Two-Tier Labor Markets in the Great Recession: France vs. Spain

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Introduction

- Why France and Spain?
  - Very different reaction of Spanish unemployment to the crisis relative to France (or EU) Figure 1
  - Similar labor market institutions: employment protection legislation, unemployment benefits, wage bargaining
  - BUT: Higher share of temporary labor contracts in Spain: France below 15%, Spain around 33% of employees
- What is the role of temporary employment (gap in firing cost between permanent and temporary jobs) vs. other factors? (residential construction + financial crisis)

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- In order to answer to this question we
  - Use a search and matching model with temporary and permanent jobs
  - Calibrate the model to reproduce the recent evolution of unemployment in France and Spain
  - Analyze how unemployment would have evolved in Spain if it had French labor market institutions

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- In order to answer to this question we
  - Use a search and matching model with temporary and permanent jobs
  - Calibrate the model to reproduce the recent evolution of unemployment in France and Spain
  - Analyze how unemployment would have evolved in Spain if it had French labor market institutions
- *Result: About 45% of the increase in the unemployment rate would have been avoided had Spain had French institutions; 40% of which is due to its higher firing costs*

Previous literature on temporary jobs in search models

- *Blanchard and Landier (2002), Cahuc and Postel-Vinay (2002):*
  - Endogenous job destruction w/ temporary and permanent jobs
  - Temporary jobs $\longrightarrow$ More job creation and destruction
- *Bentolila and Saint-Paul (1996), Boeri and Garibaldi (2007):*
  - Transitional *honeymoon* (job creation followed by reductions in employment)
- *Sala, Silva, and Toledo (2009):*
  - Calibrated on a representative European labor market; intermediate unemployment volatility
- *Costain, Jimeno, and Thomas (2010):*
  - Focus on dynamics of unemployment with dual labor market

Our approach

- Specific event: A negative aggregate shock in France and Spain
- Take account of actual features of labor contracts
  - Temporary jobs cannot be destroyed before their date of termination
  - Time is needed to destroy permanent jobs
  - Wages are renegotiated by mutual agreement
- Different types of wage setting: Endogenous or endogenous with fixed benefits and firing cost
- Difference-in-differences approach

Outline

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1. Relative performance of the French and Spanish labor markets in the crisis vis-à-vis the expansion
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   - To account for the change in unemployment in France and Spain from the boom (2005-2007) to the recession (2008-2009)
   - To evaluate what would have been the evolution of unemployment in Spain in the recession if it had French labor market institutions

1. Labor markets before and during the crisis

Convergence: A mirage.

- Unemployment: France vs. Spain Table 1
  - Stronger decrease during the boom
  - Stronger increase during the recession
- Temporary contracts: extreme turbulence
  - Stock: 14% of employees in France, one-third in Spain (1998)
  - Job losses over the period 2007:4-2009:4
    - France: 276,000 (324,000 temporary)
    - Spain: 1,330,000 (1,380,000 temporary)

2. Labor market institutions

1. *Employment protection legislation (EPL)*
   - Firing costs higher in Spain for permanent contracts, lower for temporary contracts, so higher firing cost gap between permanent and temporary jobs in Spain than in France

2. *Unemployment benefits*
   - Very similar across countries (taking into account income taxes, entitlement duration rules, and assistance benefits)

3. *Collective bargaining*
   - Similar in the two countries (Spain copied France in the early 1980s)

2. Labor market institutions

4. *Mismatch*

- A reallocation shock
  - Construction employment share (2007): France 6.9%, Spain 13.3% Why? Higher fall in real interest rate, ΔUnskilled labor (HS dropouts, immigrants), Initial size of dual labor market (Saint-Paul, 1997)
  - Construction was geographically concentrated
- Geographical mobility is much lower in Spain
  - Interregional migration rate: France 2.1%, Spain 0.2%

3. Model setup

- Continuum of infinitely-lived risk-neutral workers and firms, discount rate $r > 0$
- Measure of workers $= 1$
- Matching function à la Pissarides (2000):
  - $m(u, v) = m_0 u^{\alpha} v^{1-\alpha}$
  - Matching rate for vacancies: $q(v/u) = q(\theta)$
  - Matching rate for unemployed: $\theta q(v/u) = \theta q(\theta)$
- Workers
  - Unemployed - get unemployment benefit $b\omega$ (b for short)
  - Employed on temporary job
  - Employed on permanent job
  - Under advance notice

