The Impact of the Minimum Wage on DI Participation

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Introduction

- This project provides an empirical analysis of the impact of the minimum wage on DI claims

- The minimum wage affects the value of labor-market work relative to DI
  - Raises the opportunity cost of being on DI for those not truly disabled

- However, increases in the minimum wage cut both way
  - Raise hourly wages
  - May decrease employment and hours for low-skilled workers

- Overall impact on DI participation is theoretically ambiguous

Introduction

- This project answers the following question:

"Do changes in the minimum wage find their way in the short run into changes in DI claims and awards?"

Introduction

- And the answer is no

Summary of Data and Methods

- Draw on data from the SSA's State Agencies Monthly Workload Data
- State-by-year panel of DI claims and allowances for 2002-2017
- Matched to state-by-time variation in the real effective minimum wage

Summary of Data and Methods

- Two reduced-form estimation methodologies are employed
- The first follows studies in the hourly wage-inequality literature
  - models DI claims as a function of the bindingness of the log minimum wage in the state hourly wage distribution
- The second follows studies in the disemployment literature
  - models DI claims as a function of a distributed lag of the minimum wage

Summary of Findings

- Across a wide variety of specifications, the minimum wage has had no net effect in the short run on DI claims and awards over the last two decades

- Estimated elasticities of DI claims and awards to the minimum wage are
  - Economically small
  - Not statistically different from zero

- Policy proposals to increase the minimum wage would be predicted to have no discernable impact on DI claims and awards

Background

- MW can affect DI participation in the short run in a number of dimensions
  - Increase the likelihood of attaining a quarter of coverage and over time
    - Increase the likelihood an individual will be insured for DI benefits

  - Conditional on being insured, increase the likelihood earnings exceed SGA
    - Reduce the likelihood an insured individual is eligible for DI benefits

  - Conditional on being eligible, increase earnings
    - Decrease the replacement rate from DI
    - Increase the opportunity cost of DI participation

Background

- Employment/hours adjustments complicate the potential impact on DI

- If minimum wage reduces employment for the low-skilled, DI becomes more attractive relative to labor force participation

- Overall, the impact of a change in the hourly wage, such as that induced by a change in the minimum wage, is theoretically ambiguous

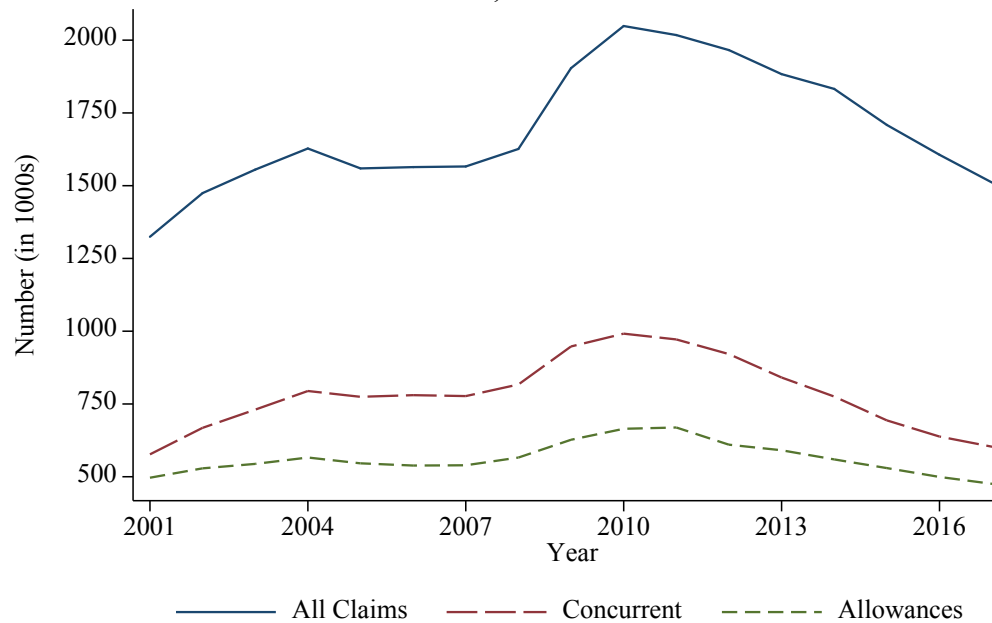- Empirically, claims are strongly counter-cyclical

