

The Minimum Wage and Income Inequality: Analysis of Effects on the State and Federal Level

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Abstract: In this paper, I investigate how minimum wage policies at the state and federal level impact income inequality in the United States. Using the Gini index to measure income inequality, I find that minimum wages imposed at the federal level have no statistically significant effect on income inequality, while those imposed at the state level are expected to reduce income inequality with a high degree of statistical significance. As the minimum wage has become more viewed as a potential tool for affecting income inequality, understanding the differing effects that occur at different levels of government will become increasingly important for effective policy implementation. As federal minimum wages are inherently “one size fits all” policies, it is expected that changes to the minimum wage made at the state level will offer policy makers a greater ability to impact income inequality.

Keywords: Income inequality, minimum wage, personal income.

I. INTRODUCTION

While the effects of a minimum wage on income inequality have been well researched, the findings have not been consistent. This is perhaps unsurprising, given that there are consequences of a minimum wage predicted by basic economic theory that would have conflicting effects on income inequality. While a minimum wage may cause some low-wage workers to earn more than they otherwise would and therefore decrease income inequality, it may also cause a reduction in employment for other low-wage workers, which would contribute to heightened inequality.

In the United States, these issues are further complicated by the fact that minimum wages are imposed not only by the federal government, but by state and local governments as well. Minimum wages imposed by state and local governments will inherently have more ability to be tailored to the specific economic conditions of the relevant region. If policy makers utilize minimum wages as a tool for reducing income inequality, this suggests that minimum wages imposed at the state and local level should have a greater ability to equalize incomes. This paper specifically investigates how state level minimum wages differ from the federal minimum wage in impacting income inequality.

II. LITERATURE REVIEW

In a literature review, Camara et al. (2024) estimate that 73% of publications have found that minimum wages contribute to reduced income inequality. While the majority of research does tend to indicate that higher minimum wages lead to lessened income inequality, this of course leaves several studies that contradict this result. Examples of papers that argue against the claim that the minimum wage has a significant equalizing effect on incomes include Burkhauser et al. (1996), Even and Macpherson (1996), and Partridge and Partridge (1999). Arguments that higher minimum wages do not reduce (or even increase) income inequality typically center around issues such as adverse employment effects and substitution effects.

Despite the breadth of research on the topic, the literature has not provided a clear answer on the impact of minimum wages on income inequality. One important reason for this is the lack of clarity on related issues such as the extent (if any) to which minimum wages adversely affect employment.

Additionally, even in the research that does find evidence that higher minimum wages lead to lower income inequality, there are additional factors that create tension in these results. For instance, while Dube (2019) finds evidence that state level minimum wage increases are effective at increasing the incomes of low-income families, he also notes that these effects are at least partially offset by a reduction in funds received as public assistance. Autor et al. (2016) find an inverse relationship between the minimum wage level and income inequality but suggest that changes to wage structures are more significant drivers of income inequality, with the minimum wage playing a relatively smaller role.

Given the relatively conflicted nature of the previous research, it is important to determine whether there is an implementation strategy that leads to more predictable outcomes. In this paper, I focus on the difference in effects between state and federal minimum wages in the U.S. If income inequality is seen as an important factor when determining the minimum wage, then analyzing how state and federal level changes differ in their effects on inequality is necessary for effective implementation.

III. METHODOLOGY AND DATA

In order to find the impact of the federal minimum wage on income inequality within the U.S., I use national Gini index values from the years 1968 to 2023, and regress these values against the federal minimum wage and additional control variables, which include the national unemployment rate, the inflation rate, and GDP per capita. All national level data was collected from the Federal Reserve Economic Data (FRED) database.

At the state level, the Gini index, minimum wage, unemployment, and GDP are all replaced with their state level equivalent. The Gini index for each state year combination is then regressed against the corresponding minimum wage and control variables. The state level regression was run for the years 2008 to 2018. State level Gini index values were collected from the State Science & Technology Institute (SSTI). State minimum wage values were collected from the Department of Labor. State GDP values are from the Bureau of Economic Analysis (BEA). State unemployment numbers are Iowa State University's Iowa Community Indicators Program.

IV. RESULTS

Table 1 below shows the effect that the federal minimum wage has on income inequality. The coefficient on the minimum wage is negative, which implies that increasing the federal minimum wage is expected to reduce income inequality. However, the result is not statistically significant. This suggests that while the federal minimum wage often leads to reduced inequality, it does not reliably do so due to its "one size fits all" nature. Because the federal minimum wage cannot be tailored to the economic conditions within a specific region, it is imprecise as a tool for impacting income inequality.

TABLE I: FEDERAL MINIMUM WAGE AND GINI INDEX

MW	-3.63 (2.39)
Inflation	-0.26(0.04)***
Unemployment	-0.12(0.07)*
R ²	0.93

* p<0.1 **p<0.05 ***p<0.01

Note: There are 56 observations. An observation is a specific year within the United States. Standard errors in parentheses. MW is the log of the prevailing minimum wage. Additional controls included for GDP per capita, linear and quadratic fixed effects.

Table 2 shows the effect of state minimum wages on income inequality. As with the federal minimum wage, the coefficient on the state minimum wage is negative, thus it is predicted that an increase in a state's minimum wage will lead to reduced income inequality. Although the coefficient on the state minimum wage is smaller in magnitude than that of the federal minimum wage, state level minimum wages have a statistically significant impact on income inequality, with the state level coefficient being significant at the one percent level.

TABLE 2: STATE MINIMUM WAGE AND GINI INDEX

MW	-2.92 (1.02)***
Inflation	0.04(0.02)**
Unemployment	-0.05(0.02)**
R ²	0.93

* p<0.1 **p<0.05 ***p<0.01

Note: There are 550 observations. An observation is a state year combination within the United States. MW is the log of the prevailing minimum wage. Standard errors in parentheses. Additional controls included for GDP per capita, linear and quadratic fixed effects, and state fixed effects.

So, while federal minimum wages are, on average, associated with larger decreases in income inequality in the observed period, state minimum wages more reliably contribute to decreasing inequality. This additionally suggests that policy makers are considering income inequality when determining the minimum wage, and that state governments are, to at least some extent, successfully leveraging their ability to factor in the specific economic conditions within their state when adjusting the minimum wage.

V. CONCLUSION

In this paper, I find evidence that state minimum wages are a more reliable and precise tool for reducing income inequality in the United States than is the federal minimum wage. If impacting income inequality is seen as an important result of changing the minimum wage, this suggests that greater emphasis should be placed on adjusting minimum wages at the state level as opposed to the federal level.

Further work could extend these results by analyzing minimum wages imposed at the local level. If state minimum wages having a more statistically significant impact on income inequality is due to policy makers being more able to tailor the chosen minimum wage to the conditions in their state, then local governments may have an even greater ability to affect income inequality with minimum wages. If this is found to be the case, it may suggest that local minimum wages have been historically underutilized.

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