What do Unions do?
Lessons from the Great Recession in Portugal

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What do Unions do? (Labor Economics 101)

Classical economic definition of Labor Union

- *"An association of workers who bargain collectively, regarding the terms and conditions of employment". Namely over the share of firm's economic rents.*
- *A voice for grievances about workplace without risk of direct confrontation.*

Traditional economic ways to modeling unions

- **Right to Manage Model** - Unions intend to **raise wages**, letting the employer decide the amount of workers to have in the firm.

- **Efficient Contracts Model** - Labor Unions bargain to **increase the workforce payroll** (raise both employment and wages).

What do Unions do? (What do we really know?)

- We know that unions have the monopoly of workers representation. But who are the workers they really represent?

- Does Unions alter the compensation of workers, when they bargain for them? By how much?

- What are the macroeconomic implications of collective bargaining (and Unions in particular)?

So, we know the Labor Economics 101, and we have hints, based on other countries experiences for answering these questions.

BUT, what do we know for the portuguese case?

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Database - Quadros de Pessoal and Relatorio Unico

It is a "longitudinal matched employer-employee-jobtitle" database. It contains information from 1983 until 2013.

Variables collected:

- Worker characteristics (i.e. age; gender; education,...);
- Contract characteristics (i.e. type of contract; compensation;...);
- Firm characteristics (i.e. location; sector of activity; number of workers;...).

Main characteristics:

- Mandatory, with public access and enforced by law;
- Covers every establishment with at lest one wage earner.

In 2010-2013, it was questioned to each firm the number of known unionized workers.

The Labor Market functioning and Unions

Bargaining Framework in Portugal

**The foundations of Labor Law**

Constitution and Labor Code

Bargained Instrument	Purpose of Agreement
Collective Contract of Labour	Sector or Industry
Collective Agreement of Labour	Subscribers
Firm Agreement	Firm

Non-Bargained Instrument	Purpose of Agreement
Regulation of Working Conditions	Similar Sector/Industry
Regulation of Extension	Extend to Sector or Industry

The most favorable clause applies!

How is coverage of Bargained instruments?

Figure 2: The Stock of Collective Agreements by Type, 2008-2012
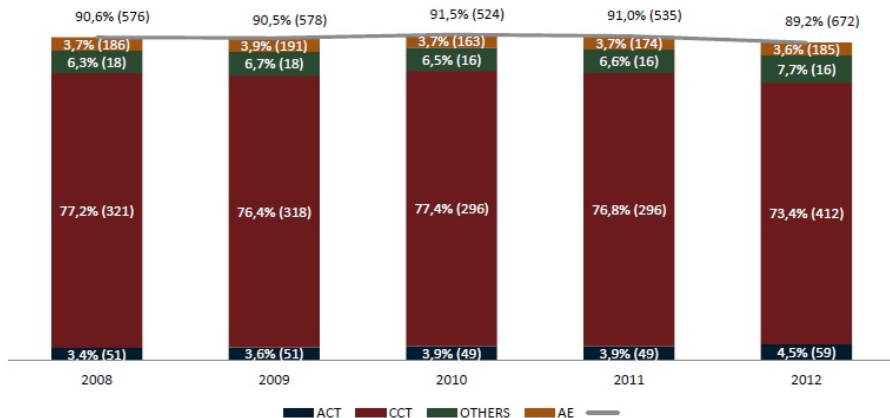
Unions affect the large majority of the labor relationships

The individual decision to become unionized

Union Membership is a good. The consumption is based on **a cost-benefit analysis**.

Benefits from the Consumption of Union Membership.

1. *Collective Benefits (i.e.* **expected extra compensation**, *greater job security, insurance against arbitrary actions of the employer, ...);*
2. *Individual Benefits (i.e. better pension schemes, health insurance, free legal services, ...);*

Loss from the Consumption of Union Membership.

The fee paid to the Union.

Free-riding becomes a common feature.

Union Density in Portugal

"Union Density in Portugal has been among the most eroded in the Developed World, only outbeaten by France and New Zealand"

Pontusson, 2013

1980	*52%*
1990	*40%*
1995	*30%*
1998	*25%*
2010	**10.9%**
2011	**10.4%**
2012	**10.6%**

Table: Union Density in Portugal.

