

# Wage Determination and The Bite of Collective Contracts in Italy and Spain: Evidence from the Metalworking Industry

Efi Adamopoulou (Mannheim)

Ernesto Villanueva (BdE)

All views and opinions are our own.

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# Introduction

- Unions and employer federations bargain skill-specific wage floors in many OECD countries
  - Binding for all workers and employers (OECD, 2019).
- **"Explicit" contracts view:** the **whole** wage distribution is bargained infrequently. Wage growth reflects labor market conditions **when the collective contract was signed**
  - (Olivei and Tenreyro, 2007; Bjorklund, Carlsson, and Skans, 2019).
- **Spot markets view:** Wages above the minima react to **contemporaneous** labor market conditions.
  - (Cardoso and Portugal, 2005; Schulten, Eldring and Naumann, 2015).
- Different implications for the propagation of macro shocks.

## What we do

- 1 Collect data on union contracts in the Italian and Spanish metalworking industry (15,000 skill-specific **wage floors** and 1,000 **signature dates**)  $\implies$  merge to Social Security records
  - Highly unionized industry, tradable, 15% workforce in Italy, 7% in Spain
  - Compute "**wage cushion**": distance of wages to skill-specific floors.
- 2 Test **explicit contracts vs spot markets** by estimating the response of wages to unemployment rates at time  $t$  and at *renewal*
  - Responses by **distance to each worker's minimum** illustrate which model works for whom.
- 3 Two countries with different bargaining systems: national in Italy, provincial in Spain.

## Accumulation around the minima: 2.5-4%

- Wage floors are binding (pretty low non compliance).

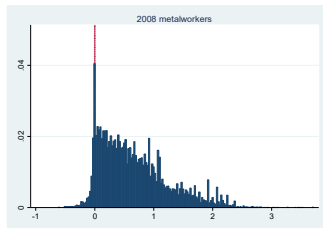
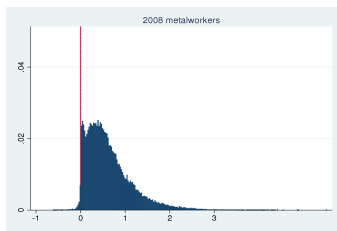
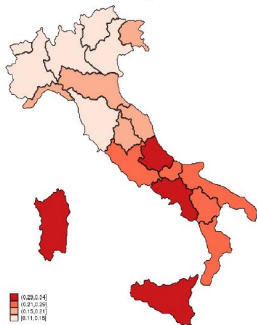


Figure: Distribution of wage cushion in 2008, Italy (left) and Spain (right)

## Bite and negotiated wages across the territory-Italy

- Collective bargaining takes place at the national level  $\implies$  larger bite of collective contracts in the South

Fraction of workers earning 0-20% above minima



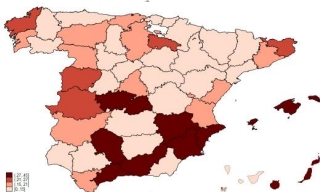
Negotiated wages



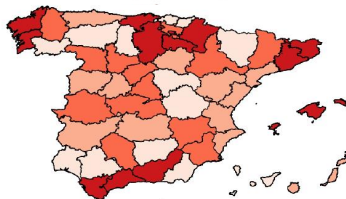
## Bite and negotiated wages across the territory-Spain

- Decentralization of collective bargaining at the province level  
⇒ more homogeneous bite across the territory.

Fraction of workers earning 0-20% above minima

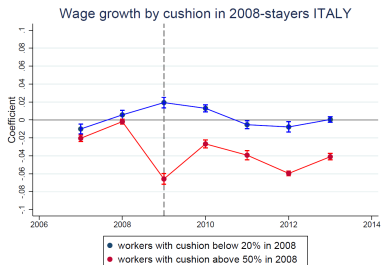


Negotiated wages



# Event study around 2008 Recession-by distance from min

- Wage growth adjusts among workers with a large cushion.



## Regressions

$$\log W_{ipft} = \beta_0 + \beta_1 U_{pt} + \beta_2 U_{renewal} + f(t) + \mu_i + \mu_f + \epsilon_{ipj}$$

- Worker fixed-effects account for cyclical changes of the workforce while including movers.
  - Establishment fixed effects absorb firm-level contracts.
- Polynomial in t to account for national cycle
  - Year dummies would absorb  $U_{renewal}$  in IT
  - Also, Carneiro et al (2012)
- Horse race between  $U_{pt}$  (regional in IT, provincial in ES) and  $U_{renewal}$ 
  - Explicit contracts:  $U_{renewal}$  dominates
  - Beaudry and DiNardo (1991)



# Testing spot markets vs explicit contracts

Table 4. Wage determinants in Italy and Spain

	Italy	Spain
	(1)	(2)
A. Dependent variable: log(negotiated wage)		
$U_t$	0.010 (0.082)	0.064 (0.100)
$U_{renewal}$	-0.249*** (0.018)	-0.204** (0.079)
B. Dependent variable: log(total wage)		
$U_t$	-0.453* (0.229)	-0.470*** (0.047)
$U_{renewal}$	-0.073* (0.037)	-0.061 (0.048)
C. Dependent variable: cushion		
$U_t$	-0.858** (0.323)	-0.968*** (0.200)
$U_{renewal}$	0.279*** (0.074)	0.261 (0.180)
$N$	443,436	103,090

Data source: INPS 2005-2013 for Italy and MCVL 2005-2014 for Spain. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Robust standard errors clustered by region/province in parentheses. Regressions include worker and establishment fixed effects and a quadratic trend. Unemployment rate at  $t$  is regional/provincial for Italy and Spain. Unemployment rate at renewal is national for Italy and provincial for Spain. The cushion is defined as the difference between the

# Limited wage response in Southern Italy but not in Southern Spain

<i>High local <math>U_{2004}</math> areas</i>	Italy	Spain
	(1)	(2)
A. Dependent variable: log(negotiated wage)		
$U_t$		0.076 (0.131)
$U_{renewal}$		-0.273** (0.112)
B. Dependent variable: log(total wage)		
$U_t$	-0.036 (0.061)	-0.419*** (0.068)
$U_{renewal}$	-0.089 (0.119)	-0.045 (0.042)
C. Dependent variable: cushion		
$U_t$	-0.267 (0.169)	-0.887*** (0.259)
$U_{renewal}$	-0.219 (0.175)	0.436* (0.222)
$N$	67,378	61,239

## Theoretical benchmark

- Our estimates  $\Rightarrow U_t$  rather than  $U_{renewal}$  is the most important determinant of wages
- $\nRightarrow$  does **not** necessarily imply that the magnitude of the responses is completely consistent with the predictions of a **spot market** model of the labor market.
- In steady state elasticity of real wages to  $U_t$  one minus unemployment benefit replacement rate.
  - Koenig, Manning, and Petrongolo (2016) and others
  - Dynamics affected by frequency of wage bargaining, persistence of  $U$
  - $\Rightarrow$  **benchmark** for our estimates of the responses of real wages to  $U_t$  at various points of the worker's wage distribution

# Parameters

	Italy	Spain
Unemployment replacement rate	0.70	0.79
Job separation rate	0.04	0.14
Interest rate	0.04	0.04
Steady state unemployment rate	0.10	0.17
Persistence of unemployment	0.04	0.06
Renegotiation frequency of existing matches	0.40	0.50

Data sources: replacement rates are those of year 2010 for Italy and Spain from OECD, separation rates are computed as the average involuntary separation rate in Social Security data for the metalworking industry, unemployment rates (average unemp. rate during the period of analysis) come from ISTAT and INE, unemployment persistence is the coefficient of AR(1) of national unemployment on its lag, the frequency of contract negotiations is one over the average duration of collective contracts (2.5 y in Italy, 2 y in Spain).

# Comparison

Predictions of canonical model of search	Italy	Spain
	Elasticity of Wt to Ut	Elasticity of Wt to Ut
1. Continuous wage renegotiation	-0.300	-0.210
2. Infrequent renegotiation continuing matches	<b>-0.254</b>	<b>-0.176</b>
Our empirical estimates	Italy	Spain
	Elasticity of Wt to Ut	Elasticity of Wt to Ut
Mean response	<b>-0.035</b>	<b>-0.063</b>
Workers with cushion below 20%	0.025	-0.032
Workers with cushion between 20 and 50%	-0.014	-0.065
Workers with cushion above 50%	<b>-0.062</b>	<b>-0.080</b>

## Conclusions

- **Wage floors** in the metalworking industry of both Italy and Spain are **binding**
  - Accumulation of 2-4pp right at the skill-specific wage floors.
- The data **do not support** the explicit contract hypothesis.
  - The economic **conditions at the time of bargaining** explain evolution of earnings **close to the wage floors**
  - For the rest of the distribution, earnings respond predominantly to changes in **current** economic conditions.
  - Elasticity falls short of the predictions of an off-the-shelf search and matching model.
- Wage responses to the local cycle vary across Italian regions, less so in Spain.
  - Possible role of national (IT) vs provincial bargaining (ES).