

# The Economics of The Single Contract.

## When do we need Severance Payments Increasing with Tenure?

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# Unexplored Dimensions of EPL

EPL is perhaps the most widely investigated institution in the LM. Many features of EPL have not been taken into account.

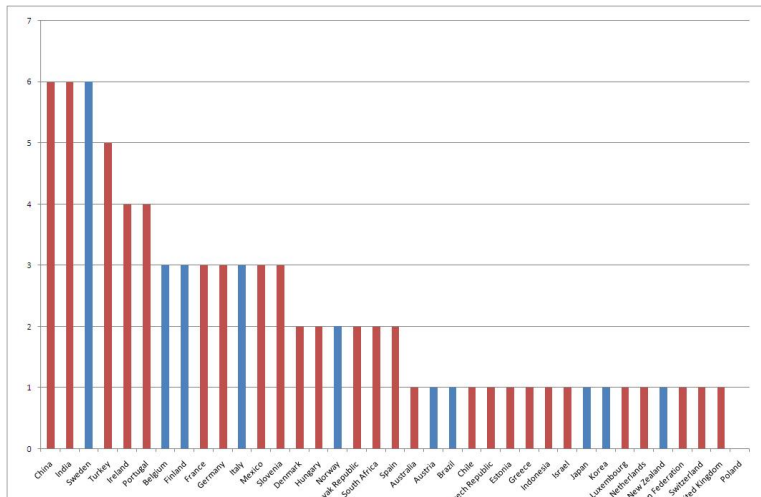
- 1 In all countries compensation to workers differ depending on whether it is related to *fair* or *unfair* dismissals
- 2 There are countries in which there is compensation to workers *only* in the case of *unfair* dismissals
- 3 Most countries allow for reductions of severance for small firms
- 4 Large cross-country variation in the tenure profile of severance

# Severance Payments and Compensation for Unfair Dismissals

- Severance Payments (SP) are mandatory **transfers** for firm initiated job separation.
- SP are often restricted to "unfair dismissal" (Compensations for Unfair Dismissals CUD). Firm initiated job separations that are not due to workers' misconduct.
- Dismissals due to workers' shirking or other workers' misconduct are defined as "fair" dismissals, and can take place without any mandatory transfer.
- It is very difficult to distinguish between "fair" or "unfair" dismissal. Ultimately, it is a court ruling

# All Countries have Compensations for Unfair Dismissals

Red bar countries also have for Fair Dismissals (lower than for unfair)



# Some Countries have only Compensation for Unfair Dismissals

11 OECD countries with compensation to workers only in case of unfair dismissals:

Austria

Belgium

Finland

Italy

Japan

Korea

Norway

New Zealand

Poland

Sweden

United States

# Exemptions for Small Firms

Most countries allow for lower severance for small firms in case of unfair dismissals.

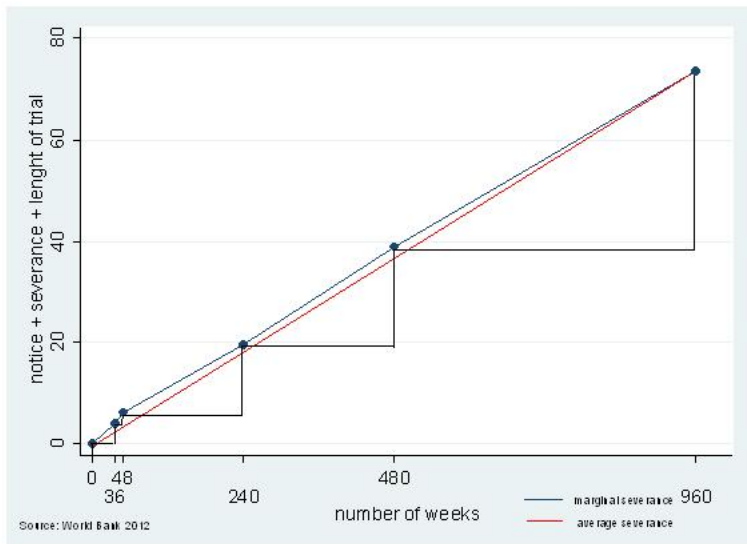
- Italy: art.18 does not apply in firms with less than 15 employees.
- Austria: severance is only paid to employees
- Germany: reinstatement in case of unfair dismissal cannot be imposed by the judge in firms with less than 5 employees
- Australia: no redundancy has to be paid by enterprises with fewer than 15 employees
- Luxembourg: firms with less than 15 employees can choose additional notice in lieu of severance payments