Financial and insurance activities	63,80%	3,61%
Electricity, gas, steam and air conditioning supply	60,46%	0,31%
Transportation and storage	31,30%	5,34%
Information and communication	15,65%	2,56 %
Water supply; sewerage, waste management	14,48%	0,82%
Mining and quarrying	11,96%	0,41%
Manufacturing	11,69%	24,23%
Arts, entertainment and recreation	10,55%	0,78%
Human health and social work activities	9,42%	7,90%
Accommodation and food service activities	8,01%	6,88%
Other service activities	7,54%	2,76%
Wholesale and retail trade; repair of motor vehicles	4,58%	19,46%
Administrative and support service activities	4,65%	7,49%
Education	4,09%	1,66%
Construction	2,86%	11,10%
Professional, scientific and technical activities	2,36%	3,98%
Real estate activities	1,44%	0,71%

Table: Sector distribution of union density in Portugal (Relatorio Unico, 2010).

What drives Union density - Negative binomial framework

We resort to count regression models, accounting for:

1. Typical excess of zero problem;
2. Variation of exposure across firms to the event of unionized worker;
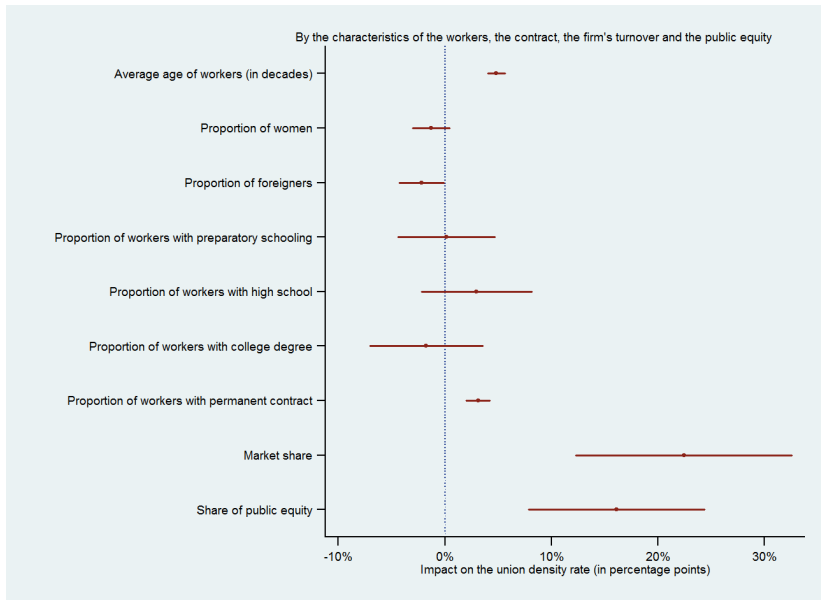3. Potential overdispersion.

Zero Inflated Negative Binomial model

$$Pr(u|x, z) = \begin{cases} g + (1-g)exp(-\lambda(x, u)), & y = 0 \\ (1-g)\frac{exp(-\lambda(x,u))\lambda(x,y)^y}{y!}, & y > 0 \end{cases} \text{,with } g = \frac{exp(\tau)}{1+exp(\tau)}$$
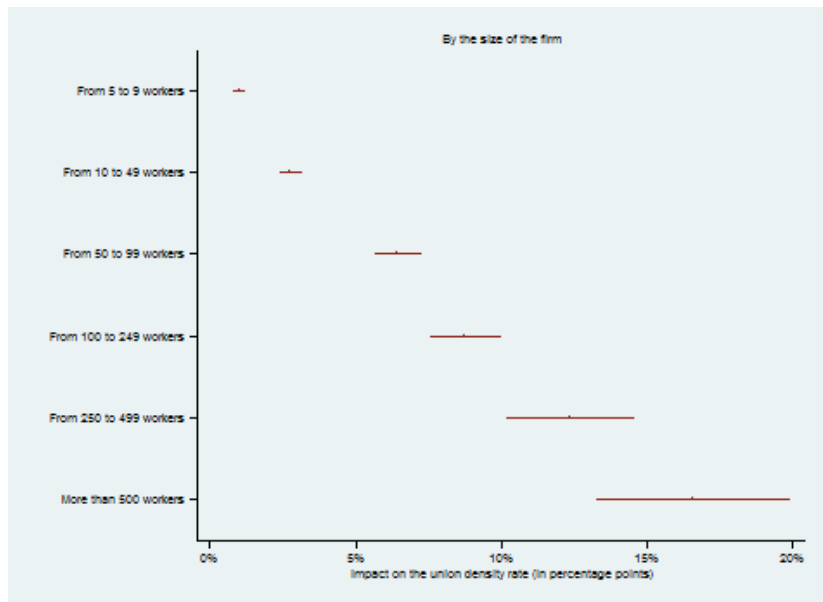
Implicitly we are assuming that the probability of a positive union density, controlled properly for the firm's size, is constant.

