

Labor Market Reform and the Cost of Business Cycles

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Motivation

- Recessions are very costly (Great Recession)
- Large literature: How to reduce costs of recessions using macroeconomic stabilization policy
- This paper: How to reduce the cost of recessions using labor market reform

Our Approach

- Follow Lucas (1987, 2003) and compute the welfare costs of business cycles – cost of recessions is a special case of costs of business cycles
- In contrast to Lucas (1987, 2003), no representative household assumption
- Analyze how labor market reform affects the welfare costs of business cycles

Our Approach

$$\frac{\partial \Delta}{\partial z} = ?$$

$$\frac{\partial \Delta}{\partial b} = ?$$

Δ : Welfare cost of business cycles

b : unemployment benefits

z : matching efficiency

Results

- States conditions under which an increase in “labor market flexibility” (reduction in unemployment benefits, increase in matching efficiency) reduces the welfare cost of business cycles
- Provides a quantitative application to the case of the German labor market reform of 2003-2005 (Hartz reforms)

Results

- German labor market reforms of 2003-2005 reduced unemployment benefits (Hartz IV) and improved matching efficiency through restructuring of Public Employment Agency (Hartz III)
- Quantitative analysis suggests that these reforms reduced the non-cyclical unemployment rate by almost 2.6 percentage points and reduced the welfare cost of business cycles by 20 – 40 percent

Intuition

- Recessions are costly because unemployment goes up and earnings losses associated with unemployment go up
- An increase in labor market flexibility increases the non-cyclical component of the job finding rate
- This reduces the increase in unemployment during recessions and may reduce the increase of earnings losses during recessions

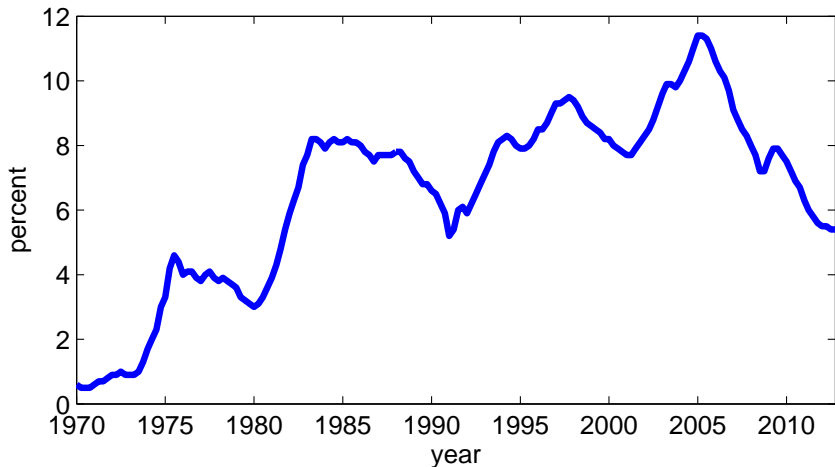
Policy Implication

- Labor market reform changes the design of optimal stabilization policy
- Well-designed labor market reform reduces the need for fiscal stimulus packages
- Warning: this is not a paper about optimal timing of labor market reform

Literature

- **Welfare Costs of Business Cycles:** Lucas (1987, 2003), Alvarez and Jermann (2004), Barlevy (2004), DenHaan and Sedlack 2013), Krebs (2003, 2007), Krusell and Smith (1999, 2002), Storesletten, Telmer, and Yaron (2001)
- **Labor Market Institutions and Macro Shocks:** Blanchard and Wolfers (2000), Ljungqvist and Sargent (1998), Bentolila et. al (2012), Jung and Kuhn (2013)

Figure: Quarterly Unemployment Rate, Germany 1970Q1-2012Q4



Source: OECD: 1970-1990, quarterly unemployment rate for West Germany; 1991-2012, quarterly harmonized unemployment rate for Germany.

