Voting on Minimum Wages: A Time-Series Analysis

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In a recent paper, Silberman and Durden (1976; hereafter S-D) examined economic factors associated with voting by representatives on changes in the minimum wage in 1973. They found, among other results, that the number of low-wage workers in a congressional district is positively associated with voting for higher minimum wages by representatives from the district. This result is somewhat surprising; in fact, S-D were unable to predict a priori the sign of this variable. As Browning (1975) has shown, since the late 1960s there has been a substantial increase in transfers to low-income persons, particularly in terms of income in kind. Thus, in 1973 the losses of those who became unemployed by higher minimum wages may have been relatively smaller than losses in earlier periods. This would have reduced the cost to low-wage workers of the “unemployment effect” (S-D, p. 321) and might have served to make such workers, net, more favorably disposed to passage of such laws.

In addition, the 1964 Voting Rights Act enfranchised many blacks. Blacks are typically low-paid workers; thus, they would have strong interest in minimum-wage legislation. Time-series analysis should enable us to determine any changes in the influence of blacks on voting by representatives and thus enable us to ascertain if the Voting Rights Act has any influence on minimum-wage legislation. Possibilities of detecting such changes make time series a useful adjunct to cross-section analysis. This note is a time-series study of economic determinants of passage of minimum-wage legislation.

The econometric technique used is probit analysis. A (0, 1) variable is defined over all representatives, with 0 being a vote against the minimum wage and 1 being a vote in favor. In each year, we used the vote on final passage of the law rather than on amendments, for this enables us to compare votes and influences over time. We use all years in which there was an actual legislated change in the minimum wage; we omit years such as 1973 in which minimum wages were considered but not passed. (In 1973 the increase in the minimum wage was vetoed by the president.)

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337
This gives us six separate votes, running from 1938 to 1974. As independent variables we use the following:1

Average hourly earnings in manufacturing (AHE): Minimum wages increase the price of low-wage labor, and low-wage labor is a substitute for high-wage labor. Thus, high-wage workers should be in favor of minimum wages if the economic rationality theory is correct. As AHE in a state increase, we predict more support for minimum wage legislation.

Unions (U): Union members are typically high-wage workers; unions serve as the political organization for these workers. Thus, unionization in a state should also be associated with voting for minimum wages.

Blacks (B): Black workers tend to be overrepresented among low-wage workers and among the unemployed. To the extent that higher minimum wages are associated with higher unemployment, then, a rational informed black would be expected to be against minimum wages.

Party (P): Minimum-wage legislation may be a partisan issue. In addition, previous work (Danielsen and Rubin 1977) has shown political party to be an important variable affecting voting on economic issues after adjusting for economic interest. We define a dummy which takes the value one for a Democrat and zero for a Republican.

Americans for Democratic Action (ADA): The ADA, a liberal pressure group, annually rates congressmen on the basis of their votes for a selected set of issues and derives a “liberalism” score for each. Thus, ADA may be a measure of ideology. It is also possible that in fact ADA serves to monitor membership in a coalition of economic interests; we are currently exploring this possibility. Votes are selected by the ADA so that each year the average rating for all congressmen will be about 50 percent; thus, the effect of this variable would not be expected to change over time, and the difficulty in interpretation of the variable should have no effect in explaining changes over time in voting on minimum wages.

We used statewide data for each of the first three variables (AHE, U, B); individual data for each congressman were used for the last two (P, ADA). The ADA did not exist in 1938 and AHE by state were not available for this year, therefore, a dummy for the South was used as a proxy for these two variables in the 1938 estimate.