$\lambda(x, u) = exp(x'\beta + log(s))u$, with u following a gama distribution with $E(u|x) = 1$ and $Var(u|x) = \frac{1}{\delta}$.

What drives Union density - Negative binomial framework

By the characteristics of the workers, the contract, the firm's turnover and the public equity

By the size of the firm

Impact on the union density rate (in percentage points)

What drives Union density - Negative binomial framework

By sectors of activity

Impact on the union density rate (in percentage points)
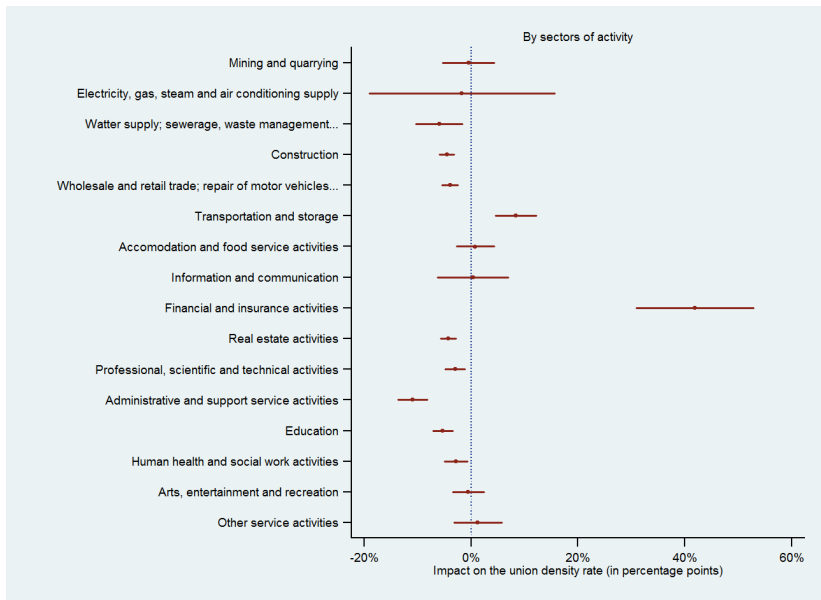
What drives Union density - Negative binomial framework

- **Larger firms** - Unions need to take advantage of economics of scale;
- **Sectors more protected from competition** (i.e. Electricity, Banking...);
- **Public equity (in a broad historic concept)** - higher rents to bargain for;
- **Union as service provider (i.e. Health Insurance - SAMS)** - it changes the cost-benefit analysis (Credible thread to increase membership).
- **Worker characteristics are greatly neglectable**

Unions are not representative of the economy. BUT, they influence much more than what they represent!

The impact of bargaining in wages

Union Wage Gap - The proposed model.

A two step model which combines a union density-specific fixed effects model with a Kernel regression model.

First step - Union density-specific fixed effects model.

$$lny_{w,f,u} = \alpha_u + x_{w,f}\beta + e_{w,f,u}$$

- Specific observable characteristics of the worker and his firm ($x_{w,f}$);
- Union density constant heterogeneity, potentially connected with differences in compensation caused by the level of union density at firm level (α_u);
- Unexplained error term ($e_{w,f,u}$).

Second step - Kernel regression model.

$$\alpha_{w,u} = m(U_{w,u}) + \tau_{w,u}$$

- $m(.)$ is an undefined function;
- Well behaved error term ($\tau_{w,f,u}$).
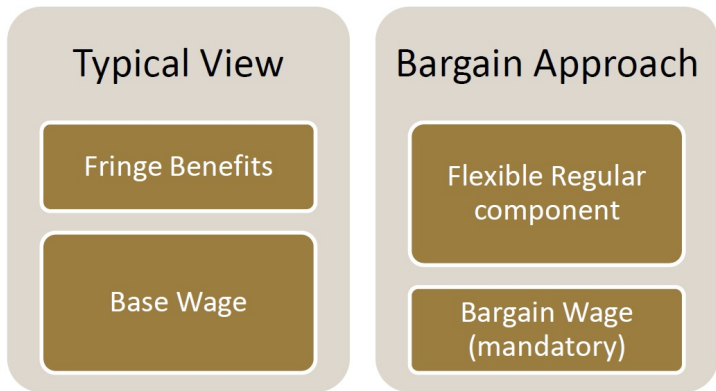
Union Wage Gap in Portugal

A nonlinear, semiparametric relationship between the union density and the worker's compensation, with a **plateau resemblance**.