## Severance is mostly Graded with Tenure

Only for fair dismissals explicit rules indexing transfer to tenure. Large cross-country variation. Metric for this Graded Security

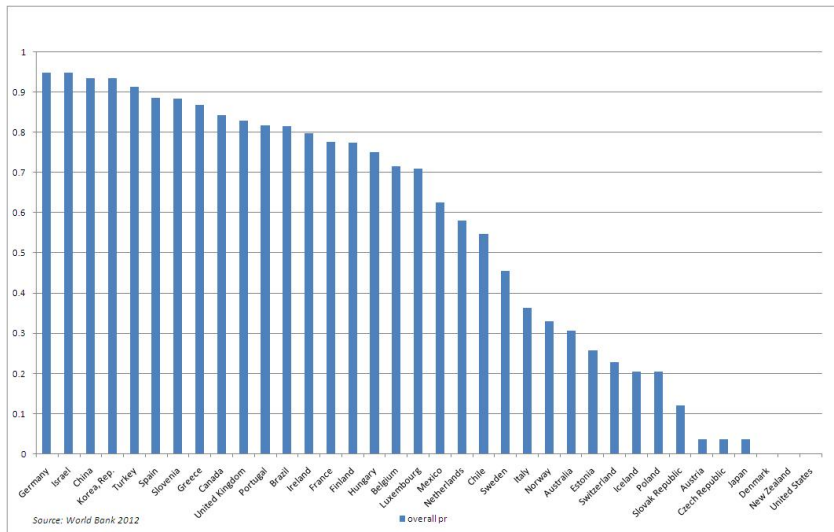
- Severance + notice period at: 0 months (end of probation), 9 months, 1, 5, 10 or 20 years
- In each period we have
  - Marginal Severance*: variation over previous period divided by number of weeks in the previous period
  - Average Severance*: total severance+notice divided by total number of weeks including probationary period
- Graded Security ratio  $\frac{Marg_t}{Avg_t}$ . Summary indicator:
  - Graded Security (GS) Ratio =  $\sum_t \frac{Marg_t}{Avg_t} * s_t$   
 where  $s = \frac{\text{Number of weeks in the period}}{\text{Total number of weeks}}$
  - also at ,99 yearly discount factor
  - if linear can be interpreted as elasticity of severance to tenure

# An example: Germany $GS=.93$





## Overall GS



## How relevant is GS in total EPL?

OECD data We need to assess relevance of the Transfer Component

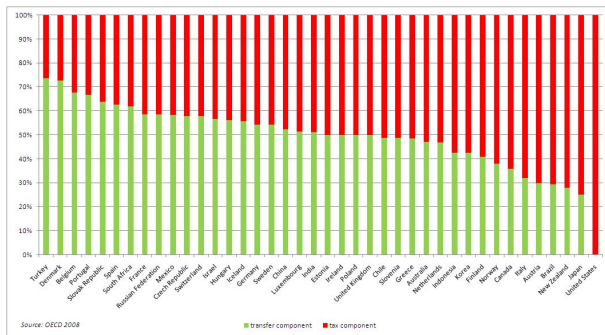
- Components of EPL on regular contracts classified as either tax or transfer (0-6 base scale, 6 most stringent regulation)

OECD code	Description	Classification
REG1	Notification procedures	tax
REG2	Delay involved before notice can start	transfer
REG3A	Length of notice period at 9 months of tenure	transfer
REG3B	Length of notice period at 4 years of tenure	transfer
REG3C	Length of notice period at 20 years of tenure	transfer
REG4A	Severance pay at 9 months of tenure	transfer
REG4B	Severance pay at 4 years of tenure	transfer
REG4C	Severance pay at 20 years of tenure	transfer
REG5	Definition of justified or unfair dismissal	tax
REG6	Length of trial period	tax
REG7	Compensation following unfair dismissal	transfer
REG8	Possibility of reinstatement following unfair dismissal	tax
REG9	Maximum time to make a claim of unfair dismissal	tax

# Transfer Component

OECD data

$$\frac{\sum_i Transfer_i}{\sum_i Transfer_i + \sum_i Tax_i}$$



# The Economics

- Distinction between fair and unfair dismissal economically very relevant
- Workers undertake a costly (private) investments with uncertain return to the firm
- **Unfair Dismissal:** firms will always fire when returns are too low, even when the worker invests. Firms can not commit "not to fire".
- **Fair Dismissal:** workers that do not invest are "shirker". A fair dismissal must be proved in court
- Moral Hazard: with certain probability a shirking worker "can get away with it".

