# Wal-Mart and the Minimum Wage


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### Introduction

Last year 25 states increased their minimum wage requirements, and the first federal minimum wage increase since 1997 is currently under consideration by the U.S. Congress. As all this activity surrounds the topic, it may be important to examine what characterizes an area with a higher minimum wage. More than half of the states in the U.S. have elected to impose a minimum wage that exceeds the federal minimum. This study considers demographic and economic characteristics in an attempt to identify what differentiates minimum wage levels across states. In addition to the standard economic measures, this paper also looks at the role Wal-Mart, the country's largest corporation, may play in the determination of state minimum wage rates.

### Literature Review

While considerable research has been conducted to study the effects of minimum wage legislation, relatively few inquiries into the determinants of minimum wage have been undertaken. Early studies focus on determinants of minimum wage voting behavior in the United States Senate and House of Representatives. Noel D. Uri and J. Wilson Mixon, Jr. (1980) perform a conditional logit regression analysis of voting by House members on the 1977 Amendment to the Fair Labor Standards Act. The study departs from previous work in that it examines voting behavior on proposed amendments and the final bill. Thus the model regresses five votes for each member of the House on a number of demographic and economic variables.

The results of the Uri and Mixon (1980) study show all variables examined to

be significant in nearly every vote. The elasticity of projected employment, the proportion of youth in the workforce, the influence of small business interests, and the unemployment rate are all shown to be positively correlated with a vote on amendments to limit the impact of the minimum wage increase, but negatively correlated on the final bill. These results are in line with the a priori expectations of the researchers: legislators can appeal to smaller segments of their constituency through on-the-record amendment voting, while still appeasing the majority through a final positive vote on the increase. The study does produce surprising results for the remaining variables. The proportion of workers in low-wage industries, union strength, and Democratic party affiliation were all expected to have negative coefficients in the amendment votes, and positive coefficients in the final vote. In this study the results are just the opposite. The researchers do not address the possible reasons for these unexpected results, but they may be explained by similar reasoning as the expected results discussed above: the process of voting on amendments allows legislators to make their appeal to particular parts of their constituencies while still fulfilling their overall agendas. Because the general public is not attuned to the disemployment effects of minimum wage increases, a positive vote appears to be largely in favor of the average citizen. Unexpected voting patterns may also reflect dissatisfaction with the extent of the changes proposed in a bill.

André Blais et al. (1989) follow the Uri and Mixon (1980) study with an analysis of pooled data on Canadian provincial minimum wage voting from 1975-1982. The study sets out to examine the responsiveness of Canadian legislators to various interest groups, including unions, small business, women, and youth. Taking into account the impact a region's economic performance has on a legislator's likelihood of being re-elected, the researchers include unemployment, average wage, and a dummy variable for heightened awareness of inflation from 1980-1982. The researchers also include left-wing party affiliation as an independent variable.

The influence of small business, women, and youth each have the expected negative coefficient. Unemployment and average wage are shown to be negatively correlated, as expected; left-wing party affiliation is positively correlated, as expected. The inflation variable is only significant in the study when the dummy variable for heightened inflation awareness is excluded. Union influence is not significant in the study. The researchers conclude that overall the influence of high-pressure groups is declining, as politicians do not act first and foremost in the interest of organized pressure groups, but in line with the ideologies of their parties.

Over a decade later, Vaughan Dickson and Tony Myatt (2002) perform a similar pooled regression analysis of Canadian provincial minimum wages, using data from 1977-1996 and including additional demographic variables. The study focuses on the equilibrium sought by politicians in increasing the minimum wage: the marginal increase in constituent support should equal the marginal loss. The independent variables are categorized as "influence" variables associated with interest groups, and other "control" variables associated with the legislators and the economy.

The results show union influence and inflation to be insignificant, much like

the Blais et al. (1989) study. The unemployment rate and generosity of unemployment insurance are negatively correlated, as expected, but the remaining variables have surprising results. Both big and small business are shown to have significant influence, and both are *positively* correlated. This may indicate the variables measure the importance to legislators of the employed, rather than the enterprises that employ them. The women and youth variables are significant, but have the opposite sign expected: both were negatively correlated with votes for minimum wage increases. This may be because the variables more accurately serve as proxies for those who hire women and youth for minimum wage jobs, providing a counterpart for the large and small business variables. Party affiliation is significant only at the ends of the five-party spectrum used in the study, causing Dickson and Myatt (2002) to conclude that their "control" variables are more influential than their "influence" variables.

