Do labor market rigidities increase unemployment?

Evidence for 24 OECD countries over 1985-2013

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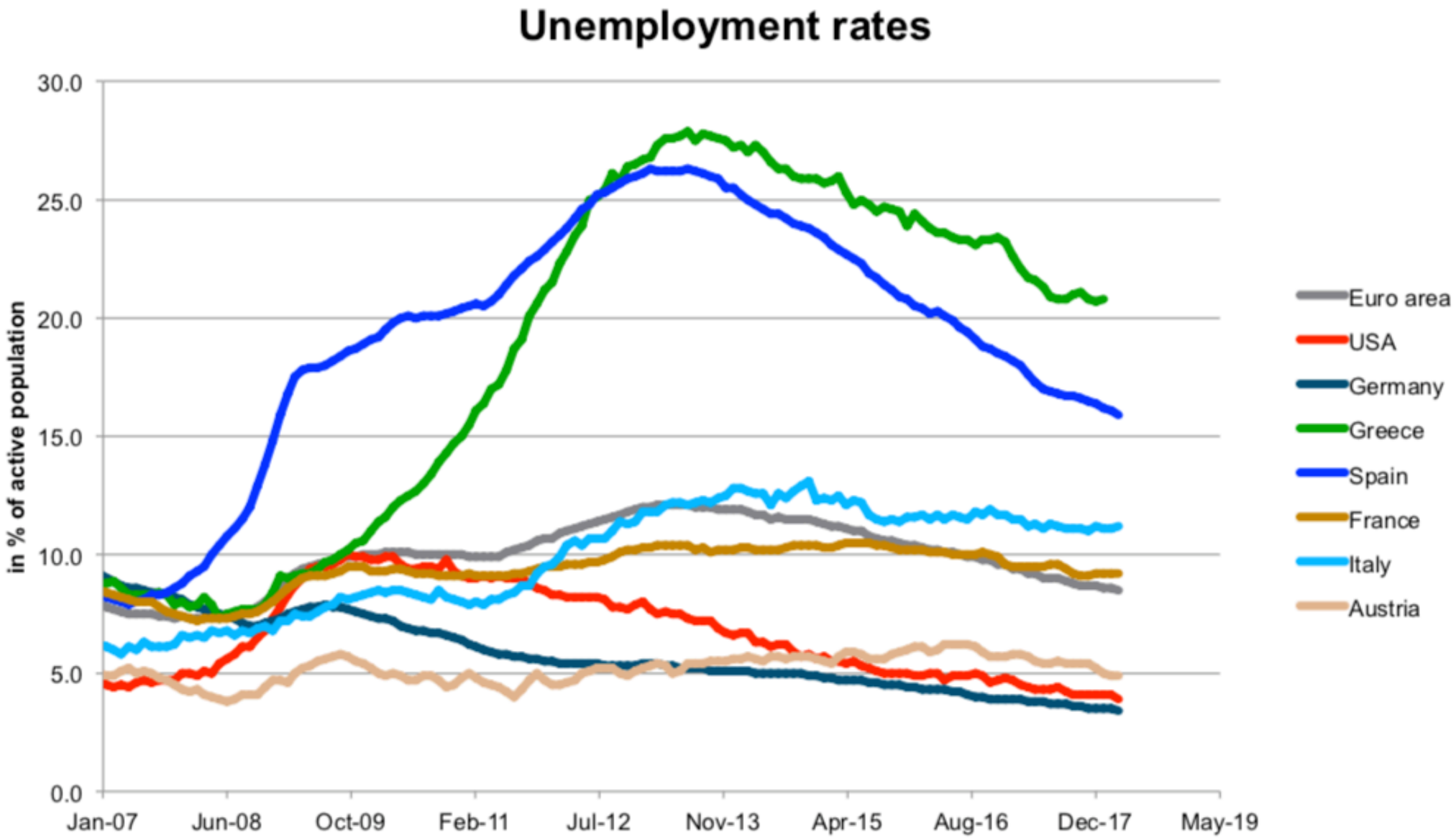
Motivation: Persistently high unemployment in several advanced countries in the aftermath of the financial crisis



Source: Eurostat.

Are labor market rigidities leading to persistently high unemployment rates?

Past literature

- Influential studies emphasize the **link between labor market rigidities** imposed by protective labor market institutions **and rising unemployment** (e.g. OECD, 1994; Siebert, 1997; IMF, 2003; Nickell et al., 2005)
  - The focus in this literature is to **explain broad movements in unemployment by shifts in labor market institutions.**
  - **Typical variables:** trade union density, employment protection legislation, unemployment benefit replacement rate, tax wedge, active labor market policies, minimum wages.

- However, several empirical studies have shown that the **empirical evidence for the rigidity view is modest at best** (e.g. Howell et al., 2007; Baccaro, Rei, 2007; Stockhammer, Klär, 2011; Stockhammer et al. 2014).

Theoretical level: How has the NAIRU developed in advanced countries over recent years?

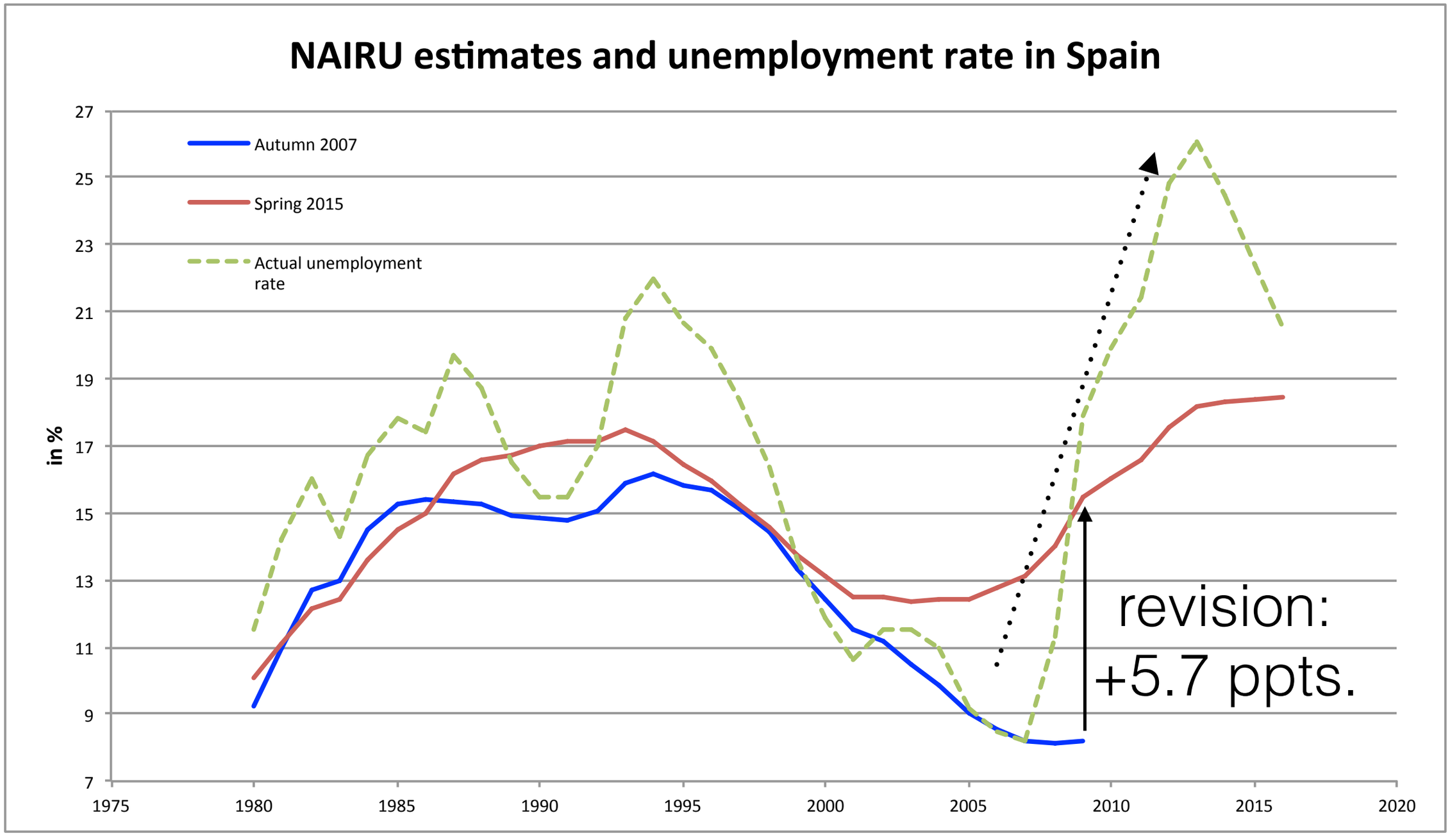
> “Structural unemployment is the rate of unemployment consistent with constant wage inflation (non-accelerating wage rate of unemployment (NAWRU)), or constant price inflation (non-accelerating inflation rate of unemployment (NAIRU)), given current economic conditions.“

OECD (2014): Glossary of Statistical Terms.

https://stats.oecd.org/glossary/detail.asp?ID=2580

Revisions and end-point-bias:

The pro-cyclicality of the Commission's NAIRU estimates



Data: AMECO (different forecast vintages)

Main motivation for empirical application

- Assess the impact of labor market institutions on unemployment in advanced countries, while controlling for other factors that might affect unemployment

- **Empirical strategy**
  - Estimate reduced form NAIRU models (common in the literature)
  - regress unemployment on change in inflation + controls for labor market institutions and macroeconomic factors
  - Assess whether commonly used 'NAIRU' estimates are a good proxy for 'structural unemployment'

- **Main contributions (going beyond the existing literature)**
  - Using a comprehensive set of macroeconomic and institutional variables
  - Accounting for a longer time frame
  - Larger OECD country group
  - Additional robustness checks

Basic econometric strategy

$$UNEMP_{i,t} = \beta_1 \Delta INFL_{i,t} + \beta_2 LMI_{i,t} + \beta_3 C_{i,t} + \gamma_1 FE_i + \gamma_2 FE_t + \epsilon_{i,t}$$

- **LMI**… Variables related to labour market institutions
- **C**… additional controls
- Both **country-fixed effects** and **time-fixed effects** are included.

- **Prior step:**
  - **Testing for cointegration (Maddala-Wu):** OLS & fixed effects are consistent.
- **Two estimation strategies:**
  - **Baseline:** OLS + Fixed Effects with panel-corrected standard errors (Beck, Katz, 1995)
  - **Check:** First difference estimator (annual data and five year averages)

Panel data: 24 OECD countries, 1985-2013

Dependent variable

Main explanatory variables: Labor market institutions

Controls / Alternative Explanations

		Data description
UNEMP		Unemployment rate
Δ INFL		Change in the growth rate of the harmonized con
Labor market institutions ($LMI_{i,t}$)		
EPL	(+-)	Strictness of employment protection, individual a
ALMP	(-)	Public expenditure and participant stocks on LM
UDens	(+)	Trade union density
UBR	(+)	Gross unemployment benefit replacement rate
UBR2	(+)	Net unemployment benefit replacement rate
TW	(+)	Average tax wedge (Single person at 100% of ave
MW	(+)	Real minimum wages (In 2015 constant prices at
Additional control variables ($C_{i,t}$)		
ACCU	(-)	Capital accumulation: real gross fixed capital for
LTI	(+)	Long-term interest rate
TFP		Total factor productivity (yearly growth rate)
TOTS		yearly growth rate in terms of trade index
Additional data on 'structural' unemployment		
NAIRU		Non-accelerating inflation rate of unemployment

Baseline results 1985-2011

	UNEMP				
	(1) FE	(2) FE	(3) FE	(4) FD	(5) FD
$\Delta INFL$	-0.163^{***}	-0.158^{***}	-0.452	-0.111^{***}	-0.202
	(0.046)	(0.038)	(0.276)	(0.020)	(0.242)
$UNEMP_{t-1}$	0.912^{***}	0.762^{***}		0.383^{***}	
	(0.031)	(0.035)		(0.042)	
ACCU		-0.543^{***}	-1.985^{***}	-1.172^{***}	-2.481^{***}
		(0.181)	(0.452)	(0.121)	(0.495)
LTI		0.302^{***}	0.840^{***}	-0.050	0.291
		(0.074)	(0.158)	(0.065)	(0.236)
EPL	-0.505	0.977	2.590	-0.777	4.926^{**}
	(0.526)	(0.656)	(1.995)	(0.725)	(2.096)
ALMP	-0.024^{*}	-0.013	-0.055	-0.050^{***}	-0.014
	(0.014)	(0.013)	(0.034)	(0.017)	(0.038)
UDens	0.042	0.012	-0.032	0.083^{*}	-0.058
	(0.042)	(0.031)	(0.086)	(0.044)	(0.081)
UBR	0.045^{*}	0.015	-0.005	0.028^{***}	0.007
	(0.023)	(0.020)	(0.042)	(0.010)	(0.033)
TFP	-0.065	-0.041	-0.643^{***}	0.036^{**}	-0.334^{*}
	(0.061)	(0.050)	(0.200)	(0.015)	(0.183)
TOTS	-0.029	-0.005	0.040	0.003	-0.115^{*}
	(0.021)	(0.018)	(0.110)	(0.005)	(0.068)
Observations	305	299	74	275	52
R^2	0.824	0.869	0.759	0.694	0.695
Adjusted R^2	0.783	0.836	0.524	0.683	0.639
Data	annual	annual	5-year-avg	annual	5-year-avg