The unions bargain at sectorial level, but **they are able to further increase the wage wherever they have a strong presence!**
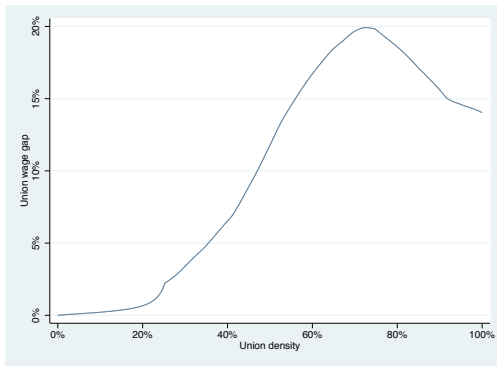
Non-Bargaining instruments work as a sounding board to less unionized firms. Full implementation could imply a lower gap, BUT due to the catch-up of the less unionized firms.

Wage Structure: The typical view vs the bargaining view

Typical View
- Fringe Benefits
- Base Wage

Bargain Approach
- Flexible Regular component
- Bargain Wage (mandatory)

Bargain wage - The mode of the base wage in each job-title.
Wage cushion - The percentage of the bargain wage that is paid above it. By construction, the sum of the wage differentials in both components match the wage differential in total compensation.

Union Wage Gap by types of compensation (Typical view)

Unions obtain greater
success in bargaining
higher **fringe
benefits**, even if it
implies lower
compensation related
with working time.

Union wage gap decomposed by the parts of total compensation

• Base wage	• Other bonuses not attach to productivity
• Shift subsidy	• Lunch subsidy
• Overtime compensation	• Overall compensation
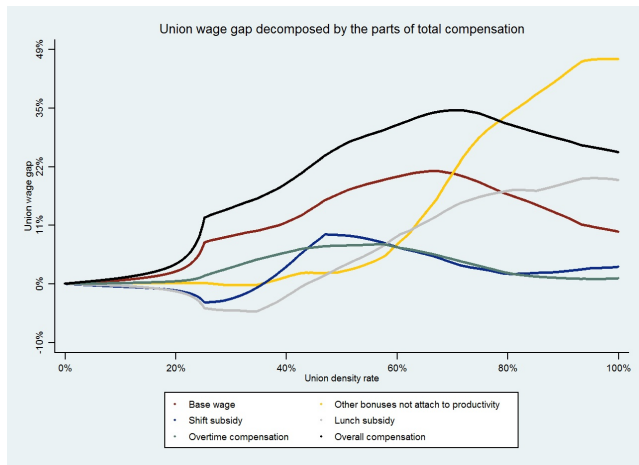
Unions and Firms may share potential tax savings (i.e. Health Insurance, Pension Plans, etc.) - Felix and Heines (2009).

Union Wage gap in Bargain Wage and Wage Cushion

Significant wage differential in the bargain wage - An increase in the mandatory component.

The wage cushion gap is lower than in the bargain wage gap - Flexible and Regular component presents positive wage differentials.
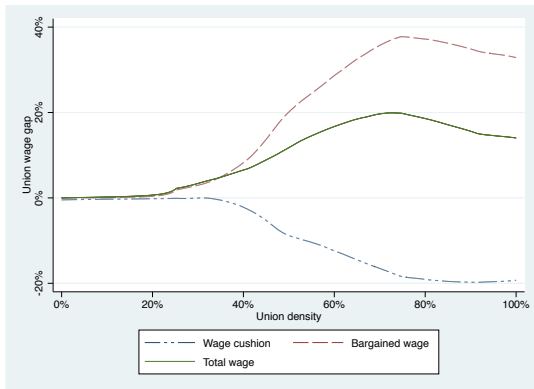
2 major issues:

- There is a transfer from the flexible component to the mandatory component;
- The union wage gap is positive in both components.

Gelbach's decomposition - the methodology of the model

Gelbach decomposition takes advantage of the omitted variable bias to exactly split a regressor of interest in its constituents.

Here we want to decompose the union wage gap curves in the contribution of:

- the firm compensation policy;
- the job-title attribution mechanism;
- the worker's ability.