In the same year, Jerold Waltman and Sarah Pittman (2002) attempt to identify what accounts for large variation in minimum wages across states. The study is a cross-section of states categorized by the nature of their minimum wage laws in relation to the federal minimum wage. The researchers attempt to determine the impact of societal wealth on state minimum wage law. They also consider Democratic political affiliation of state legislators and public ideology as defined by Wright's policy liberalism scores (Wright, et al. 1987). The public ideology variable proves to be the only significant variable in the study, and is significant at the 1 percent level. The researchers attribute this to the fact that at the state level minimum wage laws are largely symbolic, and therefore legislators are primarily responsive to the beliefs of their public in this matter.

**Empirical Model**

This study regresses the state minimum wage rate in the U.S. on ten independent variables. 31 of the 50 United States have state minimum wage requirements that exceed the current federal minimum of $5.15, and 13 states set their minimum wage equal to the federal minimum. In Kansas the state wage is explicitly stated at just under half the federal minimum, and the remaining five states have no locally-established minimum wage, i.e., the state minimum wage is set at zero. Under the Fair Labor Standards Act the federal minimum wage dominates where it exceeds the local minimum wage, so these five states effectively defer to the federal law for wage regulation. Their lack of legislation can be viewed as tacit acceptance of the federal rate or refusal to exceed it. Regardless, they defer to an explicitly stated federal minimum wage that can be quantified. The dependent variable used in this study is the state minimum wage as of March 2007.

Because minimum wage rates are determined by individuals acting as a legislative group, the possible contributing factors to the group consensus are almost limitless. This study attempts to incorporate as many measurable variables as possible, in particular those shown to be significant in previous studies. Beginning with economic indicators, the unemployment rate used is the seasonally-adjusted state rate as of January 2006. It is expected to be negatively correlated with the minimum wage rate in each state. Basic microeconomic theory demonstrates that higher wages limit the number of

employees firms hire, and increases in minimum wage cause increased unemployment. It is assumed that legislators base minimum wage decisions on the previous year's unemployment levels, so the unemployment variable is lagged one year.

The inflation variable is more difficult to obtain at a state level, and is not quite as straightforward in its interpretation. Most inflation figures are provided for major metropolitan areas or regions of the country, so this study utilizes city data where available and regional data otherwise to estimate state inflation rates. The data are lagged one year, representing the percentage change in the annual Consumer Price Index from 2004 to 2005. If legislators are proactive, high inflation should signal a need for a slowdown in the economy and minimum wage levels should not increase. If legislators are reactive, high inflation should be a call for increased wages to accommodate an increased cost of living. Despite the counterintuitive economic reasoning, the average constituent may believe this to be the correct response. The expected sign of inflation variable in this study is therefore ambiguous.

The average wage figure utilized is the average weekly wage in the largest county in each state, assuming that the area with the largest population has the largest influence in the state legislature. Following the logic provided by Blais et al. (1989), a higher average wage should preclude the need for a higher minimum wage. On the other hand, constituents dependent on the minimum wage may view this differential as an indicator that their compensation is insufficient. For this reason, the sign of the variable is ambiguous.

The remaining variables address the characteristics of the labor force and business environments in each state. The variables accounting for women, youth, and African Americans in a state's labor force are all expected to yield negatively-correlated results. Utilizing same the reasoning proffered in the Dickson and Myatt (1989) study, the groups are internally diverse, so they tend to lack cohesiveness and suffer from free-rider problems. The nature of their association, by trait rather than by action, means that as a whole they are neither highly organized nor politically mobilized. These groups are often associated with minimum wage employment, and it is unlikely that they are successfully lobbying for increases in the minimum wage. Ultimately, the only way to practically consider their influence as entire groups is to weigh their presence. The influence of women is measured as the percentage of the workforce that is female; the influence of youth is measured as the percentage of the workforce that is between the ages of 16-19; the influence of African Americans is measured as the percentage of the state population that is African American.