Findings

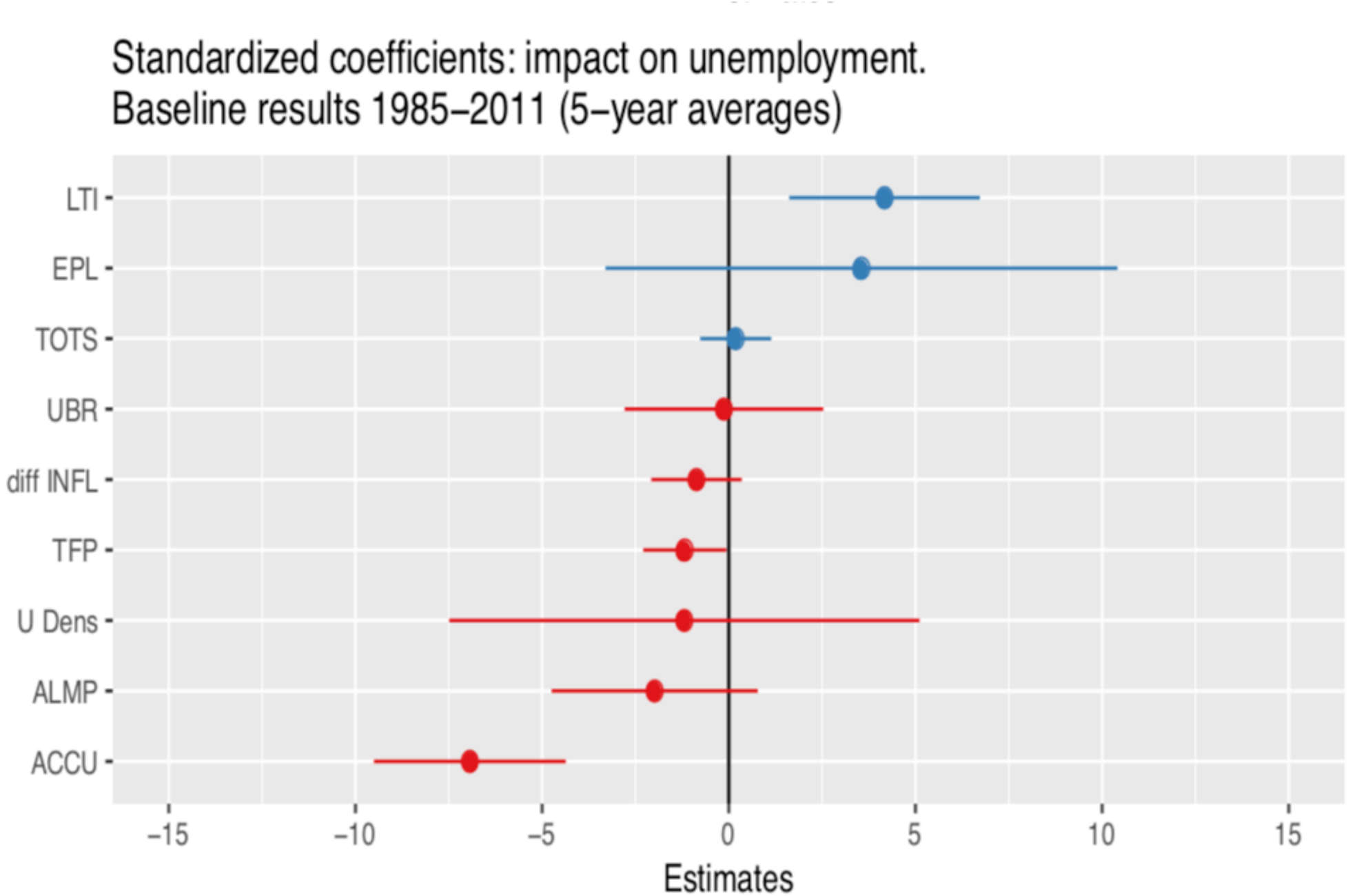
- **LMI variables** underperform in explaining 'structural unemployment'
  - Most LMI variables **signed as expected but not statistically significant across specifications**
  - **Cyclical variables** are important determinants, especially capital accumulation

- Are these econometric baseline findings **robust**?
- Extension and robustness checks

Introduce broad set of robustness checks

- Implement **variations in the dependent variable**
  - Use Kalman-filtered NAIRU estimates from the OECD as dependent variable (to proxy for 'structural unemployment').
- Analyze impact of **variations in the country group**
- Introduce **lag specifications**
  - Main argument: Institutional changes tend to affect the NAIRU with a lag
  - Finding: No evidence for importance of lags
- Consider **interaction terms**
  - Main argument: LMIs should be expected to have an effect on (structural) unemployment through their interactions

Economic relevance vs. statistical significance



Conclusions

- Need to **rethink the standard "NAIRU-story"**, according to which increased unemployment is mainly a problem of rigid labor market institutions
- LMIs do have an impact, but it is comparatively smaller than the **impact of macroeconomic factors**
- To understand the development of unemployment, researchers and policy-makers should mainly look at **aggregate demand**
- Stimulating **investment** as top policy priority

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Thank you for your attention

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