## Baseline Results

- In the baseline model (without severance payments) firing is ex-post too high vis-a-vis efficient separations
- Severance Payments as CUD are not neutral, and can reduce firing and induce workers investment.
- Severance payments as CUD can efficiently reduce firing and induce an efficient allocation of labor

## Results on Contratto Unico

- Models with 3 periods:
  - If workers need to repeatedly invest on the job
  - Severance payments (restricted to CUD) increasing over time are efficient
- Contratto Unico should be taken seriously!

# This Paper

- 1 Empirical Motivation
- 2 Basic Two periods Model on Efficient SP
- 3 Multi period and Contratto Unico
- 4 Empirical Implications
- 5 Policy Implications

## Some References

- Neutrality of Severance Payments (Lazear, 1990)
- Transfers rather than tax in EPL (Garibaldi Violante, 2005).  
Role of Wage rigidity
- Optimal Severance Payments in search economies with risk aversion (Veracierto, 2008)

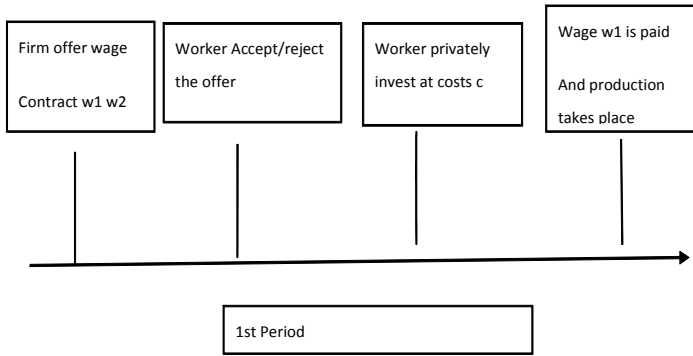


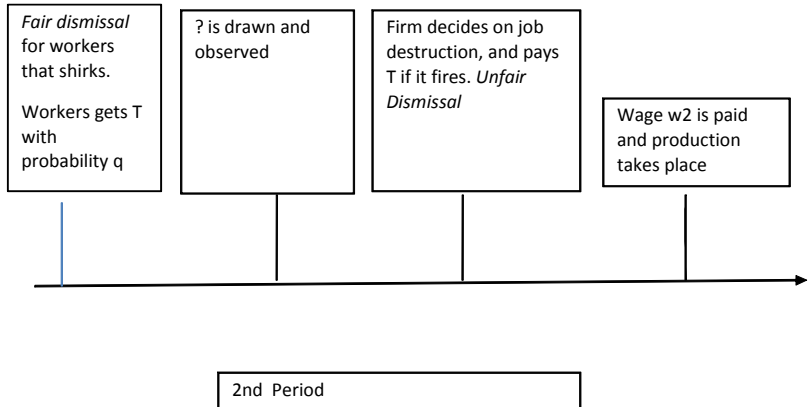
## Basic Set up

- Partial equilibrium: One worker and one firm (risk neutral) with a two periods job No discounting
- Productivity on the job is  $y > b$  (worker's outside option) in every period
- Wages are unilaterally set by the firm with full commitment and no renegotiation  $w_i, i = \{1, 2\}$
- In period 1 the worker faces a specific investment opportunity  $s = \{0, 1\}$ . at costs to the worker  $C$  in the first period.  $s$  is worker's private information.
- Conditional on  $s = 1$ , productivity in the second period will be  $y + \varepsilon$ , with  $\varepsilon$  stochastic from  $F(\varepsilon)$ ; support  $\varepsilon \in [\varepsilon_l, \varepsilon^u]$  with  $\varepsilon_l < 0$ .
- Wages can not be contingent on productivity.
- Conditional on  $\varepsilon$ , the firm can unilaterally fire the worker.

