Wage Bargaining Regimes and Firms’ Adjustments to the Great Recession

Maddalena Ronchi* and Filippo di Mauro**

* Queen Mary University of London
** National University of Singapore

June 2017
Outline

- Analysis Preview
- Motivation
  - The Great Recession
- Literature review
  - Micro vs Macro data
- A new ECB database
  - Novel features
    - Descriptive evidence of WB in EU
- Empirical strategy and results
- Conclusions
This paper

**WHAT**: Tests if different degrees of downward wage rigidity (DWR) across Wage Bargaining (WB) set-ups affected firms adjustments to the Great Recession (GR) in EU as to changes in:

- Wages, Employment, Profits

**WHY**: Can different WB set-ups explain the different performance of labour markets across EU? Important policy implications

**Contribution**

Contributes to the literature on LM institutions and economic performance using ECB new high quality micro data comparable across-countries relating

1. The reaction of firms to the GR in 13 EU countries
2. Degree of centralisation of WB institutions at the firm-level
In line with *theoretical predictions*, we find that WB regimes play a crucial role in shaping the response of firms to a negative shock:

Firms subject to **centralised WB** systems - as opposed to decentralised ones - show stronger:

1. **DWR**: overall their wages are 5% higher after the GR
2. Employment reduction: share of firms decreasing in size is 4% higher
3. Profit reduction: additional cut in profit of more than 7%
Motivation
Motivation: The Great Recession (GR)

The GR had a heavy impact on labour markets in EU:
- Loss of around 4 million jobs
- Wept out the gains from almost 10 years of strong job creation
- Onset of a second recession between 2011 and 2013 with the loss of a further 1.8 million jobs across the euro area

Notable Feature
Considerable degree of cross-country heterogeneity in labour market adjustments
Some economies emerged relatively unscathed...
Others have seen steep decrease in employment...

- In some countries it returned at the pre-crisis level (CEE, dashed lines)
- In others it still lies well below its level in 2008 (continuous lines)
Can differences in DWR dictated by WB explain employment trends?

- **Dashed lines**: wages are negotiated mostly at the firm-level
  ⇒ **decentralised WB**, immediate fall in wages

- **Continuous lines**: wages are negotiated mostly at the sector-level
  ⇒ **centralised WB**, high DWR despite dramatic ↓ in employment
Motivation

Such patterns have re-opened a long standing debate on whether/to what extent the level of negotiation of WB shapes macro performance following economic shocks (Anderton et al, 2015; Fabiani et al, 2015; OECD Outlook 2013, 2016)

Why does the level of the negotiation matter?

Theoretical Predictions

WB set-ups taking place at a level other than the firm (centralised bargaining) prevent wages to adjust downwards during economic downturns, thus

- they can hamper the smooth functioning of labour markets
- and amplify the impact of a shock on employment

(Nickell and Andrews(1983), McDonald and Solow (1981))
Consider a small firm subject to multi-employer (ME) WB:

- Firm takes wages as exogenously fixed
- Chooses employment so that the wage equals its marginal productivity

A large aggregate demand shock such as the GR translates fully into employment losses if the cost of labour remains fixed.

On the contrary, at the firm-level both wages and employment are bargained:

- The bargained cost of labour could fall as a response to the fall in aggregate demand

The reduction of the labour force would be mitigated (Card, 1990; Nickell and Andrews, 1983; McDonald and Solow, 1981)
Motivation

How strong is the case -other than theoretical predictions - supporting reforms to enhance wage flexibility?

