source: CPS March Annual Demographic File 2000-2002.
Notes: Dollar values are in 2000$. Standard errors are in parentheses. CPS supplemental weights were adjusted to account for differences in reporting errors between March ASEC earnings data and CPS ORG wage data.

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