So that we have:

$$\eta \hat{_{DR}} - \xi \hat{_{DR}} = \hat{\mu_\theta} + \hat{\mu_\phi} + \hat{\mu_\psi}$$

$\xi \hat{_{DR}}$ is negligible in every exercise performed, meaning that this three dimmensions of heterogeneity, captures almost completely the source of wage differentials

Gelbach Decomposition - Bargain wage

Unions are capable to offer better job-titles for workers in more unionized firms. It is the engine for differentials in bargain wage. **It derives directly from the structure of bargaining**
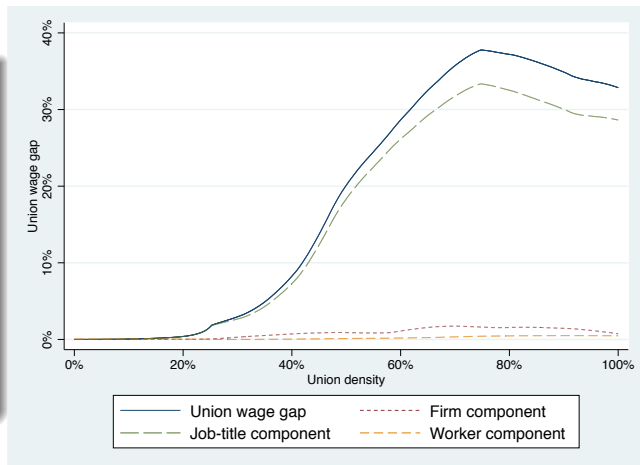
Gelbach Decomposition - Wage cushion

The fall in job-title component presents the evidence for transfer in the structure of wages

**Firm compensation policies are the major driver for increase in the flexible component of compensation**
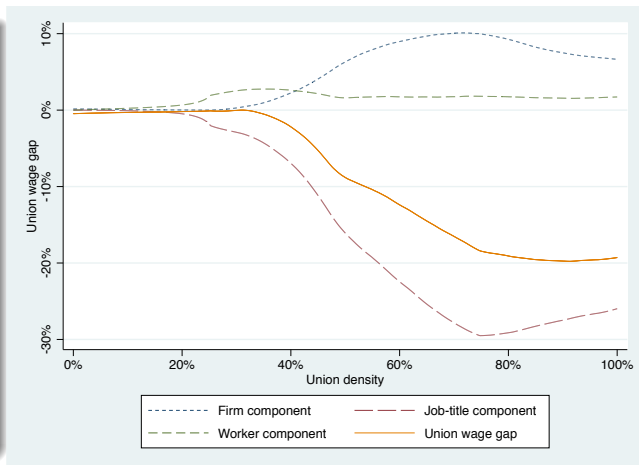
Firm compensation policies are the major drive

Beyond the transfer between bargain wage and the flexible components, **job-title also contributes for the wage differential**

Little evidence of relevance of worker's ability. (Also it does not change the match worker-firm).
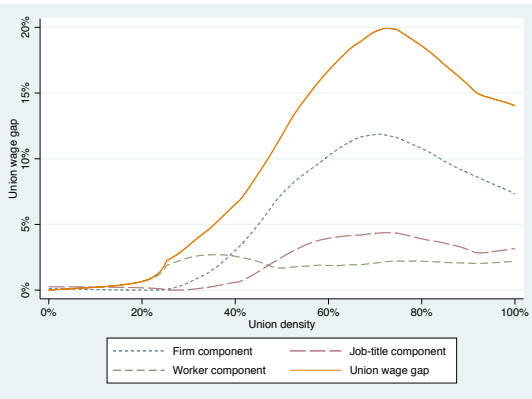
Nominal Wage Rigidity and Great Recessions

Stall in flows of contracts

	Type of Collective Agreement			Extension (PEs)
Year	Sectoral (CCTs)	Multi-Employer (ACTs)	Company Agreements (AEs)	
2008	172 (1,778,216)	27 (47,232)	97 (69,398)	178
2009	142 (1,299,371)	22 (59,902)	87 (37,952)	128
2010	141 (1,309,267)	25 (64,455)	64 (33,344)	140
2011	93 (1,160,080)	22 (52,737)	55 (24,102)	24
2012	36 (291,068)	9 (26,645)	40 (9,909)	13

Source: Martins (2014, Table 2).