1 Data sources: Union data by state for 1939 and 1953 are from Troy (1957); for 1964, 1970, and 1974 data are from U.S. Bureau of the Census (1977). These are the only years for which these data are available. A weighted average was used to compute union membership in 1961. Number of blacks by state is available in the U.S. Bureau of the Census (1977); it is available for census years only. Weighted averages were used to compute number of blacks for the minimum-wage years. The ADA ratings and party for 1950 and 1956 are from ADA World; for subsequent years, these data are from Congressional Quarterly, for the appropriate years. Average hourly earnings in manufacturing are from U.S. Department of Labor (1975). For a small number of states in 1949 average hourly earnings were not available. A simple average for the corresponding region was used. Roll-call voting records and political party for 1938 are from U.S. Congress (1938); for subsequent years, from Congressional Quarterly, appropriate years.
Our variables are somewhat different than those used by S-D. The major reason for this difference is data availability: many of their variables (e.g., contributions of unions and small business to political campaigns) were not available throughout the time period which we considered. In addition, they did not use any ideological variables; they used contributions by unions to political campaigns and we used percentage of the labor force in a state which belonged to a union. It is possible for unions to make contributions to representatives in any state. However, we would expect contributions to be most effective when made to those representatives who would be most sympathetic to the union cause, which is to say, those representatives from states with relatively many union members. We would therefore not expect this difference in data to be significant.

The empirical results for 1949–74 are reported in table 1.2 Variables ADA and AHE were significant in all years and were positively associated with voting for minimum wages. Percentage of blacks in a state was negatively associated with voting in all years and was significant in 1949 and 1966. Political party was never significant; this is apparently because northern Democrats were in favor of minimum-wage legislation and southern Democrats were opposed, leading to no net effect.

Unionization was never significant. However, there may be multicollinearity problems with unions and AHE: the correlation between these variables averaged .78. If AHE are excluded from the probit analysis, unions become significant with larger likelihood estimates. If unions are excluded, the likelihood estimates of AHE become larger. It is thus a computationally impossible task to isolate the influence of unions and AHE. This is not a serious problem since if either AHE or unions or both is significant, the conclusion is the same: minimum wages are passed at the behest of high-wage workers.

Since some of the data were not available for 1938, the results for this year are not included in the table. Using a north–south dummy variable (south = 1) as a proxy, the 1938 probit equation is

\[
\text{vote} = 0.186 + 3.487U - 1.168B + 0.737P - 0.915\text{DNS},
\]

\[
(0.28) \quad (1.206) * \quad (0.92) * \quad (0.20) * \quad (0.25) *
\]

\[-2 \times \log \text{ of the likelihood ratio} = 73.45, \text{ number of observations} = 418, * \text{ significant at the .05 level, one-tailed test.}\]

The 1938 equation with significant positive coefficients for unions and negative coefficients for blacks and DNS supports the hypothesis that minimum wages are passed to benefit high-wage workers.

2 In some years, the ADA included voting on minimum wages in the list of bills on which the rating was based. In 1961 the final vote was included; in 1949 another vote on the minimum wage issue was included; and in 1966 three minimum-wage bills, not including the final vote, were used. It is conceivable that this overlapping could create some problems; however, in 1955 and 1974 no minimum-wage bills were included in the ADA rating, and the results for these years do not differ from the other years. Thus this does not seem to be a problem.
<table>
<thead>
<tr>
<th>YEAR</th>
<th>CONSTANT</th>
<th>AHE</th>
<th>Unions (U)</th>
<th>Blacks (B)</th>
<th>ADA</th>
<th>Party (P)</th>
<th>SAMPLE SIZE</th>
<th>-2 × LOG LIKELIHOOD RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949</td>
<td>-1.190</td>
<td>1.383</td>
<td>1.257</td>
<td>-1.728</td>
<td>1.765</td>
<td>-0.015</td>
<td>404</td>
<td>60.26</td>
</tr>
<tr>
<td></td>
<td>(.00)</td>
<td>(.86)</td>
<td>(1.75)</td>
<td>(1.34)</td>
<td>(.60)</td>
<td>(.47)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1955</td>
<td>1.165</td>
<td>1.359</td>
<td>1.210</td>
<td>-1.606</td>
<td>1.965</td>
<td>-0.148</td>
<td>427</td>
<td>137.04</td>
</tr>
<tr>
<td></td>
<td>(.81)</td>
<td>(.72)</td>
<td>(1.72)</td>
<td>(1.27)</td>
<td>(.58)</td>
<td>(.46)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1961</td>
<td>-1.293</td>
<td>1.454</td>
<td>1.173</td>
<td>-1.535</td>
<td>1.971</td>
<td>-0.140</td>
<td>428</td>
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</tr>
<tr>
<td></td>
<td>(.76)</td>
<td>(.69)</td>
<td>(1.72)</td>
<td>(1.27)</td>
<td>(.58)</td>
<td>(.46)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1966</td>
<td>-1.202</td>
<td>1.390</td>
<td>1.216</td>
<td>-1.666</td>
<td>1.895</td>
<td>-0.090</td>
<td>414</td>
<td>259.34</td>
</tr>
<tr>
<td></td>
<td>(.82)</td>
<td>(.73)</td>
<td>(1.72)</td>
<td>(1.28)</td>
<td>(.58)</td>
<td>(.46)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1974</td>
<td>-1.328</td>
<td>1.484</td>
<td>1.179</td>
<td>-1.598</td>
<td>1.901</td>
<td>-0.081</td>
<td>419</td>
<td>104.96</td>
</tr>
<tr>
<td></td>
<td>(.77)</td>
<td>(.70)</td>
<td>(1.72)</td>
<td>(1.27)</td>
<td>(.59)</td>
<td>(.46)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note.—Standard errors in parentheses; Maximum-likelihood ratio is significant at the .01 level for all equations.