The political affiliation of state legislators accounts for the ideologies of the politicians as well as those of their constituencies. The variable reflects the percentage of the state legislators that are Democrats in 2006, and it is expected to be positively correlated with minimum wage levels. Historically, Democrats have supported laborers through support of increased minimum wages.

The importance of organized labor is accounted for in this study by the percentage of those employed who are represented by unions. The variable is expected to be positively correlated with

the minimum wage rate in each state. A higher minimum wage requires a higher skilled labor wage to maintain the differential unions offer their members. Small businesses have historically been more likely to employ minimum-wage employees, so a higher proportion of small businesses in a state is expected to be negatively correlated with the minimum wage. The significance of small business to a state's economy is measured by the percentage of state-wide employment that occurs in firms with fewer than 20 employees.

While previous studies have focused on the nature of the business climate as a whole, this study attempts to analyze the impact of a particular corporation. As the presence of Wal-Mart in the economy increases, its impact on local minimum wage employees is also likely to be increasing. Wal-Mart's wildly successful strategy has been to offer lower prices than small, locally-owned markets, and focus public relations efforts on its ability to create jobs in rural areas. It is the largest corporation in the United States, according to the Fortune 500 for 2007, with over $351 billion in sales the previous year. It has claimed this number one spot in five of the last six years, second only to Exxon Mobil in 2006. In the realm of general merchandisers, its revenues were nearly six times that of its nearest competitor, Target.

Wal-Mart symbolizes economic promise, particularly in smaller communities, because of its ability to offer goods at reduced prices. Even at lower-than-average wages, and despite its impact on local small businesses, the company has tremendous appeal as an employer in such areas due to the sheer number of jobs it creates. Wal-Mart employs 300-400 employees per store, a figure likely considered a windfall in many small communities. Nevertheless, as the company continues to expand, considerable negative attention has been given to its employment practices. Wal-Mart has paid millions of dollars in fines and class-action lawsuit settlements for its questionable treatment of employees: violations of the Family and Medical Leave Act, unpaid breaks, and off-the-clock work have all been perpetrated by the retail giant, all in an effort to maintain its status as a profitable provider of low-priced merchandise. Because of its apparent commitment to low labor costs, Wal-Mart's possible influence on the state minimum wages is of interest. Its impact is measured as the proportion of the workforce employed by Wal-Mart in each state, and it is expected to be negatively correlated with the level of the state minimum wage.

Data sources and complete descriptions of the variables can be found in the Data Appendix.

**Empirical Results**

This study utilizes an ordinary least squares regression analysis of the minimum wage in 49 U.S. states. Nebraska is excluded because its non-partisan, unicameral system prevents a measurement of the proportion of Democrats in its state legislature. Summary Statistics and a Correlation Matrix can be found in the Output Appendix. The Results of the regression can be found in the table below:

**TABLE 1 - OLS REGRESSION ESTIMATES**

INCLUDED OBSERVATIONS: 49

| | COEFFICIENT | STD. ERROR | T-STATISTIC |
|---|---|---|---|
| UNEMPLOYMENT | 18.01 | 13.13 | 1.37 |
| INFLATION | 29.82 | 34.70 | 0.86 |
| AVERAGE WAGE | 0.01 | 0.04 | 0.14 |
| WOMEN | -4.06 | 10.93 | -0.37 |
| YOUTH | -20.46 | 28.33 | -0.72 |
| AFRICAN AMERICANS | -3.09 | 1.92 | -1.61 |
| DEMOCRATS | 2.14* | 1.11 | 1.93 |
| UNIONIZATION | 4.59 | 3.10 | 1.48 |
| SMALL BUSINESS | 1.33 | 3.79 | 0.35 |
| WAL-MART | -48.19* | 27.72 | -1.74 |
| | | | |
| R-SQUARE | 0.584 | | |
| F-STATISTIC | 5.337 | | |

*Coefficient is statistically significant at the 10% level.

