

# **The Minimum Wage, Earned Income Tax Credit and Labor Supply\***

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## **Abstract**

This project examines the interactions between the minimum wage and the Earned Income Tax Credit and the impacts of these policies on labor supply and receipt of EITC benefits. The empirical analysis is based on administrative data from the United States Internal Revenue Service. This data contains income tax records covering the United States population between 2001 through 2013. The data contains detailed information on earnings, self-employment, unemployment, EITC benefits and geography. Using the geographic information, the empirical analysis exploits variation from state and federal minimum wage changes between 2001 through 2013 to identify causal effects of minimum wage changes on earnings and EITC benefits.

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## Research Design

The empirical analysis is based on pursuing two research designs. The first research design will follow Dube, Lester & Reich (2010) and exploit variation in state minimum wages across state borders and over time. Specifically, while Dube et al restrict their analysis to counties that straddle state borders, we will focus on commuting zones that straddle state borders and then aim to estimate the following regression specification,

$$y_{cst} = \beta * \ln mw_{st} + \gamma_{cs} + \delta_{ct} + \varepsilon_{cst},$$

where  $t$  is year,  $s$  is state, and  $c$  is commuting zone. State will be defined based on the state of the employer. The key dependent variable is  $mw_{st}$ , which denotes the minimum wage in state  $s$  at time  $t$ . Data on this variable will come from the Department of Labor.<sup>1</sup>

We will examine a variety of dependent variables, including log average annual earnings and log aggregate employment. Specifically, to define log average annual earnings at the commuting zone-year-state level, we will compute annual earnings for all individuals who have an employer in a given commuting zone, state and year and then average over these individuals. To define log aggregate employment, we will count the numbers of individuals with positive earnings in each commuting zone, state and year and then compute the log of the aggregate count.

Importantly, this regression specification will include fixed effects for each state-commuting zone combination ( $\gamma_{cs}$ ), and for each commuting zone-year combination ( $\delta_{ct}$ ). By including these fixed effects, the effects of the minimum wage on the dependent variable will be identified based on changes in the minimum wage within a given commuting zone on one side of a state boundary relative to the other side of the state boundary.

The second research design will continue to build on the first research design. In particular, the second research design will also exploit variation in state minimum wages, but this research design will aim to examine distributional impacts of the minimum wage changes. Specifically, we will aim to estimate the following regression specification,

$$w_{zt}^{\tau} = \beta^{\tau} * mw_{st} + \gamma_z + \delta_{ct} + \varepsilon_{zt},$$

where  $z$  is employer zip code,  $t$  is year,  $s$  is employer state, and  $c$  is commuting zone. We will restrict the analysis to ZIP codes that are in commuting zones that straddle state borders. The control variables will include fixed effects for employer zip code ( $\gamma_z$ ) and fixed effects for commuting zone-year combinations ( $\delta_{ct}$ ).

To examine impacts of minimum wages on the distribution of earnings, the dependent variable will focus on counts within earnings bins. Specifically, the dependent variable,  $w_{zt}^{\tau}$ , will be the number of jobs (W2s) in wage bin  $\tau$ . A wage bin will be defined as  $\tau \pm \$500$ , and  $\tau$  ranges from \$0 to \$150,000. We will also estimate the effect of the minimum wage on the frequency of filing

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<sup>1</sup> Historical state by year minimum wage information is available here: <http://www.dol.gov/whd/minwage/chart.htm>

and the number of EITC claims, again, by wage bin. To characterize the distributional impacts, we will plot estimates of  $\beta^r$  for each wage bin.