Notes: Numbers of collective agreements, and workers covered (in parentheses). Earlier values are reported by Dias and Cerdeira (2011); and for slightly different values, see EurWORK (2013, 2014).
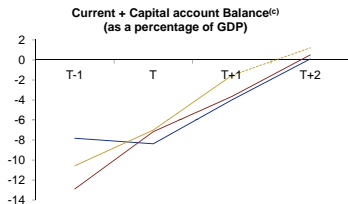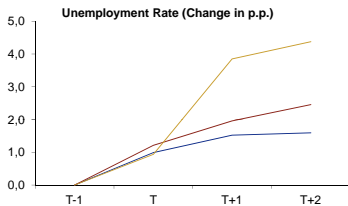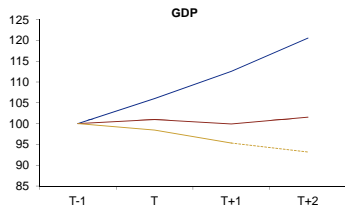
Crisis represented a dramatic fall in the flows of new collective conventions. **Two potential sources:**

- Competition considerations attached to Non-Bargaining instruments;
- Nominal wage rigidity (NWR).

On the first, we have taken the natural experiment and the lesson.

Let us focus on the second...

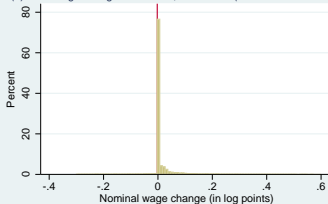# Three assistance programs - A Labor Approach

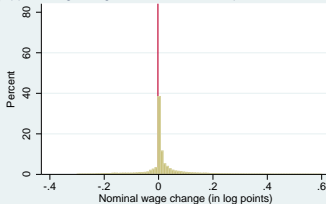Banco de Portugal, 2012
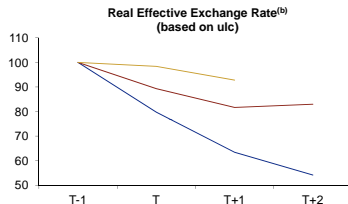
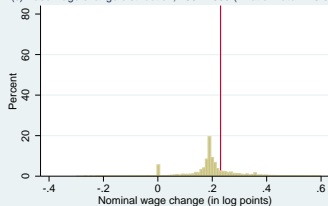In a very low inflation regime, the NWR represents a **major obstacle to the scope of real wage adjustment**.
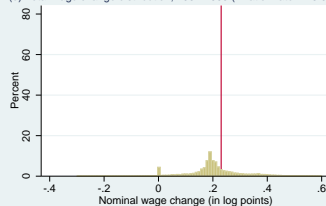
Competitive desinflation has to occur anyway. **Employment pays the bill!**

Policy Implications (feasible)

Collective bargaining should be developed in micro-settings (i.e. workers councils)

- Secure that union demands are feasible, as unions internalize the economic conditions of the counterpart;
- Macro-settings should be a true minimum, which do not attempt to replicate the Labor Code with better conditions.

Decrease the duration of living collective agreements

- Forces sides to bargain and commit, specially when there are new economic realities, instead of having sides stuck on an outdated agreement.

Extinction of the implementation of Non-Bargaining instruments, specially when the signatory firms are not representative

- Avoid strategical behavior of incumbent firms, to concede economic rents to workers, as a tool to deter competition;
- Creates incentives to Unions to go to micro-setting environments.

Policy Implications (wishful thinking)

Un-do the constitutional monopoly of unions in the representation of workers

- Workers' councils may replace unions if these fail to organize workplaces (i.e. Auto-Europa).

Requirement of organization of workplace (american and spanish concepts)

- Unions bargain in representation of a given set of employees, after a workplace voting, among those the union intend to represent (independently of the membership!).

Create mechanisms of a two-layer process of bargained wages: normal times versus a temporary stress period (i.e. Millennium BCP):

- It bypasses the NWR in hard-times, and avoid major surges of unemployment. It also provides headroom for firm's adjustment;
- It can even involve arbitration in deciding the validity of the stress period, and the necessary adjustments to the collective agreements.

Thank you,

Q&A

The Foundations of the Presentation

- Vilares, H. (2013), "The Sources of the Union Wage Gap", Nova SBE Master Thesis;

- Portugal, P., H. Vilares (2013), "Labor Unions, Union Density and The Union Wage Premium", Bank of Portugal Economic Bulletin - Winter 2013;

- Addison, J. T., P. Portugal, H. Vilares (2015), "Unions and Collective Bargaining in the Wake of the Great Recession", IZA DP No. 8943;

- Addison, J. T., P. Portugal, H. Vilares (2015), "Sources of the Union Wage Gap: Results from High-Dimensional Fixed Effects Models", mimeo;