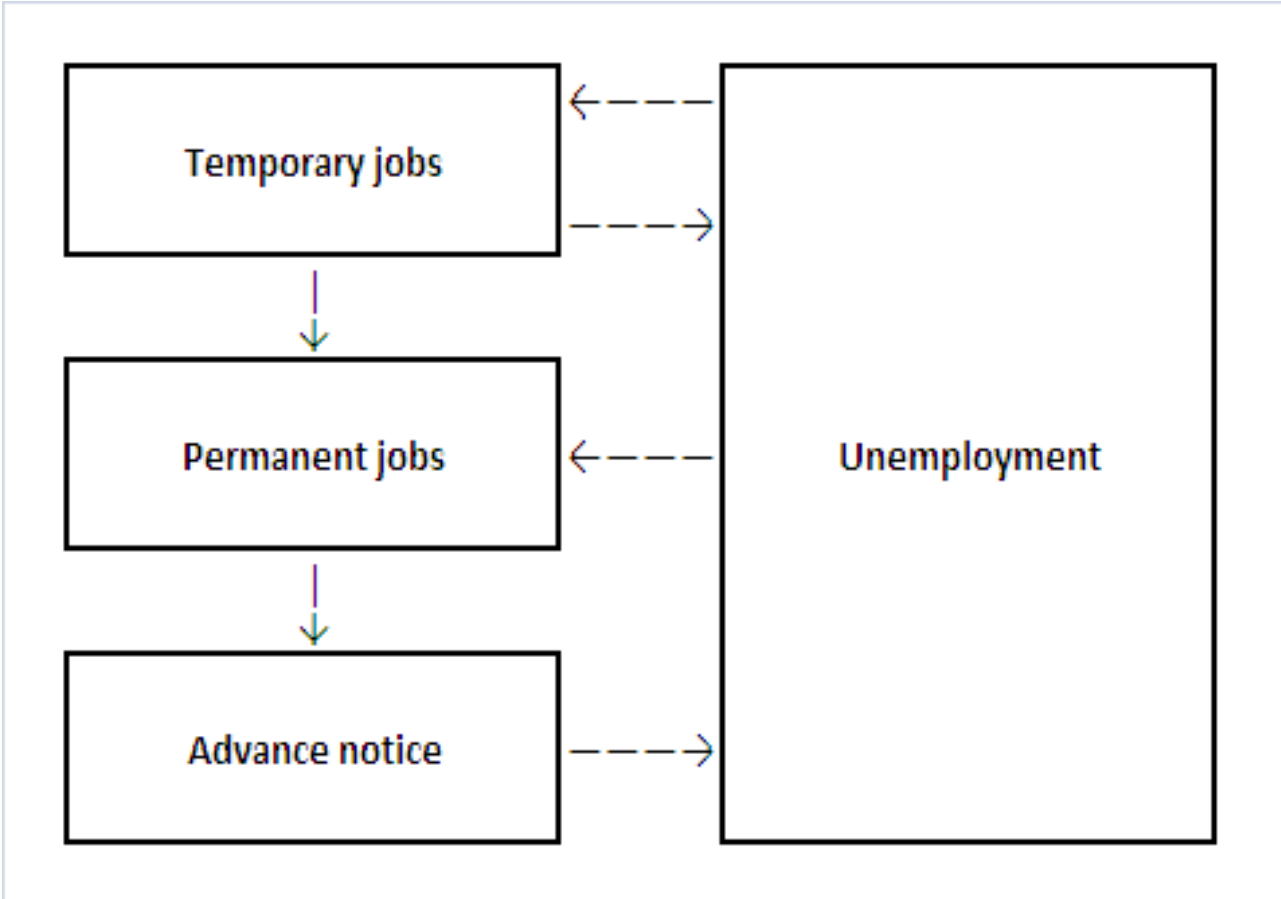
3. Model setup

- Job matches with (idiosyncratic) productivity distribution: $F(\varepsilon) \subset [\underline{\varepsilon}, \bar{\varepsilon}]$.
- $\varepsilon \sim$ Poisson(μ).
- All new jobs start with $\varepsilon = \bar{\varepsilon}$
- When created, a job is
  - Temporary with probability p
  - Permanent with probability $1 - p$