Claims are Strongly Counter-Cyclical

Figure 1. Aggregate Annual DI Beneficiaries and Real Benefits Paid for 2001-2017
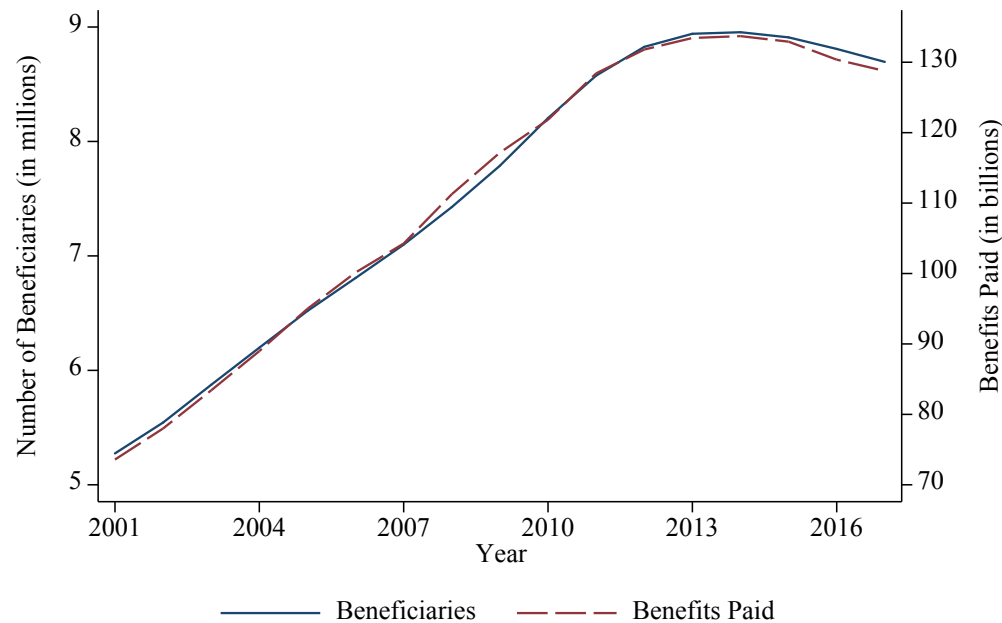
Claims are Strongly Counter-Cyclical

Figure 2. Aggregate Annual Disability Insurance Claims, Concurrent Claims, and Allowances for 2001-2017

Claims are Strongly Counter-Cyclical

Figure 3. Aggregate Annual Disability Claims and the Unemployment Rate for 2001-2017

# Evidence from Natural Resource Booms and Busts

- Black et al. – Coal boom in Appalachia
- Vachon – Fracking boom in Bakken Basin
- Charles et al. – Fracking boom nationally
- Elasticity of DI payments with respect to earnings of -0.3 to -0.7
- Elasticity of DI participation with respect to earnings of -1

Time-Series Relationship

- Unfortunately, the results of these studies are not directly applicable to the impact of the minimum wage

- Resource booms (busts) represent shifts in labor demand

- MW changes represent movements along labor demand curve

- Previous studies have focused on DI payments, not claims

Time-Series Relationship

Figure 4. Aggregate Annual Disability Claims and the Real Minimum Wage for 2001-2017
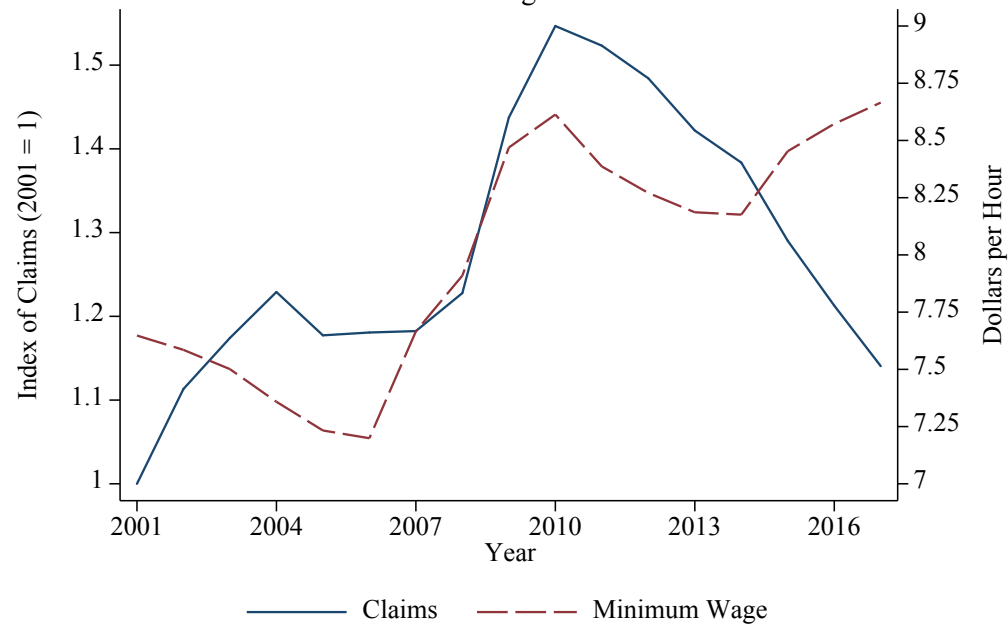
Time-Series Relationship

- Variation in real minimum wage from
  - Federal changes in 2007 ($5.85), 2008 ($6.55), and 2009 ($7.25)
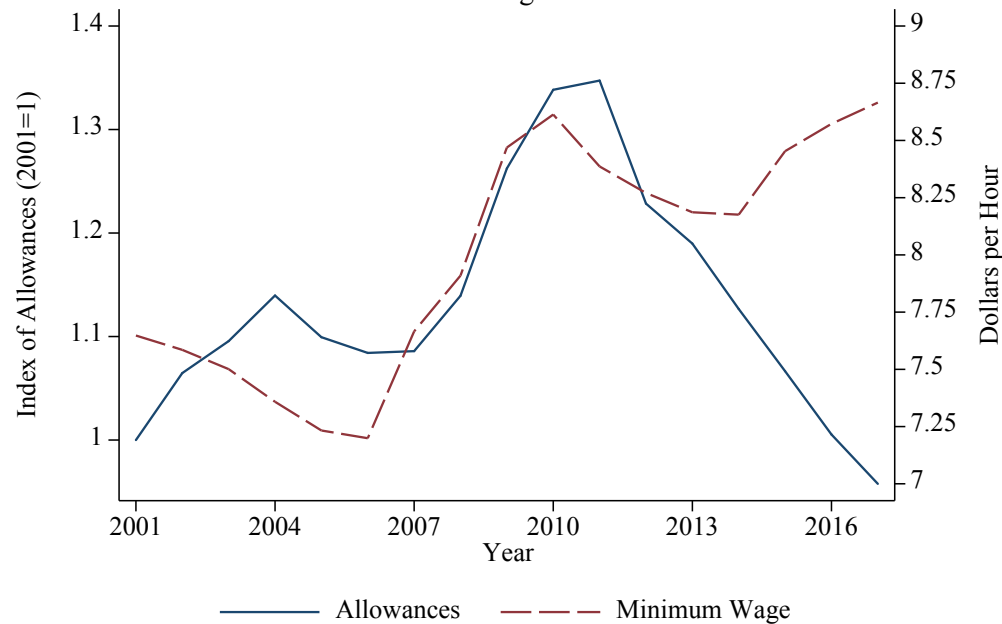 - State changes

