

# **Estimating the Effects of Minimum Wage in a Developing Country: A Density Discontinuity Design Approach**

Hugo Jales  
University of British Columbia

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## **Abstract:**

This paper proposes a new framework to empirically assess the effects of the minimum wage in a developing country. This approach allows us to jointly estimate the effects of the minimum wage on unemployment, average wages, sector mobility, wage inequality, the size of the informal sector and on labor tax revenues. I show that under reasonable assumptions, cross-sectional data on the worker's wage and sector status can identify the joint distribution of the latent counterparts of these variables; that is, the sector status and wage that would prevail in the absence of the minimum wage. I also identify parameters that govern how the minimum wage affects the economy. My identification strategy, building on Doyle (2006), specifies a parametric form for the conditional distribution of sector status, given wage. I show how the discontinuity of the wage distribution around the minimum wage identifies the extent of non-compliance with the minimum wage policy, and how the conditional probability of sector status given wage recovers the relationship between latent sector status and wages. I apply the method in the "PNAD", a nationwide representative Brazilian cross-sectional dataset from years 2001 to 2009. I show on the application that the assumptions used are not violated in the context of the Brazilian labor market. The results show that the size of the informal sector is increased by around 46% when compared to the scenario in the absence of the minimum wage. This result is driven by both two sources: (i) unemployment effects on the formal sector, (ii) movements of workers from the formal to the informal sector as a unintended consequence of the policy. In addition, the minimum wage legislation strongly affects wage inequality, reducing up to 20% the standard deviation of log-wages, and reduces revenues from labor taxes up to 15%.

*Keyword: Minimum Wage, Informality, Unemployment, Density Discontinuity, Design, Wage Inequality, Labor Tax Revenues, Formal Sector*

*JEL Codes: J60, J31, J30*