## Fair versus Unfair Dismissal

- **Fair Dismissal.** A firm is entitled to freely dismiss a shirking worker that did not invest.
- **Unfair Dismissal.** In period 2, Dismiss a worker that did invest in period 1 requires a compensation/severance equal  $T$
- The severance payment  $T$  is set by the government and is a pure transfer. The firm can not commit to a severance payment.
- Fairness only proved via a stochastic court ruling.
  - With probability  $1 - q$  the court observes shirking. no  $T$  is due
  - With probability  $q$  a shirking worker "gets away with it" and receives  $T$ .
  - $q$  is observed after the firm has fired the worker. The expected severance to a shirking worker is  $qT$ .





## Definition

The equilibrium is a set of wages  $w_1$ ,  $w_2$ , an investment decision  $s$  of the worker and a firing policy  $\varepsilon_d$  that satisfy

- Firm optimal firing in period 2 (Reservation productivity  $\varepsilon_d$ )
- Incentive compatible wage in period 2
- worker's participation constraint

## Baseline Value Functions

- PDV Worker that does not invest and shirks

$$W_{(s=0)} = w_1 + b + qT$$

- PDV Worker that invest

$$W_{(s=1)} = w_1 - C + (1 - F(\varepsilon_d))w_2 + F(\varepsilon_d)[b + T]$$

where  $F(\varepsilon_d)$  is the dismissal probability

- Firms expected profits if the worker invest are

$$\Pi_{1(s=1)} = y - w_1 + \int_x \text{Max}[y + x - w_2; -T] dF(x)$$

## Reservation Productivity

$$\Pi_2(\varepsilon) = \text{Max}[y + \varepsilon - w_2; -T].$$

$$\varepsilon_d = w_2 - y - T \quad (1)$$

Firing increases with wages while it decreases with productivity and severance payment

## Efficient Separation

When joint surplus is zero

$$\begin{aligned} S_2 &= [w_2 - (b + T)] + [y + \varepsilon - w_2 - (-T)] \\ &= y + \varepsilon - b \end{aligned}$$

where both wages and severance payments do not enter in the joint surplus. Efficient separation  $\varepsilon^*$

$$\begin{aligned} S_2(\varepsilon^*) &= 0 \\ \varepsilon^* &= b - y \end{aligned} \tag{2}$$



## Optimal Contract

$$(1 - F(\varepsilon_d))w_2 + F(\varepsilon_d)(b + T) - C \geq b + qT \quad (\text{IC})$$

$$w_2 = b + \frac{C + [q - F(\varepsilon_d)]T}{1 - F(\varepsilon_d)} \quad (3)$$

$$W(s = 1) = w_1 - C + w_2(1 - F(\varepsilon_d)) + F(\varepsilon_d)(b + T) \geq 2b \quad (\text{PC})$$

$$\varepsilon_d = w_2 - y - T \quad (\text{Reservation Rule})$$

## Too much firing in period 2

In general

$$\varepsilon_d = b - y + \frac{C + [q - F(\varepsilon_d)]T}{1 - F(\varepsilon_d)}$$

### Proposition

*RESULT: If there are no severance payment ( $T = 0$ ) Firing is too high in the second period*

$$\varepsilon_{d(T=0)} = b - y + \frac{C}{1 - F(\varepsilon_d)} > \varepsilon^* = b - y$$

## Perfect Monitoring ( $q=0$ ): Workers Never gets away with Shirking

With  $q = 0$  shirking is perfectly detected.

$$w_{2(q=0)} - b = \frac{C - F(\varepsilon_d)T}{1 - F(\varepsilon_d)} \quad (4)$$

*Severance as a discipline device (you get it if you do not shirk).*

**Empirical Implication:** Senior Wages and Severance negatively correlated for compensation for unfair dismissals

## Severance payment always paid ( $q=1$ ):

*severance payments are neutral.*

$$w_{2(q=1)} - b = \frac{C}{1 - F(\varepsilon_d)} + T \quad (5)$$

$$\varepsilon_{d(q=1)} = b - y + \frac{C}{1 - F(\varepsilon_d)}$$

**Empirical Implication:** Senior Wages and Severance positively correlated when no distinction between fair or unfair is made