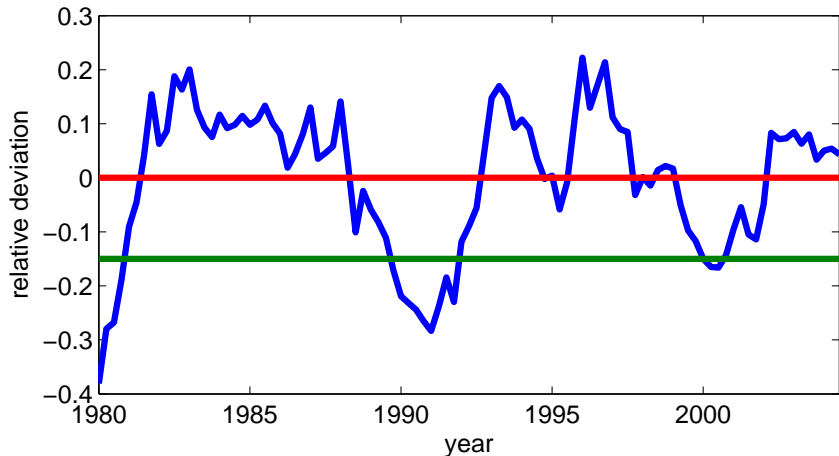
Model

- Search model with a a large number of workers
- Workers are risk-averse, employed or unemployed, and can trade a risk-free asset
- Unemployed workers lose skills, receive unemployment benefits and choose search effort
- Job destruction process is exogenous

Model

- Job finding rate depends on search effort and unemployment rate, but not on vacancies (matching function with constant vacancy rates)
- Production is linear in labor employed
- Stabilization policy affects process of job destruction (black-box approach)

Figure: Deviation of Job Separation Rate from Trend, Germany 1980Q1-2004Q4



Source: Jung and Kuhn (2013).

Cost of Business Cycles

Suppose $\alpha(\text{recession}|\mathbf{e}) = 0$. Then

$$\Delta = \text{cost of recessions}$$

Suppose $\mu(\mathbf{e} = 0)$. Then

$$\Delta \propto \mathbf{L}_u \Delta \mathbf{U} + \Delta \mathbf{L}_u \mathbf{U}$$

Result

Proposition

An increase in matching efficiency reduces the welfare cost of business cycles:

$$\frac{\partial \Delta}{\partial z} < 0$$

For high levels of unemployment benefits a reduction in benefits reduces the cost of business cycles

$$\frac{\partial \Delta}{\partial b} > 0$$

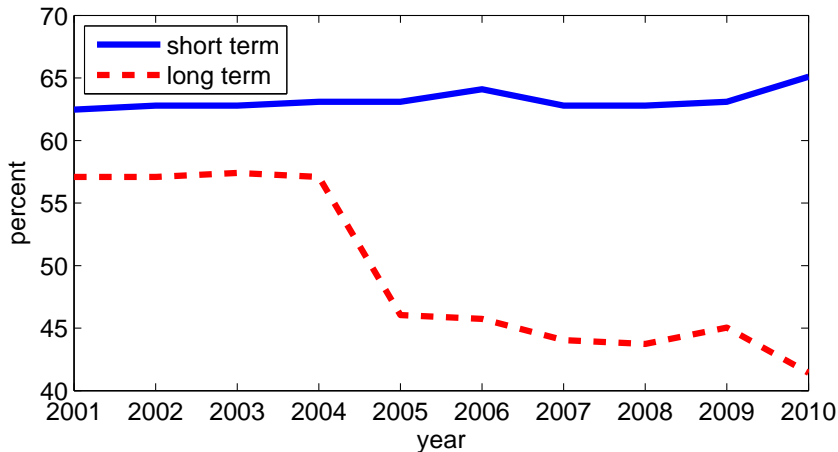
Quantitative analysis: German labor market reforms

- Why Germany?
- Comprehensive labor market reform in 2003-2005 (Hartz reforms) aimed at improving labor market flexibility
- There is substantial evidence that these reforms increased the non-cyclical component of the job finding rate