In the policy arena, recent labour reforms were passed in PT, GR or ES with the aim of easing wage adjustments

- Rationale: poor LM performance in those economies during the GR was due to a high degree of wage rigidity (OECD, 2013)

Despite the relevance of the issue, available empirical evidence comparable across countries and sectors is scarce (Visser, 2013)

⇒ Generally poor understanding and measurement of institutions
This analysis improves on measurement of WB set-ups and provides new evidence on the period 2006-2012:

- Using a **new micro-distributed database** relating firms’ adjustment mechanisms to measures on centralisation of WB systems at the *country-industry-firm size* level

- Checking if the shock is distributed across reductions in **wages, employment, and profits** in a theoretically consistent way
Literature: micro vs macro
Micro literature: limitations

When relying on **micro data**, centralised WB systems are shown to play a very important role:

- Inversely related to wage flex. and responsiv. to LM conditions (Rute Cardoso and Portela, 2009; Faggio and Nickell, 2005)
- Positively related to employm. reduction (Guimaraes et al., 2014)

However, only **single country-studies**, for which you need:

- Available micro-data on WB (not the case for CEE)
- Cross-section within country variation (Portugal)
- Over-time variation through deregulation/reforms (UK)

Micro-studies can focus on a very limited number of countries

Not suited for explaining the role of WB for heterogeneous performance across countries
Macro literature: limitations

Large **cross-country differences** in LM institutions has tradit. been identified as important explanatory factor for divergent economic performance of countries (Freeman, 2007). However

1. Country-level panel reg. not robust (Blanchflower, 2001)
2. Cannot **disentangle** the impact of instit. from the other events occurring simultaneously at the macro-level (Backer, 2005)
3. Cannot account for crucial factors at **micro-level** determining firms **endogenous sorting** into WB set-ups

New data at the **country-sector-firm size level** captures variation in WB within-country and deals with unobserved heterogeneity with a full battery of fixed effects
Distinction between levels is only a first approximation: many countries affected by the GR have **two-tier bargaining structures**

<table>
<thead>
<tr>
<th>Multi-level Bargaining</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Higher level of bargaining dominates:</em></td>
</tr>
<tr>
<td>Firm-level WB can <em>only supplement</em> multi-employer agreements influencing wages through &quot;wage-drift&quot; with respect to the wage floor determined at the sector-level</td>
</tr>
<tr>
<td><em>Favorability principle constraints adequate adjustment</em> to temporary shocks by cutting wages (same implications of single-level ME set-ups, Boeri (2014))</td>
</tr>
</tbody>
</table>
New harmonised micro-distributed database
The database used is the outcome of a merging procedure between two ECB databases:

- **CompNet**: repeated cross-section data from firm’s balance-sheet at the country-industry-firm size level
- **WDN**: cross-section survey; info on WB set-ups at the firm-level:
  - WB pre-dating the GR and stable until 2012: *time-invariant*
  - Possible to identify three WB set-ups for each cell:
    - **Centralised WB**: Multi-employer (ME) and, in two-tier countries only, Multi-level (ML)
    - **Firm-level** (FL) in non two-tier countries only
    - **No bargaining** regulation at all
Three possible adjustment mechanisms of interest:

1. **Labour costs per employee**: labour costs (wages and employers’ social security contribution) divided by the number of employees

2. **Profit margin**: EBIT over turnover

3. **Share of shrinking firms**: built using CompNet transition matrices
OECD: "In a number of countries is extremely difficult to localise "the" predominant bargaining level. Ideally it should be determined by accounting for the different levels and at which level most of the change in wages is being determined" (Employment Outlook 2013)
Both sector and size-class play an important role in determining allocation of firms into WB regimes: controlling for them alleviates concerns of endogeneity.

---

**Descriptives: WB across sectors/size-classes**

Two-tier

- Manufacturing
- Construction
- Trade
- Business services

Non Two-tier

- Manufacturing
- Construction
- Trade
- Business services

---

**Legend**

- % multi-level bargaining
- % multi-employer bargaining
- % firm-level bargaining
- % no bargaining

---

22 / 28
Empirical Specification and Results
Empirical Specification

We follow Blanchard and Wolfers (2000) by allowing for the negative shock to have a stronger effect in those cells characterised with a higher degree of WB centralisation

\[
y_{zsct} = \alpha + \eta Centr_{zsc} + \lambda FL_{zsc}+ \beta_1 Centr_{zsc} \cdot Crisis_t + \beta_2 FL_{zsc} \cdot Crisis_t + \tau \cdot t + \varphi cs + \pi sz + \chi cz + (\omega cst + \nu szt + \xi czt + \sigma cst^{2/3} + \delta szt^{2/3} + \varrho czt^{2/3}) + \varepsilon_{zsct}
\]

- \(zsct\) are respectively: size class, sector, country, time
- \(y_{zsct}\) is any of our dependent variables
- \(Centr, FL\) are the % of firms engaging in the WB set-ups; parameter of interests are \(\beta_1, \beta_2\), (omitted category: no bargaining)
- \(Crisis\) is a dummy equal to 1 after the shock
- Error terms clustered at the country-sector level
Results: Labour costs per employee

From (3): a 10pp (std) increase in

- % Centralised
  - additional increase in wages of 0.9% (2.9%) already in 2009
  - additional increase in wages of another 0.7% (2%) in the following two years

- % FL
  - not significant as expected

After the GR wages of firms in centralised regimes have adjusted downwards less than those of firms in decentralised ones: evidence of DWR
Results: Share of shrinking firms

Is the different degree in DWR linked to different employment dynamics?

From (3): a 10pp (std) increase in

- % Centralised
  - additional ↑ in % of shrinking firms of 4% (12%) after 2010

- % FL
  - not significant as expected

After the GR the share of firms cutting employment was higher in those cells with a higher share of firms subject to centralised bargaining
Do firms more affected by DWR cut profits more?

From (3): a 10pp (std) increase in

- % Centralised
  - additional ↓ in PM of 7% (21%)
- % FL
  - not significant as expected

After the outbreak of the GR firms subject to more DWR have been decreasing PM more than firms in decentralised set-ups

Results: Profit Margin

<table>
<thead>
<tr>
<th>Profit Margin</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>%Centralised</td>
<td>-0.00523</td>
<td>0.000969</td>
<td>0.000981</td>
</tr>
<tr>
<td></td>
<td>(0.0148)</td>
<td>(0.0118)</td>
<td>(0.0118)</td>
</tr>
<tr>
<td>Firm-level</td>
<td>0.0306</td>
<td>0.0220*</td>
<td>0.0220*</td>
</tr>
<tr>
<td></td>
<td>(0.0182)</td>
<td>(0.0127)</td>
<td>(0.0127)</td>
</tr>
<tr>
<td>%Centr*Crisis</td>
<td>0.0226**</td>
<td>0.0133*</td>
<td>0.0134*</td>
</tr>
<tr>
<td></td>
<td>(0.00933)</td>
<td>(0.00705)</td>
<td>(0.00707)</td>
</tr>
<tr>
<td>FL*Crisis</td>
<td>0.0355</td>
<td>0.0447*</td>
<td>0.0448*</td>
</tr>
<tr>
<td></td>
<td>(0.0251)</td>
<td>(0.0265)</td>
<td>(0.0265)</td>
</tr>
<tr>
<td>%Centr*Crisis(1)</td>
<td>-0.0168**</td>
<td>-0.0214**</td>
<td>-0.0215**</td>
</tr>
<tr>
<td></td>
<td>(0.00656)</td>
<td>(0.00898)</td>
<td>(0.00901)</td>
</tr>
<tr>
<td>FL*Crisis(1)</td>
<td>-0.0298*</td>
<td>-0.0252</td>
<td>-0.0253</td>
</tr>
<tr>
<td></td>
<td>(0.0153)</td>
<td>(0.0164)</td>
<td>(0.0164)</td>
</tr>
<tr>
<td>%Centr*Crisis(2)</td>
<td>-0.00964*</td>
<td>-0.0137</td>
<td>-0.0137</td>
</tr>
<tr>
<td></td>
<td>(0.00531)</td>
<td>(0.00838)</td>
<td>(0.00840)</td>
</tr>
<tr>
<td>FL*Crisis(2)</td>
<td>-0.0174</td>
<td>-0.00823</td>
<td>-0.00826</td>
</tr>
<tr>
<td></td>
<td>(0.0136)</td>
<td>(0.0154)</td>
<td>(0.0154)</td>
</tr>
</tbody>
</table>

Observations: 795
R-squared: 0.510 0.762 0.762
Country FE: YES
Sector FE: YES
Size FE: YES
Year FE: YES
C_S FE: YES
S_Z FE: YES
Z_C FE: YES
C_S_Trend: YES
S_Z_Trend: YES
Z_Trend: YES
C_S_Trend^2/3: YES
S_Z_Trend^2/3: YES
Z_Trend^2/3: YES

Clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Conclusions

- Better data improves cross-country evidence
- Results are theoretically consistent and economically meaningful
- Currently working on a specification with country-specific timing of shock

By preventing wages to adjust downwards during the GR, centralised WB regimes led to:

- an additional increase in the share of firms cutting employment of 4% → amplify the impact of the GR on employment
- an additional decrease in profit margin of 7% → additional channel for firms suffering from DWR
Thank you for your attention!
Appendix
Time-dependent wage rules is when the timing of the adjustment is exogenously given and does not depend on the state of the economy (Layard et al. 1991)

- Infrequent bargaining increase the degree of nominal inertia of the economy
- When collective contracts are not renegotiated on a continuous fashion, firms under already settled agreements will experience severe employment losses after a large demand shock

Time-dependent process exceeds 60% in the EA countries, while it is less than 35% for non-EA ones: possibly in relation to the more widespread diffusion of collective bargaining agreements in the EA.
Two-tier

Non two-tier

%employee covered by FL barg

%employee covered by ME barg

FR
IT
PT
EE
HU
LT
MT
PL
Average Length

Average Collective Agreement Length (Years)

Source: Du Caju et al. (2006)
Descriptives: "special cases"
WDN1 WDN3 comparison

TT WDN1
- Manufacturing
- Construction
- Trade
- Market services

TT WDN3
- Manufacturing
- Construction
- Trade
- Business services

NTT WDN1
- Manufacturing
- Construction
- Trade
- Market services

NTT WDN3
- Manufacturing
- Construction
- Trade
- Business services

Legend:
- mean of both
- mean of centr
- mean of onlyfirm
- mean of nobarg
WDN1 WDN3 comparison
<table>
<thead>
<tr>
<th>Year</th>
<th>AT</th>
<th>EE</th>
<th>ES</th>
<th>FR</th>
<th>HU</th>
<th>IT</th>
<th>LT</th>
<th>PL</th>
<th>PT</th>
<th>SK</th>
<th>SI</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>2002</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2003</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>2004</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2005</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2006</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2007</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>2008</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2009</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2010</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2011</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2012</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

*Source: Vissier, ICTWSS: Database on Institutional characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts.*
Preliminary Evidence: Labour Costs per Employee

Labour costs per employee

Year (2007=base year)

2007 2008 2009 2010 2011 2012

LC per employee

1.15
1.1
1.05
1.0
1

Wages Centr
Wages Decentr

Only countries with data for 2012
Preliminary Evidence: % Shrinking Firms

% Shrinking firms

Year (2007=base year)

2007 2008 2009 2010 2011 2012

% Shrinking Firms

% Shrinking Firms Centr % Shrinking Firms Decentr

Only countries with data for 2012
Preliminary Evidence: Labour Costs per Employee (2)

Delta Wages
Centralised vs Decentralised Cells

% Change Pre-Post Crisis

Frequency

Excluding SK, SI & outliers

Change in Wages Centr
Change in Wages Decentr
Delta PM
Centr vs Decentr Country-Sector-Size