* Significant at .10 level, for one-tailed test, based on asymptotic t-ratio.

** Significant at .05 level, for one-tailed test, based on asymptotic t-ratio.
The likelihood estimates did not indicate any change with time. The coefficients for AHE, blacks, and ADA are remarkably consistent, indicating little change in the impact of these variables over the 25-year period. We were unable to determine any effect of the Voting Rights Act or the increase in welfare payments on minimum-wage legislation. (In related research, we have examined relationships between these two variables.\textsuperscript{3} It appears that the Voting Rights Act has influenced voting by southern representatives on legislation dealing with income transfers [see Kau and Rubin 1977]). Our result on wages disagrees with the result of S-D: they found that low-wage workers were associated with voting for minimum wages; we found that higher wages were associated with voting for minimum wages and that the presence of blacks (typically low-wage workers) was negatively and sometimes significantly associated with voting for minimum wages. Further research may be needed to resolve this discrepancy.\textsuperscript{4}

References

Congressional Quarterly, Inc. \textit{Congressional Quarterly Almanac}. Various issues.
———. \textit{Congressional Quarterly Weekly Reports}. Various issues.

\textsuperscript{3} Thomas Borcherding has pointed out that we would not in fact expect higher welfare payments to change voting patterns: at any time, the lowest observed market wage would reflect all such transfers, and a minimum wage above this level would lead to undesired unemployment.

\textsuperscript{4} In a preliminary test of the hypotheses in this paper, we used a time-series regression with the dependent variable defined as one in a year in which the minimum wage changed and zero for years with no change, for the period 1938–74. The independent variables were all national variables. They were percent of the population over 18 which is black (B); percent of the labor force unionized (U); number of northern democrats in the House of Representatives, a measure of liberalism (ND); number of representatives from the northeast divided by number of representatives from the southeast (RR); and average hourly earnings in manufacturing (AHE). The equation derived from the above procedure is

\[
MW = -0.394 + 0.734AHE + 0.0201U + 3.941RR + 0.00764ND - 54.244B
\]

\[
\begin{array}{cccc}
(0.0813) & (2.642) & (0.781) & (1.502) & (3.432) & (-2.185)
\end{array}
\]

\[R^2 = 0.400;\ t\text{-values in parentheses.}\]

The only significant variables were AHE, ND, and B. These results are consistent with those obtained from the more elaborate procedure described in the text; higher earnings and northern democrats were significant in changing the minimum wage, and blacks were significant and negatively associated with such a change. Though this specification is weaker than that in the main text, the results are consistent.