3. Model setup

- Temporary jobs end at rate λ
  - Either transformed into a permanent job (if their productivity ε if high enough)
  - or destroyed at zero cost
- Permanent jobs
  - Under advance notice if ε is below an endogenous reservation productivity level
  - Permanent jobs under advance notice are destroyed at rate σ
  - Dismissal entails *red-tape* firing cost $f\omega$ (f for short)
- Wage bargaining on each job: workers get a share β of the surplus
  - No renegotiation on temporary jobs
  - Renegotiation on permanent jobs

3. Model setup



3. Comparative statics

- *Equilibrium* Figure 2

- *Increase in firing cost f on permanent jobs:*
  - Firms become
    - Less strict in firing permanent workers
    - More strict in transforming temporary contracts into permanent
  - Ambiguous effect on
    - Unemployment
    - Job destruction (less permanent, more temporary)
- *Reduction in the probability p of creating temporary jobs:*
  - Less job creation
  - Less job destruction
  - Ambiguous effect on unemployment

4. Simulation strategy

1. Solve the model for each country
   - Parameters:
     - Calibration (taken from data)
     - Indirect inference: Match the average rates of unemployment, temporary employment, and permanent job destruction
   - In two phases of cycle:
     - Expansion
     - Recession: Assign values to aggregate productivity shock and (in Spain) to mismatch shock
2. *Counterfactual* simulation for Spain: With its own shocks (as computed above) and French policy parameters (EPL)
3. Difference-in-differences: Increase in u in Spain with Spanish policy paramters minus Increase in u in Spain with French policy paramters

4. Calibration

a) Calibrated parameters:

- Environment parameters:
  - $r = 0.01$ per quarter
  - Cobb-Douglas matching function. Hosios: $\alpha = \beta = 0.5$
- Institutional parameters $(b, f, p, \lambda, \sigma)$ Table 2

b) Parameters estimated by indirect inference:

- Cost of vacant jobs (h)
- Matching function scale parameter (m_0)
- Job-specific productivity shocks arrival rate (λ)
- Uniformly distributed aggregate shock: $\gamma[\underline{\varepsilon}, \overline{\varepsilon}]$

4. Simulation results

- Matching the data Table 3
  - Expansion
  - Recession: Baseline model (no mismatch shock) and alternative model
- Difference-in-differences approach:
  - u in recession – u in expansion in Spain
    minus
  - u in recession – u in expansion in Spain with French policy parameters (f, p)
- Changes in unemployment
  - Steady states Table 4
  - Transitional dynamics Figure 3

5. Conclusions

- We find that
  - About 45% of increase in unemployment rate would have been avoided had Spain had French institutions
  - Almost 40% of which is due to its higher firing costs
- Recent initiatives in Europe highlighting the negative effects of the permanent-temporary divide and proposing a single labor contract:
  - France: Blanchard-Tirole (2003) and Cahuc-Kramarz (2004)
  - Italy: Boeri-Garibaldi (2008) and Ichino (2009)
  - Spain: Proposal by 100 academic economists (Andrés *et al.*, 2008)

The results in this paper provide some support for the single contract

Thank you

for your attention!