German Labor Market Reforms 2003-2005

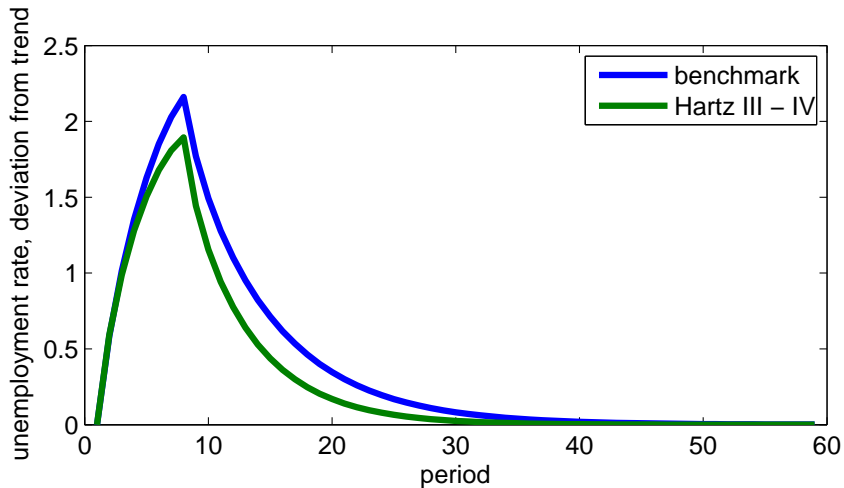
- Jan 2003 (Hartz I+II): Some wage subsidies and some deregulation of labor market
- Jan 2004 (Hartz III): Complete overhaul of the Federal Employment Agency $z \uparrow$
- Jan 2005 (Hartz IV): Complete overhaul of the unemployment insurance system $b \downarrow$

Figure: Average Net Replacement Rate, Germany 2001-2010



Source: OECD: (1) net replacement rates: OECD Tax-Benefit Modes, (2) population weights: OECD Family Database.

Figure: Unemployment Response to Job Separation Shock, Hartz III-IV



Results

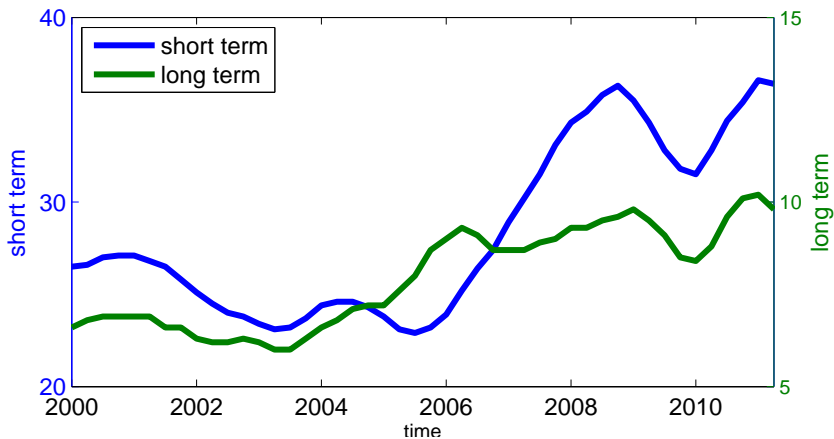
Welfare Cost of Business Cycles (Recessions)

	$\mu(\mathbf{e}) = \mu(\mathbf{u}) = 1$		$\mu(\mathbf{e}) = 0$	
Pre-Reform	5.16%		7.70%	
Hartz III	4.42%	-14.3%	5.78%	-25.8%
Hartz IV	4.68%	-9.5%	6.48%	-16.8%
Hartz III+IV	4.06%	-21.4%	4.89%	-37.2%