## SP and CUD in the two periods model

### Proposition

- a) If there are no severance payment ( $T = 0$ ), the firm fires workers too frequently ( $\varepsilon_d$  is too high)*
- b) In case of perfect court monitoring ( $q = 0$ ), severance payment  $T$  reduces  $w_2$  and hence reduces firing. In other words, severance payments act as discipline device*
- c) If workers always get severance payment ( $q = 1$ ), the severance payment increases  $w_2$  but they are neutral in terms of dismissal. It only influences the wage profile by making it steeper.*

## Optimal Severance Payment

The optimal  $T$  should restore efficient separation

$$\varepsilon_d(T) = \varepsilon^*$$

$$T = w_2(\varepsilon_d) - b$$

i.e., is equal to the wedge between the inside and the outside wage.

$$T^* = \frac{C + [q - F(\varepsilon^*)] T^*}{1 - F(\varepsilon^*)} \quad q < 1$$

Solving this for  $T^*$  gives

$$T^* = \frac{C}{1 - q} \quad q < 1$$

## To Sum Up on Efficiency

### Proposition

- i) If  $q = 1$  (shirkers always get severance pay) the optimal severance pay is undefined and there is no welfare loss of setting  $T = 0$ .
- ii) For all other values of  $q$ , the optimal severance pay is strictly positive and given by

$$T^* = \frac{C}{1 - q} > 0$$

# Monitoring, Firm Size and Severance Payment

- a) Monitoring workers behavior is easier in small firms ( $q_{small\ firms}$  is higher)
- b) Larger  $q$  requires lower severance payments  
Hence, SP should be smaller in small firms



## Extensions to 3 Periods

- :
- i) Workers invest only in period 1.
  - ii) Workers invest in period 1 and Period 2, and further  $C_2 > C_1$   
and  $q_2 > q_1$

## No Investment in Period 2....No Contratto Unico

$t = 3$  but workers only invest  $t = 1$ . Then the following is true

a) The severance pay in period 2,  $T_2$ , is  $y$

$$T_2 \geq \frac{C}{1 - q}$$

b) Optimal firing decisions in period 3 requires that  $T_3 = w_3 - b$

c) The PC gives a constraint on  $w_2 + w_3$ , but not on the wage-tenure profile. The severance pay  $T_2$  is independent of the wage-tenure profile (as long as the participation constraint of the worker is satisfied).

d) If  $w_2 \geq b$ , then  $T_2 > T_3$  (unfortunately)

## Investment in Period 2....Contratto Unico!!

- Worker has to provide effort in both periods.
- Suppose further that the probability of getting away with shirking is higher for senior workers ( $q_2 > q_1$ ) and that there is an increasing marginal cost of effort ( $C_2 > C_1$ ). Then the following holds:
  - a) The severance pay is increasing with tenure
  - b) Wages are increasing in tenure,  $w_2 < w_3$ . If  $q_2$  is close to  $q$ , then we know for sure that also  $w_1 < w_2$ .

# Implied correlations of Wages and Severance tenure profiles

Two implications of the model

- 1 *Positive* correlation between Wage-tenure and Severance-tenure profile when  $q = 1$  (severance applies to both fair and unfair dismissals)
- 2 *Negative* correlation between WT and ST profile in countries where there is only compensation for unfair dismissals ( $q < 1$  all type of contracts-dismissals)

WT profile estimated via "Mincer-type" equation

$$\log(w_i) = \alpha + \beta_1 * TEN_i + \beta_2 * TEN_i^2 + \gamma_1 * EXP_i + \gamma_2 * EXP_i^2 + \epsilon_i$$

