

# Institutional Reforms and Dualism in European Labor Markets

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April, 15 2010

# Outline

- 1 Introduction
- 2 Institutions and Reforms
- 3 A Simple Model of Labor Reallocation and Reforms
- 4 Learning from the Reforms
- 5 Final Remarks

# Motivations

- Huge literature on European type labor market institutions
- Reviewed up to 2000 in previous HLE volumes
- No survey to date on the very many Institutional **Reforms** taking place especially in Europe
- Reforms are widely used to identify the effects of LM institutions as **natural experiments**

# Motivations

This rich empirical literature needs stronger guidance from economic theory.

- Because reforms rarely increase or reduce a one-dimensional institution for everybody as envisaged by models with institutions
- But create long-lasting asymmetries
- Properties of these **multi-tier regimes** have yet to be fully understood

# Institutional Clusters in Europe

	<b>Employment Protection</b> <i>most restrictive</i>	<b>Unemployment Benefits</b> <i>most generous</i>	<b>Active Labor Market Policies</b> <i>highest</i>	<b>Taxes on Low Wages</b> <i>highest</i>	<b>Collective Bargaining</b> <i>most centralized</i>	<b>Average Ranking</b>
Belgium	9	5	2	1	4	4.2
Sweden	7	6	3	2	7	5
Denmark	12	2	1	6	8	5.8
Netherlands	10	1	4	9	6	6
France	3	3	5	7	14	6.4
Finland	11	8	6	5	3	6.6
Austria	8	10	9	8	2	7.4
Spain	4	7	7	11	9	7.6
Portugal	1	4	11	12	11	7.8
Italy	5	9	12	3	10	7.8
Germany	6	12	8	4	12	8.4
Greece	2	14	14	10	5	9
Ireland	14	11	10	15	1	10.2
United Kingdom	15	15	13	14	13	14
United States	16	13	16	13	16	14.8
Japan	13	16	15	16	15	15
	<i>less restrictive</i>	<i>less generous</i>	<i>lowest</i>	<i>lowest</i>	<i>less centralized</i>	

Legend: non-European

Anglo-Saxon

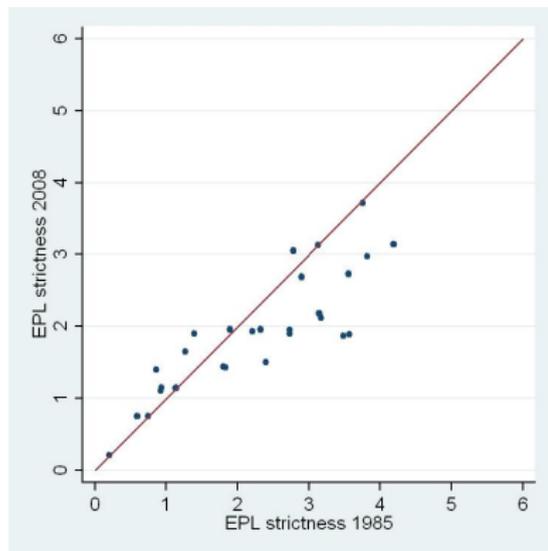
Scandinavian

Continental Eu.

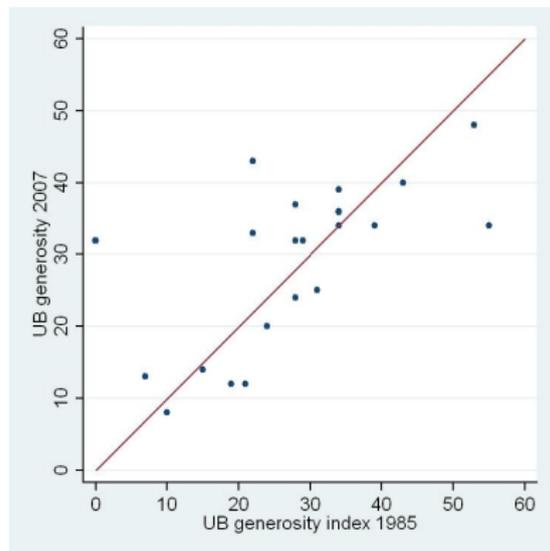
Southern Eu.