Excluding Outliers

Change in PM Centr
Change in PM Decentr
Preliminary Evidence: % Shrinking Firms (2)

Delta %Shrink.Firms
Centr vs Decentr Country-Sector-Size

Frequency
150
100
50
0

% Change Pre-Post Crisis
-0.5 0 0.5 1 1.5

Change %Shrink.Firms C  Change %Shrink.Firms D
Labour Costs per Employee - Non Parametric Country-Trends
<table>
<thead>
<tr>
<th>Labour Costs per Employee</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>%Centralised</td>
<td>-4.754*</td>
<td>-2.789</td>
<td>-2.791</td>
</tr>
<tr>
<td></td>
<td>(2.692)</td>
<td>(2.095)</td>
<td>(2.097)</td>
</tr>
<tr>
<td>Firm-level</td>
<td>-2.914</td>
<td>0.769</td>
<td>0.764</td>
</tr>
<tr>
<td></td>
<td>(2.659)</td>
<td>(1.493)</td>
<td>(1.493)</td>
</tr>
<tr>
<td>%Centr*Crisis</td>
<td>1.502***</td>
<td>2.539***</td>
<td>2.538***</td>
</tr>
<tr>
<td></td>
<td>(0.498)</td>
<td>(0.660)</td>
<td>(0.660)</td>
</tr>
<tr>
<td>FL*Crisis</td>
<td>4.213</td>
<td>4.204</td>
<td>4.210</td>
</tr>
<tr>
<td></td>
<td>(3.618)</td>
<td>(3.367)</td>
<td>(3.374)</td>
</tr>
<tr>
<td>%Centr*Crisis(+1)</td>
<td>0.436</td>
<td>0.993**</td>
<td>0.995**</td>
</tr>
<tr>
<td></td>
<td>(0.347)</td>
<td>(0.382)</td>
<td>(0.383)</td>
</tr>
<tr>
<td>FL*Crisis(+1)</td>
<td>-3.098</td>
<td>-3.003</td>
<td>-3.001</td>
</tr>
<tr>
<td></td>
<td>(2.138)</td>
<td>(2.611)</td>
<td>(2.611)</td>
</tr>
<tr>
<td>%Centr*Crisis(+2)</td>
<td>-0.0326</td>
<td>0.563</td>
<td>0.567</td>
</tr>
<tr>
<td></td>
<td>(0.462)</td>
<td>(0.367)</td>
<td>(0.368)</td>
</tr>
<tr>
<td>FL*Crisis(+2)</td>
<td>-0.598</td>
<td>-1.749</td>
<td>-1.747</td>
</tr>
<tr>
<td></td>
<td>(1.750)</td>
<td>(1.663)</td>
<td>(1.662)</td>
</tr>
</tbody>
</table>

Observations: 812
R-squared: 0.961, 0.993, 0.993

Country FE: YES
Sector FE: YES
Size FE: YES
Year FE: YES, YES, YES
C_S FE: YES, YES, YES
S_Z FE: YES, YES, YES
Z_C FE: YES, YES, YES
C_S_Trend: YES, YES, YES
S_Z_Trend: YES, YES, YES
C_Z_Trend: YES, YES, YES
C_S_Trend^2/3: YES
S_Z_Trend^2/3: YES
C_Z_Trend^2/3: YES

Clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Profit Margin - Non Parametric Country-Trends