Time-Series Relationship

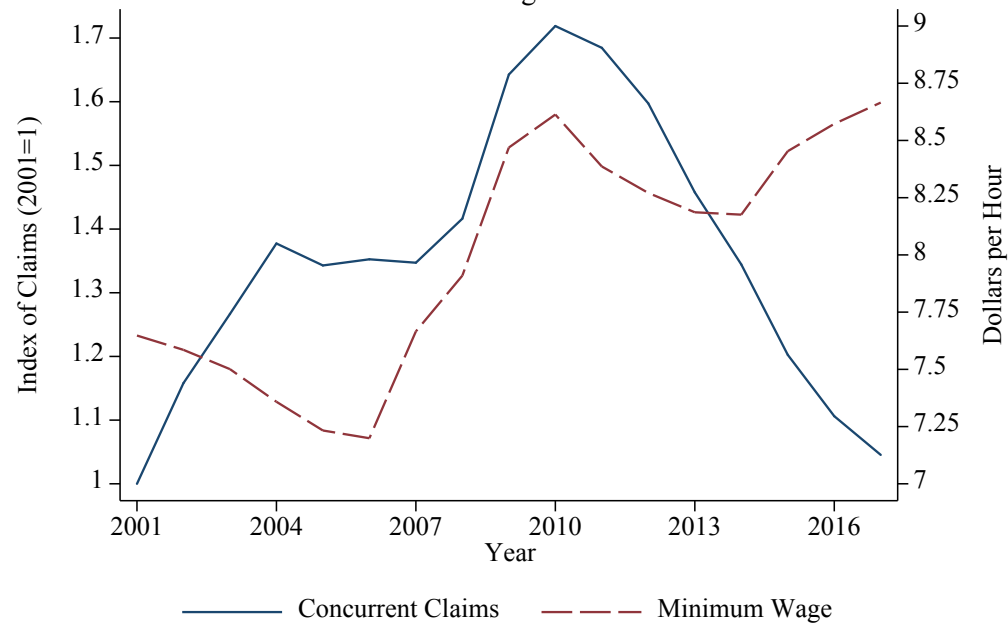Figure 5. Annual Number of Minimum-Wage Changes at the State Level and the Real Minimum Wage for 2001-2017

Time-Series Relationship

Figure 6. Aggregate Annual Disability Allowances and the Real Minimum Wage for 2001-2017

Figure 7. Aggregate Annual Concurrent Claims and the Real Minimum Wage for 2001-2017

Time-Series Relationship

- No clear time-series evidence
- But there have been many secular changes to labor demand and supply
    - Continued de-unionization
    - Increased automation
    - Skill-biased technical change
    - International competition
    - Outsourcing
- Move to a regression-based framework
- Use a state-year panel and two estimation methodologies

First Econometric Method

$$d_{st} = \alpha + \beta_1 (w_{st}^{MW} - w_{st}^{50}) + \beta_2 (w_{st}^{MW} - w_{st}^{50})^2 + \mathbf{X}_{st} + \psi_s + \tau_t + \psi_s \cdot t + u_{st}$$

DI outcome — % Wedge between MW and median wage — Other factors changing within states over time — State & Year Effects, State x Year Trends

Bindingness of MW

- Measured in logs
- State (s) and year (t)
- Impact on DI is a function of bindingness of MW
  - Modeled as a quadratic
  - Relative to median wage in the state (in each year)

Second Econometric Method

$$\ln d_{st} = \kappa + \sum_{r=-1}^{3} \delta_r \ln w_{st-r}^{MW} + \mathbf{X}_{st} + \psi_s + \tau_t + \psi_s \cdot t + u_{st}$$

- Employment and DI claims may take some time to adjust
- Distributed lag approach
- 3 lags and 1 lead of the MW

Take-Aways

- Across a wide variety of specifications, the minimum wage has had no net effect in the short run on DI claims and awards over the last two decades

- Even for concurrent claims (and SSI-only claims)

- Estimated elasticities of DI claims and awards to the minimum wage are both economically small and not statistically different from zero.

- Policy proposals to increase the minimum wage would be predicted to have no discernable impact on DI claims and awards