A Breusch-Pagan test indicates normal variance in the regression errors, so heteroskedasticity is not a concern for the model. The Breusch-Pagan test produced an f-Statistic of 0.978, which is not statistically different from zero. Also, a pairwise correlation matrix revealed no cross-correlation higher than 0.60 between any two variables. Assuming then that the model has been correctly specified, the following observations can be made. The R-Square for the model shows that the independent variables chosen account for 58.4 percent of the variance in state minimum wage levels. The f-statistic indicates the model has significant explanatory power at the one percent level.

The only variables shown to be significant in the regression are the measurement of Democratic influence in the legislature, and the presence of a higher proportion of Wal-Mart employees. Both variables were significant only at the 10% level. The significance of Democratic ideology is not surprising, as it is one of the few enduring significant variables examined in the last several decades. The coefficient indicates that a one percent increase in the proportion of Democrats in the state legislature can be expected to correspond to a minimum wage approximately $2 higher in a state, all other things equal. The Democratic Party's long-standing commitment to higher wages is reflected in this regression.

The negative correlation between Wal-Mart's presence and low minimum wages is not unexpected, but the significance of the Wal-Mart variable is startling, particularly considering the relative youth of the company. The coefficient for the variable indicates that for a one percent increase in the proportion of a state's workforce employed by Wal-Mart,

the state minimum wage is likely to be $48 less, all else equal. This clearly does not provide a practical or useful frame of reference: using the median state workforce (South Carolina's 1,850,000-person workforce), one percent of the workforce is 18,500 employees. However, broken down into smaller units the Wal-Mart variable is quite telling of the company's influence on state wage patterns. One-one-hundredth of one percent of the median workforce would be 185 employees, considerably less than the average number of Wal-Mart employees per store. The additional 185 Wal-Mart employees (a 0.01% increase) corresponds to a state minimum wage likely to be 48 cents lower, all other things being equal. Obviously Wal-Mart is not reducing state minimum wages as it sets up new stores, but it does appear that its increased presence in a state limits the likelihood that the minimum wage will increase there.

The failure of the remaining variables to prove significant may reflect the increasingly varied motivations behind minimum wage legislation at the state level. As previous studies have shown, numerous demographic and economic factors are at work in lawmakers' decisions to increase the minimum wage. During some periods, it appears that economic factors have played a more significant role than at present, but different approaches to economic variables may account for their apparent decline in significance. To some, increased inflation is a signal that the cost of living merits a wage increase; to others, increased inflation is an indication that restrictive economic policies are needed. Similarly, the nature of demographic variables may make it difficult to assess their influence: as the Dickson and Myatt (2002) study questions, does a youth variable measure the influence of teenagers, or those who hire teenagers?

**Conclusion**

In their roles as public servants, it seems that legislators at the state level are committed to serving their constituency through dedication to party ideology, rather than responsiveness to segmented constituent interests. The significance of the Wal-Mart variable in this study may not reflect a response to active lobbying by Wal-Mart to keep wages low, despite the sinister reputation Wal-Mart has earned itself with regard to the hourly employee. Rather, it may reflect a shift by legislators to a more sound economic approach to the minimum wage. Perhaps Wal-Mart's "low-input-cost begets low-output-price" approach has inspired better application of economic principles in legislature.

At the same time, there are likely many more Wal-Mart externalities that should be considered. In Louisiana, Oklahoma, Alabama, and Mississippi, Wal-Mart employs two percent of each state's workforce. For Louisiana, this means that in a state typically associated with the oil, shipping, fishing, and tourism industries, one in every fifty workers is employed by a single retailer. Hence. in addition to its influence on minimum wage, one might look at Wal-Mart's impact on typically domestic industries due to its voluminous importation of foreign goods, and its impact on state economies in general as it displaces small businesses. Such studies would facilitate a more accurate portrayal of the influence the country's largest company has on the United States economy as a whole.

