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Employment protection and firm-level job reallocation: Adjusting for coverage

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Research question and relevant literature

Research question

Impact of employment protection legislation (EPL) on firms' employment adjustment in Europe over 2001-2013

Related literature

- In theory, EPL increases labor adjustment costs for firms and restrains job creation and job destruction (Benolita and Bertola 1990, Mortensen and Pissarides 2011)
- However, empirical evidence is surprisingly inconclusive (Scarpetta 2014)
  - Country studies exploiting changes in EPL policies over time (Autor et al. 2007)
  - Studies exploiting cross-country, time and sectoral variation (Haltiwanger et al. 2014)
  - Country studies exploiting firm-size-related EPL exemptions (Schivardi and Torrini 2008)

Contribution and Findings

Contribution

We exploit firm-size related exemptions to EPL to identify the impact of EPL on firms' employment adjustment

- Cross-country dimension using harmonized firm-based cross-country dataset developed by CompNet
- Improve on OECD's EPL indicators by adjusting them to account for differences in coverage across size classes
- Illustrate the importance of the adjustment for EPL coverage by estimating the effect of the original and adjusted EPL on firm-level job reallocation
- Evaluate the impact of the global financial crisis

Findings

EPL hinders employment growth at the firm level and increases the share of firms remaining in the same size class once we account for firm-size related exemptions to EPL.

Data

CompNet dataset

- Combining the 4th and 5th vintage, labor module
- Level of aggregation: country-industry-size class-year variation
- Transition matrixes with the share of firms that move between size classes during three-year periods
- Continuing firms
- Removing “cells” with less than 50 firms and countries with sampling issues (DE, AT)
- 11 EU countries, 9 macro-sectors, 5 size classes and 9 rolling windows over 2001-2013

OECD EPL index

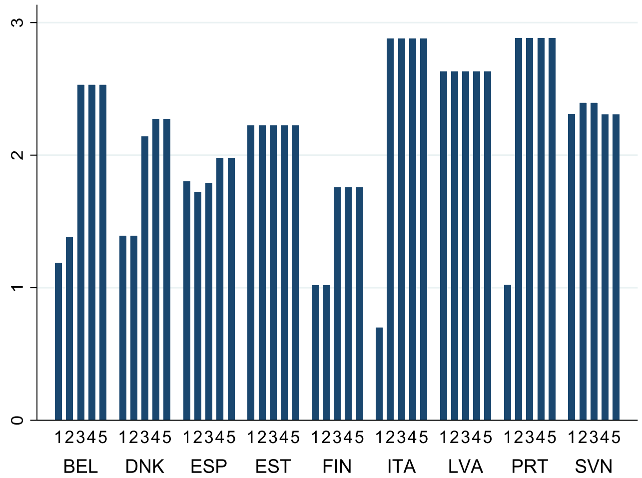
- EPL data available for 9 countries: BE, DK, EE, FI, IT, LV, PT, SI, ES

OECD's EPL for regular contracts and its adjustment

Level 1	Level 2	Level 3		Level 4
Regular contracts, including additional provision for collective dismissals	Regular contracts	Procedural inconvenience **(1/3)**	1	Notification procedures
			2	Delay involved before notice can start
		Notice and severance pay for no-fault individual dismissal **(1/3)**	3	Length of the notice period at 9 months tenure
				Length of the notice period at 4 years tenure
				Length of the notice period at 20 years tenure
			4	Severance pay at 9 months tenure
				Severance pay at 4 years tenure
				Severance pay at 20 years tenure
		Difficulty of dismissal **(1/3)**	5	Definition of justified or unfair dismissal
			6	Length of trial period
			7	Compensation following unfair dismissal
			8	Possibility of reinstatement following unfair dismissal
			9	Maximum time to make a claim of unfair dismissal
	Collective dismissals		18	Definition of collective dismissal
			19	Additional notification requirements in case of collective dismissals
			20	Additional delays involved in case of collective dismissals
			21	Other special costs to employers in case of collective dismissals

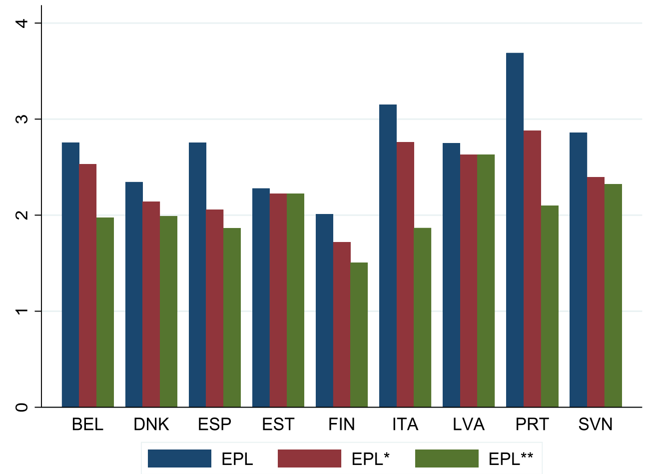
- OECD's EPL measures vary over countries and years
- for regular contracts, it is a weighted average of 17 subindexes
- we adjust them for the share of permanent employees: **EPL***
- and for size-related exemptions by modifying the value of each subindex for size classes with exemptions: **EPL****
    - a measure of EPL that varies across countries, years and size classes

EPL**: Coverage-adjusted EPL by firm size, 2009



Note: Numbers 1 to 5 refer to the following size classes in terms of employees: 1-9, 10-19, 20-49, 50-249 and more than 249.

OECD EPL, EPL* and EPL** at country level, 2009



Note: EPL refers to the original OECD measure; EPL* is the OECD measure scaled by the share of permanent employees and EPL** is the adjusted EPL (both scaled by the share of permanent employees and adjusted for size-related EPL exemptions).