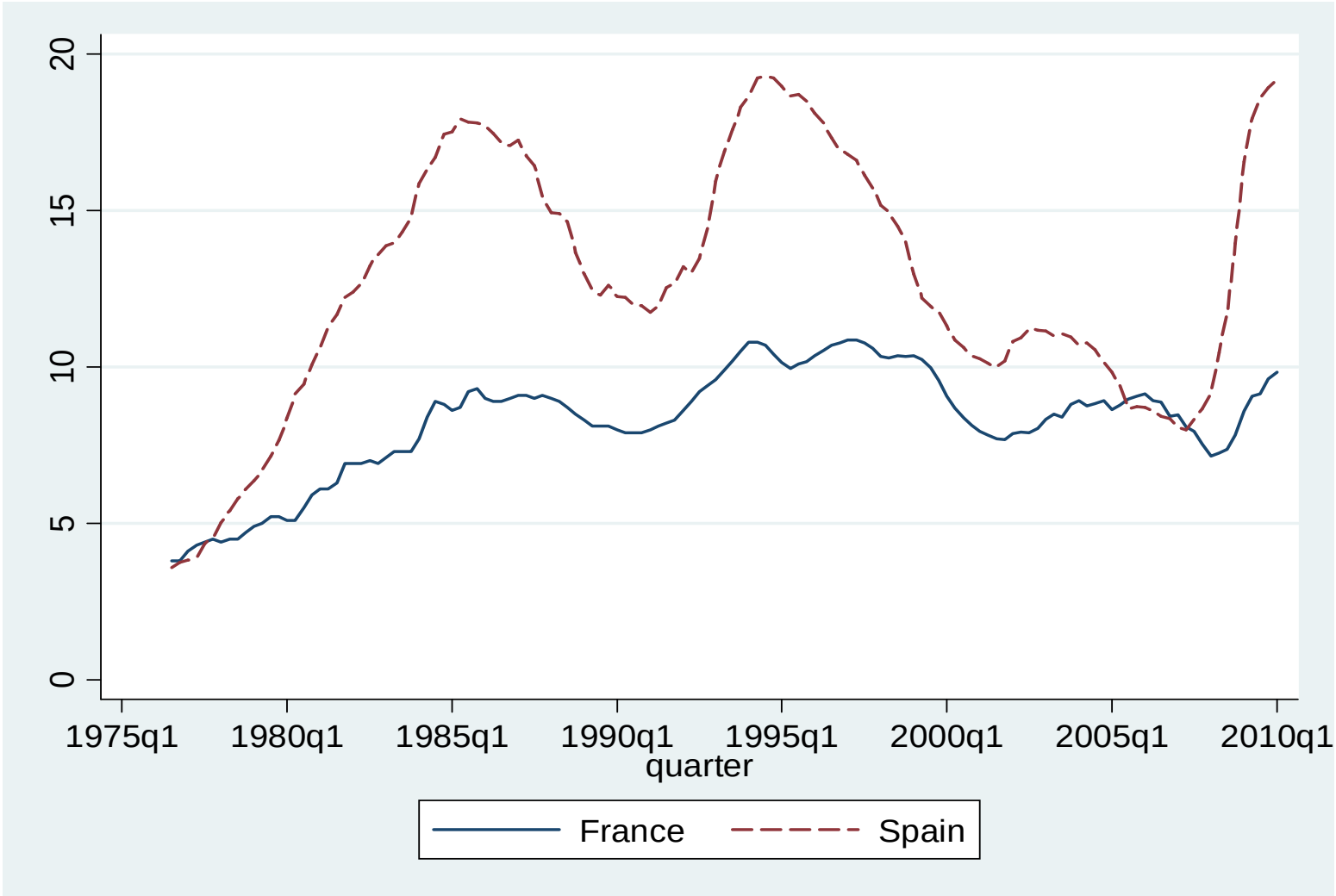


Figure: 1. Unemployment rate in France and Spain, 1976-2010

Table 1. Labor market evolutions in France and Spain

Levels (%)		1998:1	2007:4	2009:4
Unemployment	France	10.3	7.5	9.7
	Spain	15.2	8.7	18.9
Fixed-term employment	France	13.8	14.3	13.1
	Spain	33.3	30.9	25.1

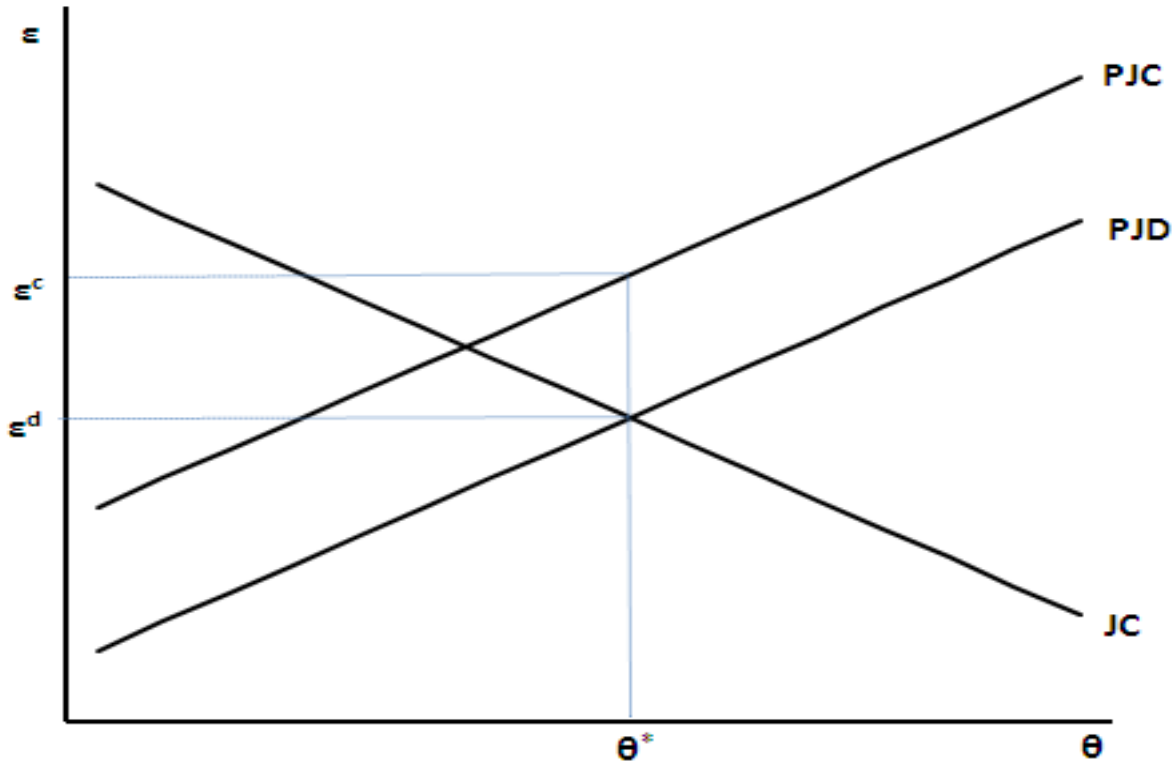


Figure: 2. Labor market equilibrium

Table 2. Calibrated and estimated parameters

		France	Spain
Interest rate	r	0.01	0.01
Matching function elasticity	α	0.50	0.50
Worker bargaining power	β	0.50	0.50
Unemployment benefit replacemente rate	b	0.55	0.58
Severance pay for permanent employees	f	1.33	2.00
Dual labor market flow rates:			
Probability of hiring into a temporary job	p	0.85	0.91
Probability of temporary contract ending	λ	0.88	0.88
Cost of keeping jobs vacant	h	0.50	0.25
Matching efficiency level in expansion	m_0	1.50	2.50
Matching efficiency level in recession	m_0'	1.50	1.50
Incidence rate of productivity shocks	μ	0.04	0.09
Lower bound of productivity shock	$\underline{\varepsilon}$	0.00	0.00
Shocks multiplicative shift factor in recession	γ	0.90	0.87
Advance notice rate	σ	0.75	4.30

Table 3. Simulation results

	Unemployment rate	Perm. jobs destruction r.	Temporary employment r.
France - Expansion			
Data	0.0850	0.0150	0.1260
Model	0.0854	0.0305	0.1137
France - Recession			
Data	0.0980	0.0130	0.1250
Model	0.0973	0.0304	0.1145
Spain - Expansion			
Data	0.1020	0.0470	0.3330
Model	0.1022	0.0655	0.3300
Spain - Recession			
Data	0.1790	0.0400	0.2700
Model 1	0.1736	0.0641	0.3793
Model 2	0.1765	0.0611	0.2796

Table 4. Differential increase in unemployment induced by the recession explained by differences with the other country (percentage points)

	(1)	(2)	(3)
	Δu_{SP}	$\Delta u_{SP}(FR)$	$(1)-(2)$
Spain with French f and p	7.43	4.05	3.38
Spain with French f	7.43	6.13	1.30
	Δu_{FR}	$\Delta u_{FR}(SP)$	$(1)-(2)$
France with Spanish f and p	1.19	3.08	-1.90

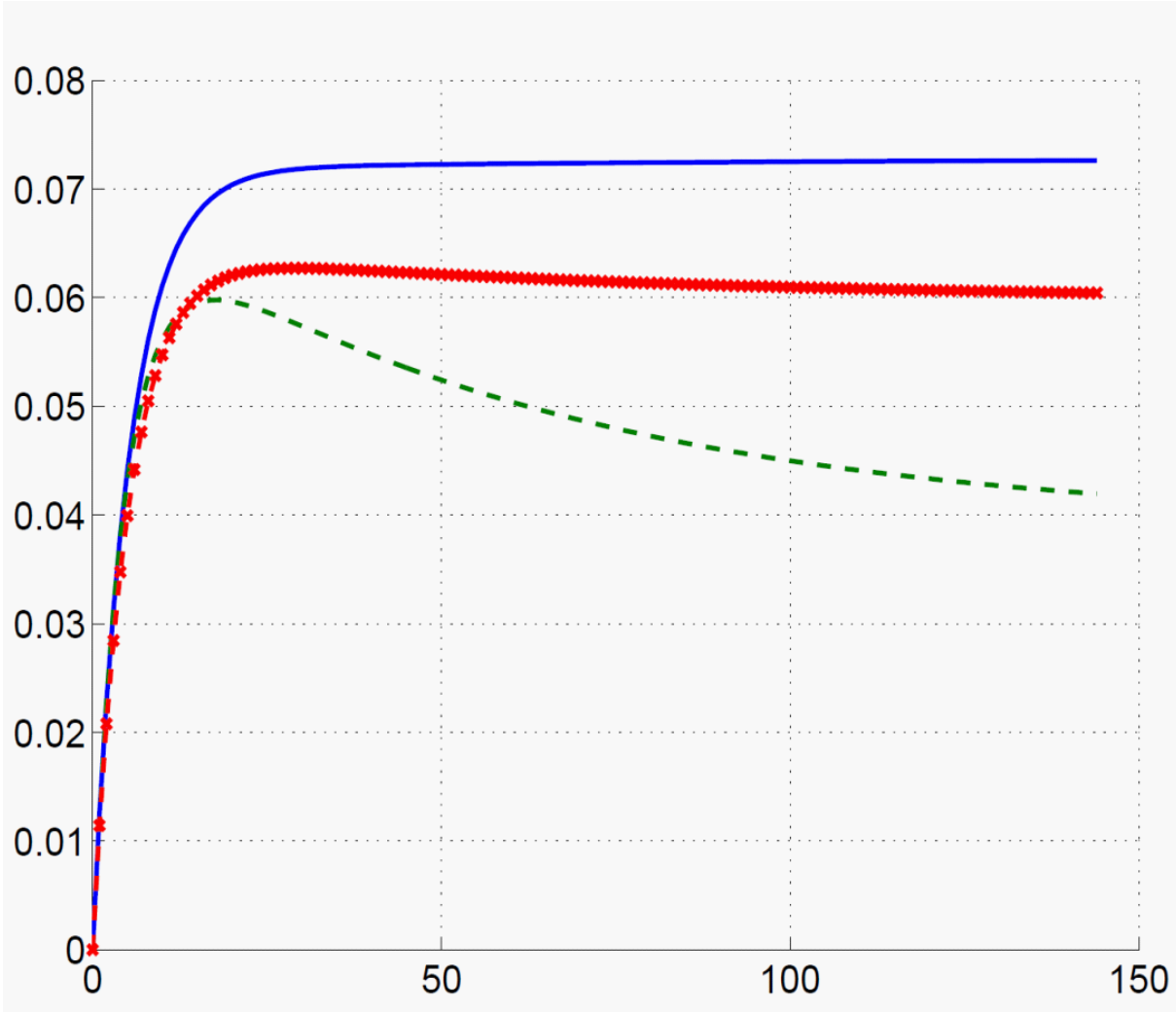


Figure: 3. Increase in unemployment rate in Spain with Spanish EPL (solid line), with French layoff costs and French regulation of temporary jobs (dotted line), with French layoff costs and Spanish regulation of temporary jobs (line with crosses).