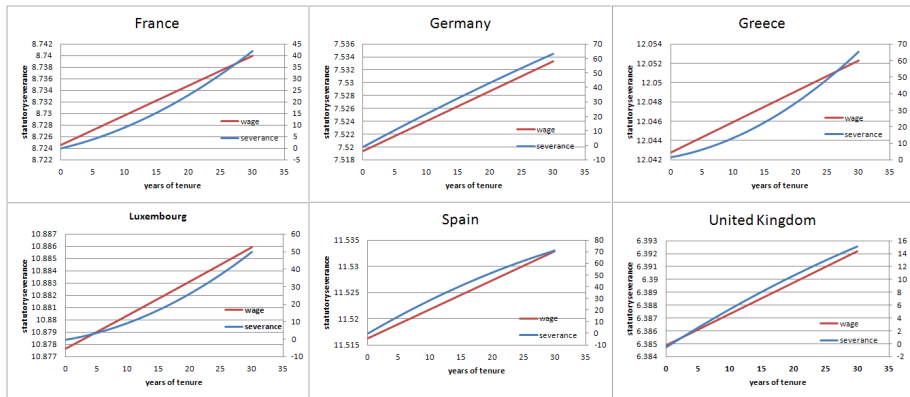
## Some Correlations

- SEE OTHER FILES

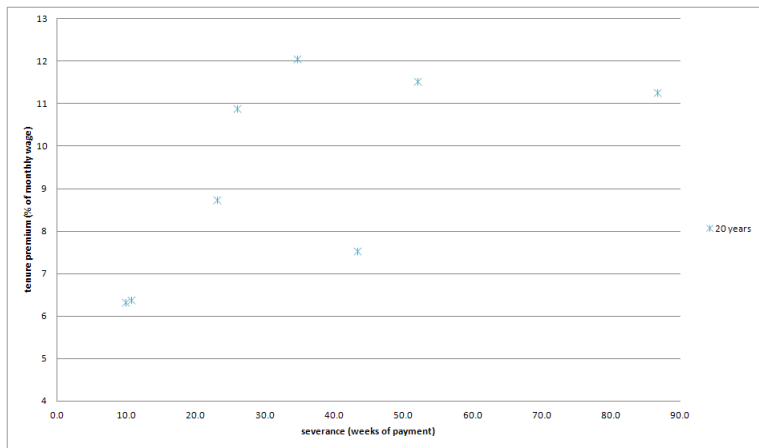
# Estimates of the WT profile

	$\beta_1$	$\beta_2$
Austria	0.0004312	0.0000000
Germany	0.0004658	0.0000000
Denmark	0.0003732	-0.0000002
Netherlands	0.0005314	-0.0000000
Belgium	0.0004589	-0.0000002
Luxembourg	0.0002703	0.0000002
France	0.0005148	-0.0000000
UK	0.0002420	-0.0000001
Ireland	0.0006879	0.0000000
Italy	0.0003259	-0.0000000
Greece	0.0003183	-0.0000000
Spain	0.0005554	0.0000000
Portugal	0.0003096	-0.0000000
Finland	0.0004224	-0.0000003
Sweden	0.0002256	-0.0000001