Graphs by Country name

DE

EE

ES

FR

IT

LT

PL

PT

SK

SI

2006 2008 2010 2012

year

0 0.005 0.01 0.015 0.02 0.025 0.03 0.035 0.04 0.045

0.02 -0.02 -0.025 -0.03 -0.035 -0.04 -0.045

0.01 0 0.015 0.02 0.025 0.03 0.035

0.02 -0.02 -0.025 -0.03 -0.035 -0.04 -0.045

0.01 0 0.015 0.02 0.025 0.03 0.035

0.01 0 0.015 0.02 0.025 0.03 0.035

2006 2008 2010 2012

Back
## Country-specific timing: Labour costs

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Labour Costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>per Employee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ctry Crisis</strong></td>
<td>-1.883***</td>
<td>-1.392***</td>
<td>-1.391***</td>
</tr>
<tr>
<td></td>
<td>(0.426)</td>
<td>(0.442)</td>
<td>(0.443)</td>
</tr>
<tr>
<td><strong>%Centralised</strong></td>
<td>-4.712</td>
<td>-0.551</td>
<td>-0.549</td>
</tr>
<tr>
<td></td>
<td>(2.987)</td>
<td>(2.371)</td>
<td>(2.372)</td>
</tr>
<tr>
<td><strong>Firm-level</strong></td>
<td>-0.336</td>
<td>0.153</td>
<td>0.149</td>
</tr>
<tr>
<td></td>
<td>(2.811)</td>
<td>(1.880)</td>
<td>(1.881)</td>
</tr>
<tr>
<td><strong>%Centr*Ctry Crisis</strong></td>
<td>1.961***</td>
<td>1.868***</td>
<td>1.865***</td>
</tr>
<tr>
<td></td>
<td>(0.463)</td>
<td>(0.549)</td>
<td>(0.549)</td>
</tr>
<tr>
<td><strong>FL*Ctry Crisis</strong></td>
<td>5.688*</td>
<td>6.364**</td>
<td>6.368**</td>
</tr>
<tr>
<td></td>
<td>(3.083)</td>
<td>(3.053)</td>
<td>(3.055)</td>
</tr>
<tr>
<td><strong>Ctry Crisis(+1)</strong></td>
<td>0.291</td>
<td>-0.0728</td>
<td>-0.0732</td>
</tr>
<tr>
<td></td>
<td>(0.245)</td>
<td>(0.312)</td>
<td>(0.312)</td>
</tr>
<tr>
<td><strong>%Centr*Ctry Crisis(+1)</strong></td>
<td>0.555*</td>
<td>1.067***</td>
<td>1.066***</td>
</tr>
<tr>
<td></td>
<td>(0.296)</td>
<td>(0.373)</td>
<td>(0.373)</td>
</tr>
<tr>
<td><strong>FL*Ctry Crisis(+1)</strong></td>
<td>-5.022**</td>
<td>-2.772</td>
<td>-2.766</td>
</tr>
<tr>
<td></td>
<td>(1.885)</td>
<td>(2.851)</td>
<td>(2.862)</td>
</tr>
<tr>
<td><strong>Ctry Crisis(+2)</strong></td>
<td>-0.623</td>
<td>0.230</td>
<td>0.232</td>
</tr>
<tr>
<td></td>
<td>(0.462)</td>
<td>(0.379)</td>
<td>(0.379)</td>
</tr>
<tr>
<td><strong>%Centr*Ctry Crisis(+2)</strong></td>
<td>1.020*</td>
<td>0.582</td>
<td>0.580</td>
</tr>
<tr>
<td></td>
<td>(0.553)</td>
<td>(0.458)</td>
<td>(0.458)</td>
</tr>
<tr>
<td><strong>FL*Ctry Crisis(+2)</strong></td>
<td>1.285</td>
<td>-0.327</td>
<td>-0.323</td>
</tr>
<tr>
<td></td>
<td>(1.562)</td>
<td>(1.178)</td>
<td>(1.179)</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>920</td>
<td>920</td>
<td>920</td>
</tr>
<tr>
<td><strong>R-squared</strong></td>
<td>0.963</td>
<td>0.991</td>
<td>0.991</td>
</tr>
<tr>
<td><strong>Country FE</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>Sector FE</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>Size FE</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>Year FE</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>C_S FE</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>S_Z FE</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>Z_C FE</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>C_S_Trend</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>S_Z_Trend</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>C_Z_Trend</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>C_S_Trend^2/3</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>S_Z_Trend^2/3</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>C_Z_Trend^2/3</strong></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
## Country-specific timing: Employment

<table>
<thead>
<tr>
<th>Share of Shrinking Firms</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ctry Crisis</td>
<td>0.124***</td>
<td>0.0602</td>
<td>0.0557</td>
</tr>
<tr>
<td></td>
<td>(0.0238)</td>
<td>(0.0399)</td>
<td>(0.0390)</td>
</tr>
<tr>
<td>%Centralised</td>
<td>0.0627</td>
<td>-0.0361</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0861)</td>
<td>(0.0579)</td>
<td></td>
</tr>
<tr>
<td>Firm-level</td>
<td>0.0394</td>
<td>0.117</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.169)</td>
<td>(0.0903)</td>
<td></td>
</tr>
<tr>
<td>%Centr*Ctry Crisis</td>
<td>-0.0943***</td>
<td>-0.0824**</td>
<td>-0.0833***</td>
</tr>
<tr>
<td></td>
<td>(0.0329)</td>
<td>(0.0309)</td>
<td>(0.0294)</td>
</tr>
<tr>
<td>FL*Ctry Crisis</td>
<td>-0.0283</td>
<td>-0.0482</td>
<td>0.0250</td>
</tr>
<tr>
<td></td>
<td>(0.145)</td>
<td>(0.105)</td>
<td>(0.0774)</td>
</tr>
<tr>
<td>Ctry Crisis(+1)</td>
<td>-0.0118</td>
<td>-0.0573***</td>
<td>-0.0603***</td>
</tr>
<tr>
<td></td>
<td>(0.0180)</td>
<td>(0.0204)</td>
<td>(0.0207)</td>
</tr>
<tr>
<td>%Centr*Ctry Crisis(+1)</td>
<td>-0.00342</td>
<td>0.0211</td>
<td>0.0202</td>
</tr>
<tr>
<td></td>
<td>(0.0162)</td>
<td>(0.0149)</td>
<td>(0.0134)</td>
</tr>
<tr>
<td>FL*Ctry Crisis(+1)</td>
<td>-0.0179</td>
<td>-0.0491</td>
<td>-0.0212</td>
</tr>
<tr>
<td></td>
<td>(0.0791)</td>
<td>(0.0669)</td>
<td>(0.0683)</td>
</tr>
<tr>
<td>Ctry Crisis(+2)</td>
<td>-0.0316</td>
<td>-0.0790***</td>
<td>-0.0819***</td>
</tr>
<tr>
<td></td>
<td>(0.0264)</td>
<td>(0.0219)</td>
<td>(0.0228)</td>
</tr>
<tr>
<td>%Centr*Ctry Crisis(+2)</td>
<td>0.0164</td>
<td>0.0588**</td>
<td>0.0596**</td>
</tr>
<tr>
<td></td>
<td>(0.0245)</td>
<td>(0.0273)</td>
<td>(0.0282)</td>
</tr>
<tr>
<td>FL*Ctry Crisis(+2)</td>
<td>-0.0534</td>
<td>-0.0475</td>
<td>0.00457</td>
</tr>
<tr>
<td></td>
<td>(0.0958)</td>
<td>(0.0643)</td>
<td>(0.0747)</td>
</tr>
</tbody>
</table>

Observations: 719
R-squared: 0.694, 0.897, 0.896
C_S FE: YES, YES, YES
S_Z FE: YES, YES, YES
Z_C FE: YES, YES, YES
Year FE: YES, YES, YES
C_S_Trend: YES, YES, YES
S_Z_Trend: YES, YES, YES
C_Z_Trend: YES, YES, YES
C_S_Trend^2/3: YES, YES, YES
S_Z_Trend^2/3: YES, YES, YES
C_Z_Trend^2/3: YES, YES, YES