# Institutional Activism

Level of Labor Market Institutions in mid 1980s and at the most recent observation available:

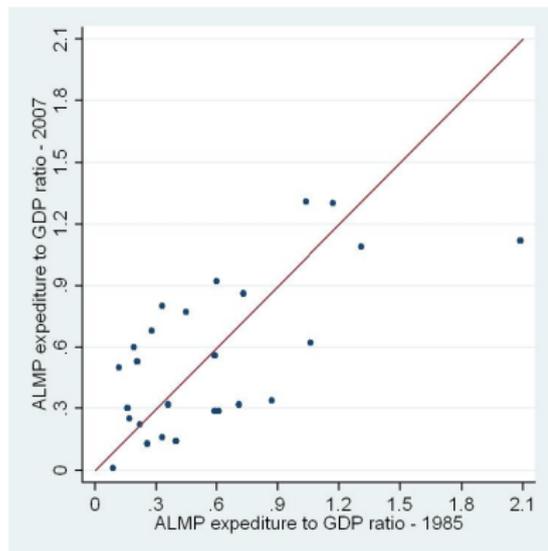


OECD Index of Strictness of  
Employment

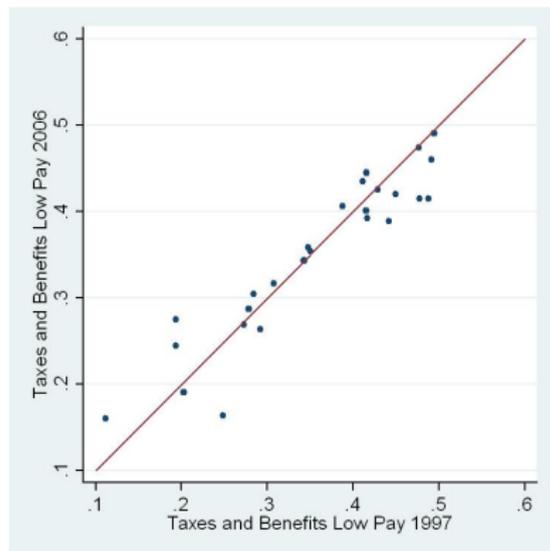


OECD Summary Generosity  
measure of UB

# Institutional Changes



ALMP Expenditure to GDP Ratio  
(OECD)



Taxes and Benefits low wages  
(OECD)

# Mostly in Europe

	EPL Index				UB Generosity measure			
	European		non-European		European		non-European	
	1985	2008	1985	2008	1985	2007	1985	2007
Mean	2.46	1.99	1.78	1.71	29.81	32.69	19.80	15.80
St. Dev	1.04	0.66	1.29	1.18	14.38	9.53	8.11	6.72
Average % Variation (modulus)	23.59%		17.39%		28.87%		19.91%	

	ALMP/GDP				Low Wages Tax (% points)			
	European		non-European		European		non-European	
	1985	2007	1985	2007	1997	2006	1997	2006
Mean	0.64	0.68	0.42	0.27	40.02	38.55	26.92	28.28
St. Dev	0.53	0.36	0.23	0.23	7.77	8.12	10.91	8.58
Average % Variation (modulus)	79.36%		56.38%		6.79%		16.26%	

Evolution of Labor Market Institutions in OECD countries

# Some Key Definitions

- Labor market **institution**: a system of laws, norms or conventions resulting from a *collective* choice, and providing constraints or incentives which alter individual choices over labor and pay
- Institutional **reform**: change in the design of an institution
  - **Two-tier (vs. complete)** reform: focus on the scope/coverage; the reform is confined to a subset of the potentially eligible population (alternatively its complete phasing in involves a very long transitional period)
  - **Incremental (vs. discrete)** reform: focus on the size; the reform involves a small change in the overall institutional level-indicator
  - **Structural** reforms: either complete and discrete reforms

# Some Key Definitions

Examples of Two-Tier reforms:

- The battery of reforms of EPL carried out in Italy in the 1997-2003 period expanded the scope of fixed term contracts, introduced Temporary Work Agency, increased the potential duration of fixed-term contracts and introduced new types of atypical contracts leaving regulations on the dismissals of workers with open-ended contracts unchanged.
- The 1989 reform of the British UB system reduced replacement rates for the short-term claimants, by increasing the length of the minimum waiting period required for eligibility to benefits for this category of workers only.