Conclusion

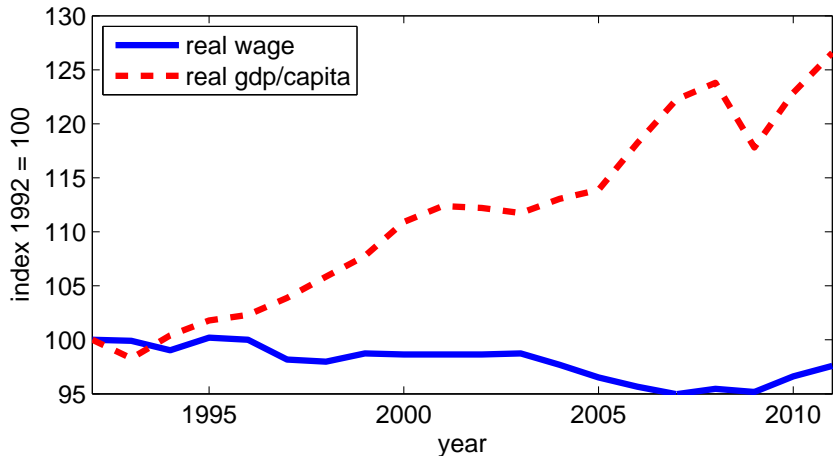
- Economic theory suggests that labor market reforms that increase labor market flexibility reduce non-cyclical unemployment and! reduce the welfare cost of business cycles
- German experience shows that these effects can be large

Figure: Quarterly Job Finding Rates by Unemployment Duration, Germany 2000Q1-2011Q2



Source: Bundesagentur für Arbeit (2011).

Figure: Real Wage and Real GDP per Capita (1992 = 100), Germany 1992-2011



Source: Statistisches Bundesamt: annual real wage index (series: Reallohnindex) and annual real gdp per capita (series: Bruttoinlandsprodukt) normalized to 1992.

Quarterly Job Separation Rate, Germany 2005Q1 - 2011Q4

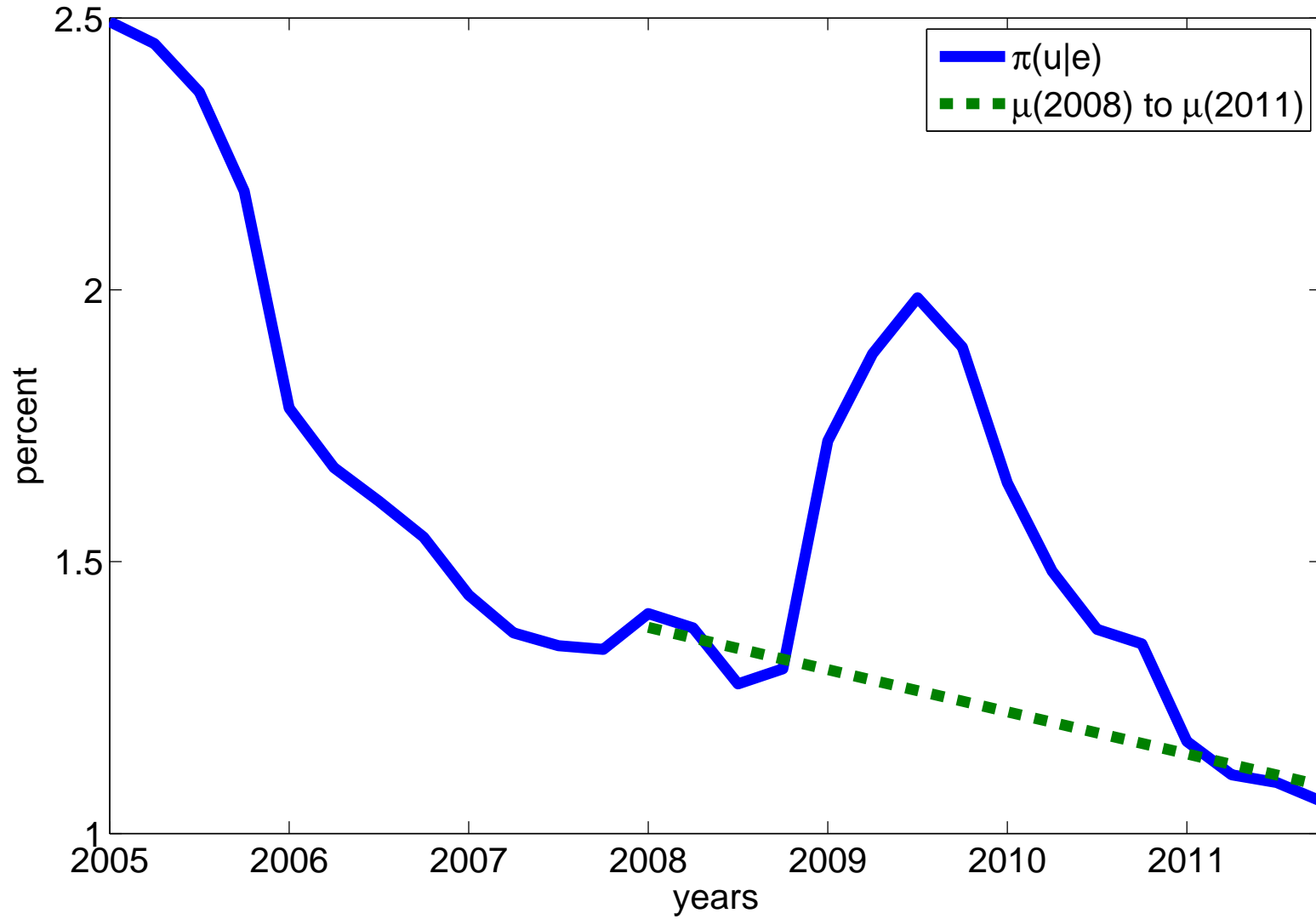
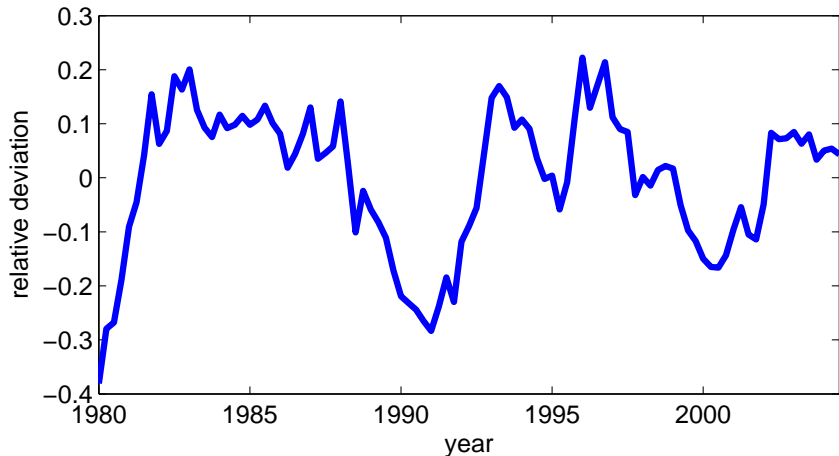
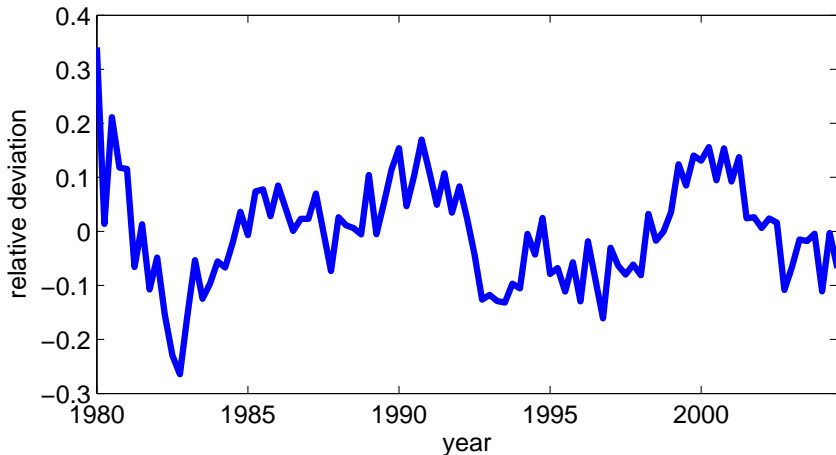


Figure: Deviation of Job Separation Rate from Trend, Germany 1980Q1-2004Q4



Source: Jung and Kuhn (2013).

Figure: Deviation of Job Finding Rate from Trend, Germany 1980Q1-2004Q4



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