Empirical strategy

To assess the importance of size-related EPL exemptions for the relationship between EPL and firm employment dynamics, we consider two approaches:

1. Given that the most common threshold for EPL exemptions is 20 employees, we test whether countries with these exemptions have a lower share of firms growing over the 20-employee threshold, all else equal.
2. As a generalization, we pool together all size classes and test whether different EPL indexes (original EPL, EPL*, EPL**) have significant impact on the share of firms from any size class that move to a higher size class, to a lower size class, or remain in the same size class over a three-year period.

(1) Threshold effect

Q: Is the share of firms growing over the 20-employee threshold lower in countries with EPL exemptions for firms with less than 20 employees?

$$\frac{y_{cit}^{20E+}}{y_{cit}^{50E+}} = \beta_0 + \beta_1 EPL20_{ct} + \beta_2 (crisis_t * EPL20_{ct}) + \delta_c + \delta_i + \delta_t + \varepsilon_t \qquad (1)$$

- **Dependent variable:** share of firms growing over the 20-employee threshold relative to the share growing over 50-employee threshold in country *c*, industry *i*, and initial year *t*

- **Key variable of interest:** dummy $EPL20_{ct}$ equal to 1 if country *c* has an EPL exemption for firms with 10-19 employees in year *t*

- Controlling for country- and sector- and time-specific drivers of firm growth

(1) Threshold effect: Results

OLS estimates of model (1)

	Relative fraction of firms growing over 20E threshold $y_{cit}^{20E+}/y_{cit}^{50E+}$	
Variables/ Model	(1)	(2)
$EPL20_{ct}$	-0.12+	-0.18*
	(0.068)	(0.083)
$Crisis_t$ * $EPL20_{ct}$		0.11
		(0.074)
Constant	2.49**	2.50**
	(0.094)	(0.095)
Country, Sector and Year FEs	YES	YES
R-squared	0.71	0.71
Observations	697	697

Notes: Standard errors in parentheses, ** p<0.01, * p<0.05, + p<0.1

Countries with **EPL exemption** for firms with 10-19 employees have significantly **lower** relative **share of firms growing** over the 20-employee threshold

⇨ firms below the exemption threshold are discouraged from growing in order to avoid stricter regulation

(2) Generalization: Fractional logit model

Q: Impact of EPL on the share of firms from any size class that move to a higher size class, to a lower size class, or remain in the same size class over a three-year period.

Modelling the share of firms

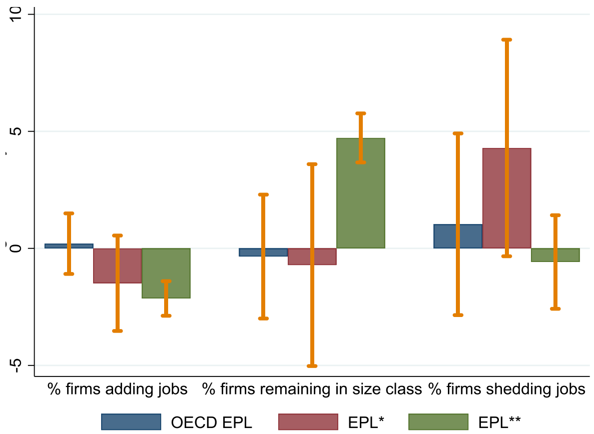
- moving to a higher size class ($\boldsymbol{y}^{+}$),
- moving to a lower size class ($\boldsymbol{y}^{-}$) or
- remaining in the same size class ($\boldsymbol{y}^{\sim}$)

$$\boldsymbol{E(y_{cist}) = G(\alpha + \beta_1 EPL_{cst} + \beta_2 X_{cist} + \beta_3 y_{EEist} + \gamma_c + \gamma_i + \gamma_s + \gamma_t)}$$

- $\boldsymbol{y}$ can be $\boldsymbol{y}^{+}$, $\boldsymbol{y}^{-}$ or $\boldsymbol{y}^{\sim}$
- $\boldsymbol{EPL}$ can be OECD EPL, EPL* or EPL**
- $\boldsymbol{X_{cist}}$ are control variables: business cycle, tax exemptions, access to credit
- $\boldsymbol{y_{EE}}$ control for common technological and market-driven factors (Estonia)
- Fractional logit model: $G(z) = \exp(z)/\big(1 + \exp(z)\big)$ as $\boldsymbol{y} \in [0,1]$

(2) Fractional logit model: Results

Marginal effects ∂E(y|x) ⁄ ∂EPL, 95% c.i.



Dependent variable (y):

Stricter EPL lowers the share of growing firms and increases the share of firms staying in the same size class but only if one accounts for coverage.

Additional results and robustness checks

Additional results

- Separate effects of individual and collective dismissal regulation
  - Consistent with the impact of the composite EPL
- Crisis did not significantly change the effect of EPL on firms' employment adjustment
  - No support for the hypothesis that EPL limits job losses in a crisis
- Corporate tax exemptions
  - Also significantly constrain job creation

Robustness

- Control for share of credit-constrained firms and the position in the business cycle
- Estimating the generalized model with OLS
- Including all CompNet countries and changing the benchmark country
- Replicating Haltiwanger et al. (2014)

Conclusions

- Novel coverage-adjusted EPL indicator that accounts for firm-size-related EPL exemptions
- Firms below EPL exemption thresholds are discouraged from adding jobs
- Adjustment for coverage is crucial in the general estimation of the effect of EPL on job reallocation
- Stricter EPL lowers the share of firms adding jobs, the share of firms remaining in the same size class goes up
- No evidence that EPL limits firms shedding jobs
- Controlling for the share of credit-constrained firms, for the position in the business cycle and for corporate tax exemptions

Thank you for your attention