Clustered standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
### Country-specific timing: Profit Margin

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit Margin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ctry Crisis</td>
<td>-0.0239***</td>
<td>-0.0106</td>
<td>-0.00905</td>
</tr>
<tr>
<td></td>
<td>(0.00810)</td>
<td>(0.00705)</td>
<td>(0.00707)</td>
</tr>
<tr>
<td>%Centralised</td>
<td>-0.00371</td>
<td>0.00493</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0152)</td>
<td>(0.0112)</td>
<td></td>
</tr>
<tr>
<td>Firm-level</td>
<td>0.0240</td>
<td>0.0231*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0185)</td>
<td>(0.0119)</td>
<td></td>
</tr>
<tr>
<td>%Centr*Ctry Crisis</td>
<td>0.0298***</td>
<td>0.0216***</td>
<td>0.0200**</td>
</tr>
<tr>
<td></td>
<td>(0.00998)</td>
<td>(0.00778)</td>
<td>(0.00761)</td>
</tr>
<tr>
<td>FL*Ctry Crisis</td>
<td>0.0687***</td>
<td>0.0811***</td>
<td>0.0705***</td>
</tr>
<tr>
<td></td>
<td>(0.0231)</td>
<td>(0.0195)</td>
<td>(0.0197)</td>
</tr>
<tr>
<td>Ctry Crisis(+1)</td>
<td>0.0204***</td>
<td>0.0341***</td>
<td>0.0349***</td>
</tr>
<tr>
<td></td>
<td>(0.00426)</td>
<td>(0.00883)</td>
<td>(0.00911)</td>
</tr>
<tr>
<td>%Centr*Ctry Crisis(+1)</td>
<td>-0.0205***</td>
<td>-0.0302***</td>
<td>-0.0311***</td>
</tr>
<tr>
<td></td>
<td>(0.00557)</td>
<td>(0.00969)</td>
<td>(0.0100)</td>
</tr>
<tr>
<td>FL*Ctry Crisis(+1)</td>
<td>-0.0445***</td>
<td>-0.0314*</td>
<td>-0.0375**</td>
</tr>
<tr>
<td></td>
<td>(0.0141)</td>
<td>(0.0156)</td>
<td>(0.0166)</td>
</tr>
<tr>
<td>Ctry Crisis(+2)</td>
<td>0.0132***</td>
<td>0.0321***</td>
<td>0.0336***</td>
</tr>
<tr>
<td></td>
<td>(0.00361)</td>
<td>(0.00765)</td>
<td>(0.00788)</td>
</tr>
<tr>
<td>%Centr*Ctry Crisis(+2)</td>
<td>-0.00956***</td>
<td>-0.0248***</td>
<td>-0.0266***</td>
</tr>
<tr>
<td></td>
<td>(0.00350)</td>
<td>(0.00784)</td>
<td>(0.00820)</td>
</tr>
<tr>
<td>FL*Ctry Crisis(+2)</td>
<td>-0.00977</td>
<td>0.00320</td>
<td>-0.00655</td>
</tr>
<tr>
<td></td>
<td>(0.00991)</td>
<td>(0.00954)</td>
<td>(0.0108)</td>
</tr>
</tbody>
</table>

- **Observations**: 795
- **R-squared**: 0.542, 0.809, 0.811
- **Sector FE**: YES
- **Size FE**: YES
- **Year FE**: YES, YES, YES
- **C_S FE**: YES, YES, YES
- **S_Z FE**: YES, YES
- **Z_C FE**: YES, YES
- **C_S_Trend**: YES, YES
- **S_Z_Trend**: YES, YES
- **C_Z_Trend**: YES, YES
- **C_S_Trend^2/3**: YES
- **S_Z_Trend^2/3**: YES
- **C_Z_Trend^2/3**: YES

Clustered standard errors in parentheses

- *** p<0.01
- ** p<0.05
- * p<0.1