## References

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**Data Appendix**

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|---|---|
| MINIMUM WAGE | State Minimum Wage as of April 2007<br>http://www.aflcio.org/issues/jobseconomy/livingwages/ |
| UNEMPLOYMENT | State Unemployment Rate<br>http://data.bls.gov/map/<br>Seasonally Adjusted Unemployment as of January 2006 |
| INFLATION | State Inflation Rate<br>http://www.bls.gov/cpi/home.htm#data<br>Percent Change in Annual CPI from 2004 to 2005<br>Metropolitan and regional data are used as appropriate |
| AVERAGE WAGE | Average Wage in 2006<br>http://www.bls.gov/news.release/cewqtr.t03.htm<br>Data is average weekly wage in largest county divided by 40 hours |
| WOMEN | Percent of State Workforce Women<br>http://factfinder.census.gov/<br>2005 American Community Survey |
| YOUTH | Percent of Workforce Age 16-19<br>http://factfinder.census.gov/<br>2005 American Community Survey |
| AFRICAN AMERICAN | Percent of State Population African American in 2005<br>http://factfinder.census.gov/ |
| DEMOCRAT | Percent of State Legislature Democrat in 2006<br>http://www.ncsl.org/ncsldb/elect98/partcomp.cfm?yearsel=2005 |
| UNION | Percent of State Employed Represented by Unions in 2006<br>http://www.bls.gov/news.release/union2.t05.htm<br>Members of a labor union or an employee association similar to a union as well as workers who report no union affiliation but whose jobs are covered by a union or an employee association contract. |
| SMALL BUSINESS | Percent of State Employment in Small Businesses<br>http://www.census.gov/csd/susb/usst04.xls<br>2004 County Business Patterns |
| WALMART | Percentage of Workforce Wal-Mart Associates as of April 2007<br>http://www.walmartfacts.com/StateByState/?id=6 |

## Output Appendix

**TABLE 2 - SUMMARY STATISTICS**

| | MEAN | MEDIAN | MAXIMUM | MINIMUM | STD. DEV. |
|---|---|---|---|---|---|
| MINW | 6.147 | 6.200 | 7.930 | 2.650 | 1.066 |
| UNEMP | 0.046 | 0.047 | 0.076 | 0.024 | 0.011 |
| INFL | 0.034 | 0.034 | 0.044 | 0.021 | 0.042 |
| AVGW | 21.000 | 20.075 | 35.525 | 15.925 | 3.785 |
| WOMEN | 0.462 | 0.462 | 0.487 | 0.435 | 0.012 |
| YOUTH | 0.044 | 0.043 | 0.065 | 0.031 | 0.007 |
| AFRAM | 0.001 | 0.071 | 0.365 | 0.004 | 0.096 |
| DEM | 0.498 | 0.507 | 0.865 | 0.190 | 0.151 |
| UNION | 0.125 | 0.119 | 0.259 | 0.041 | 0.056 |
| SB | 0.199 | 0.188 | 0.327 | 0.147 | 0.036 |
| WMASSOC | 0.012 | 0.011 | 0.038 | 0.002 | 0.006 |

**TABLE 3 - CORRELATION MATRIX**

| | MINW | UNEMP | INFL | AVGW | WOMEN | YOUTH | AFRAM | DEM | UNION | SB | WMASSOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MINW | 1.00 | 0.14 | 0.06 | 0.28 | 0.14 | -0.36 | -0.21 | 0.48 | 0.65 | 0.02 | -0.53 |
| UNEMP | | 1.00 | -0.15 | 0.05 | 0.06 | -0.24 | 0.35 | 0.15 | 0.13 | -0.25 | 0.08 |
| INFL | | | 1.00 | 0.04 | 0.33 | -0.37 | 0.40 | 0.29 | -0.04 | -0.13 | 0.08 |
| AVGW | | | | 1.00 | 0.04 | -0.47 | 0.22 | 0.21 | 0.33 | -0.34 | -0.45 |
| WOMEN | | | | | 1.00 | -0.13 | 0.18 | 0.30 | 0.16 | 0.11 | -0.14 |
| YOUTH | | | | | | 1.00 | -0.49 | -0.60 | -0.23 | 0.36 | 0.22 |
| AFRAM | | | | | | | 1.00 | 0.21 | -0.29 | -0.46 | 0.27 |
| DEM | | | | | | | | 1.00 | 0.40 | -0.20 | -0.08 |
| UNION | | | | | | | | | 1.00 | 0.04 | -0.59 |
| SB | | | | | | | | | | 1.00 | -0.07 |
| WMASSOC | | | | | | | | | | | 1.00 |