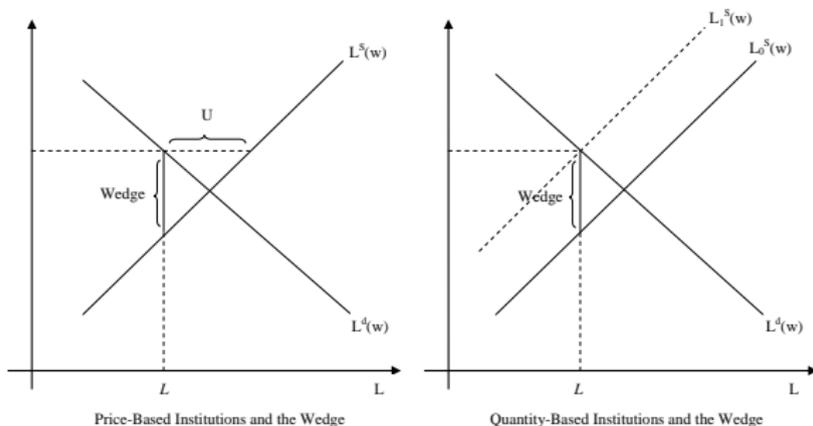
# The Taxonomy

<b>Size</b>	Discrete Two-tier	Structural
	Incremental Two-tier	Incremental Complete
	<b>Scope</b>	

# Orientation of Reforms

Every institution creates a wedge between labor's marginal productivity and opportunity cost.

Reforms increase or reduce the wedge



# Tracking Reforms in Europe

## The FRDB Social Policy Reform Inventory

- EPL
- UB
- AP
- ECI
- ER

# Tracking Reforms in Europe

A snapshot from Fondazione Debenedetti database (1):

## Spain - EPL database

Year	Month	id	Number	Law	Description	Topic	Target
1980	3	ES077	1	Ley 51/1980, Basic Employment Law (Ley Básica de Empleo)	Regulations governing the contract of employment, making contracts of employment more flexible; permanently established workforce representatives as a way to regulate workers' participation; and consolidated the status of collective agreements, as opposed to Labour Ordinances, as the principal source of industry-wide and occupational provisions.	Trade union rights	employees
			2		Regulation on termination of employment contracts.	Individual dismissals - Procedural obligations	employees
1981		ES078	1	Real Decreto 1362/1981	Regulation of fixed-term contracts	Fixed-term contracts	Fixed-term contracts
1984	8	ES001	1	Ley 32/1984	Restrictions for fixed-term contracts are substantially relaxed. Legal norms that established the circumstances under which a fixed term contract could be stipulated are practically over rided by the principle of promoting employment through the extension of its use. The so called "Contrato temporal de fomento del empleo" (Temporary Employment Promoting Contracts - TEPC) has a maximum duration of 3 years and a minimum of 6 months. The limit to the maximum number of TEPC to be signed is eliminated.	Fixed-term contracts	Fixed-term workers

# Tracking Reforms in Europe

A snapshot from Fondazione Debenedetti database (2):

## Spain - EPL database

Topic	Target	Sign	Overall sign	Two-Tier vs. Complete	Two-Tier vs. Complete - Overall	incremental vs. discrete	Source	Other policy area?
Trade union rights	employees	increasing	increasing	complete	complete	incr	EMIRE	
Individual dismissals - Procedural obligations	employees	increasing		complete				
Fixed-term contracts	Fixed-term contracts	decreasing	decreasing	two-tier	two-tier	incr	NATLEX	
							IBERLEX - Base de datos -	

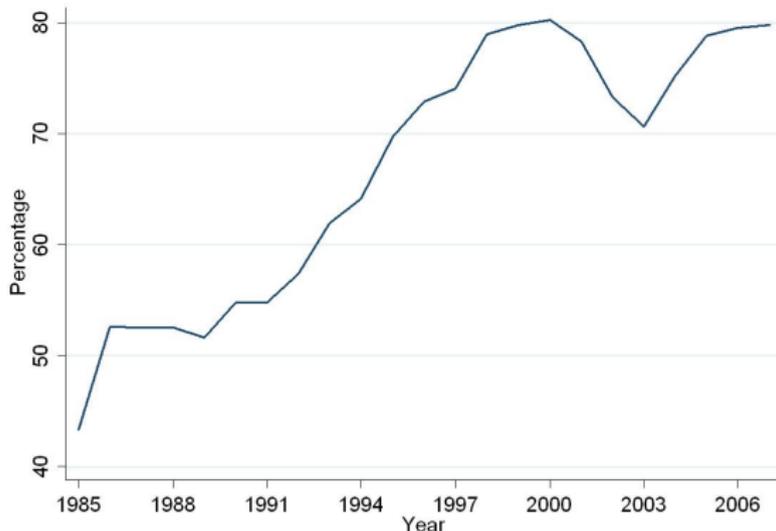
# Reforms and the Wedge

Reforms by Institution and Direction in 7 European Countries (France, Germany, UK, Spain, Italy, Netherlands, