Downward Nominal Wage Rigidity in the U.S. during and after the Global Financial Crisis

Conference on Research in Income and Wealth
July 13, 2020

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Downward Nominal Wage Rigidity

• Important in both micro- and macroeconomics
• Did the severe labor market distress from the GFC reduce DNWR?
  • Cost of DNWR to firm arguably larger
    • When in distress
    • In low-inflation environment
  • Workers have fewer outside options
  • Workers nominal wage cuts are more acceptable when the firm is hurting
    • Previous evidence for U.S. mixed
• Is macroeconomic importance of rigidity mitigated by other factors?
Contributions of this paper

• Nationally representative survey of establishments beginning 1983
• Estimate degree of DNWR over time
• Using several estimators
Types of Data

• Several types of data in literature for U.S.; all have pluses and minuses

• Household Surveys
  • Measurement error

• Employer Surveys
  • Less prone to measurement error
  • Mostly small and unrepresentative samples

• Administrative sources or payroll records
  • Little measurement error
  • Not representative of entire U.S.
  • Earliest begin with 1998
Our Data

• Individual observations underlying the BLS’ Employer Cost Index
  • Survey of employers ➔ accuracy
  • Nationally representative
  • Large: Avg 18,000 jobs in 4,000 private establishments per year
  • Wage changes span 1983-2019
  • Panel structure
  • Wages & salaries and benefits separately
Our Data, continued

- Unit of observation is a specific *job* in a specific establishment
- Average wage across workers in that job
- Advantages and disadvantages
  - Rigidity at the job level may be relevant for macro implications
  - Rigidity at the worker level more relevant for micro questions
  - Being job averages, may be affected by changes in personnel
(12-month changes)
Estimator #1: Size of Spike at Zero

• Used in numerous studies
  • Daly, Hobijn, and Lucking (2012); Daly and Hobijn (2014); Kurmann and McEntarfer (2019); Jardim et al. (2019); Grigsby et al. (2019); Jardim, Solon, and Vigdor (2019)
Relative Size of Spike

• Increase during in 2009-10 may reflect only a leftward shift in entire distribution, within a constant rigidity “structure”

• Dickens et al (2007) suggests ratio of zeros to non-positive wage changes
Relative Size of Spike at Zero
(One-Year Changes)
Estimator #2:
Lebow, Stockton, Wascher (1995)

• “LSW statistic” measures an asymmetry between the upper and lower parts of the histogram
• (mass>2*median) – (mass<0)
Proportional LSW

• Here, too, increase in 2009-10 may reflect only a leftward shift in entire distribution, within a constant rigidity “structure”

• Alternative is ratio of the LSW statistic to mass>2*median
Parametric Model

• In spirit of Altonji & Devereaux (2000) and Fehr & Goette (2005)
• Notional log wage changes follow a two-sided symmetric Weibull distribution
• Probability of rigidity is a declining function of distance below zero
• Menu-cost rigidity also allowed
• Parameters of notional distribution and of rigidities vary freely by year
• Calculate proportion of notional wage reductions swept to zero
• Calculate probability of any particular notional reduction being swept to zero by rigidity
Notional Wage Declines Swept to Zero, Parametric Model

Notional Declines of -0.1 Swept to Zero, Parametric Model
Why DNWR may not have Macro Effects?

- Benefits? No. Results similar when we examine total compensation
- Perhaps employers take a multiple-year perspective
Constant-employment sample

• Likelihood of turnover increases with length of period
• Sample of jobs with no change in number of employees
• Data begin with 2006
• Similar decrease in apparent rigidity at 2- and 3-year horizons
Summary

• There is significant DNWR in the U.S.
• No evidence that great distress of 2008-9 recession reduced rigidity
• Rigidity much smaller at two- and three-year horizons