# Wages and (pure) severance tenure profiles for all types of dismissals



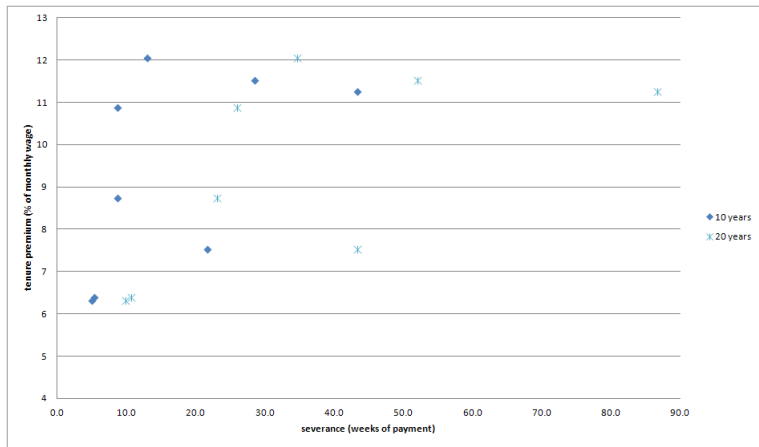
# Tenure premium vs. severance



correlation= .1994\*\*

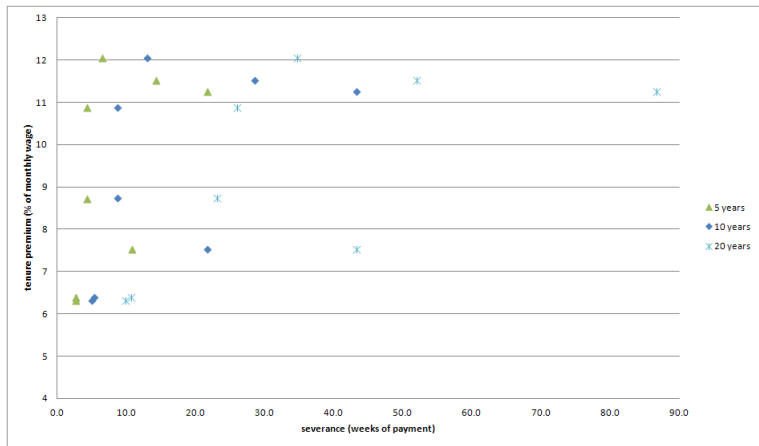


# Tenure premium vs. severance



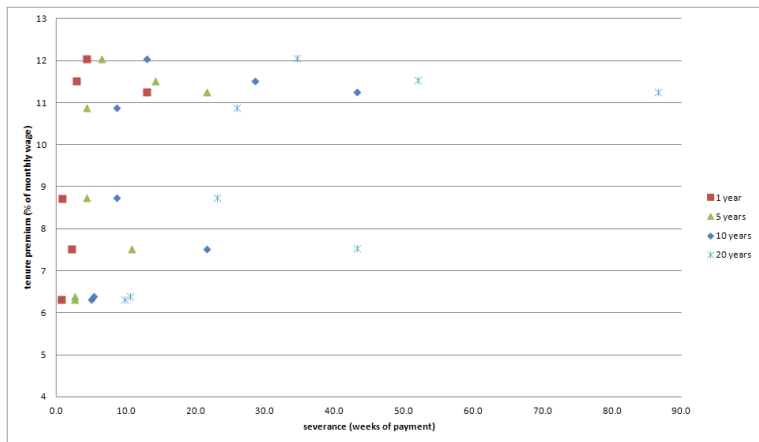
correlation= .2359\*\*\*

# Tenure premium vs. severance



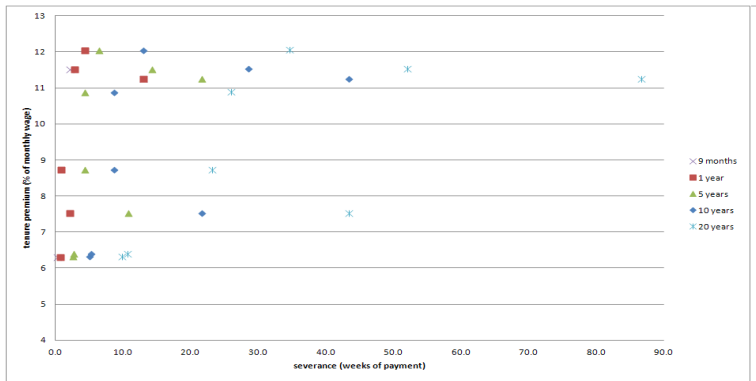
correlation= .2609\*\*\*

# Tenure premium vs. severance



correlation= .2716\*\*\*

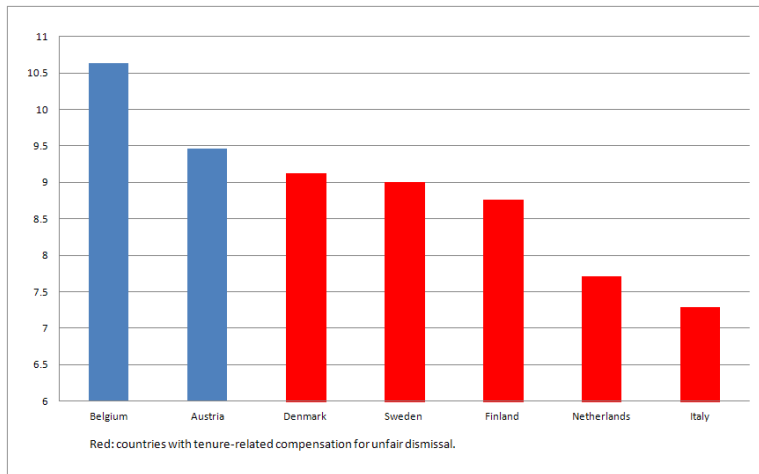
# Tenure premium vs. severance



correlation= .2780

## Wage premium at 20 years of tenure

Countries with only Compensation for Unfair Dismissals. Red bars: countries with this compensation related to tenure



## Policy Implications and Conclusions

### Contratto Unico and Reality

- Severance payments can act as a worker's discipline device
- Rationalize why SP should be smaller in smaller firms
- Severance Payments Increasing with tenure should be taken seriously
- Different Proposals in Different Countries, albeit similar in spirit
- Policy should limit severance to CUD, not what it is currently envisaged in the Italian and Spanish reform proposals.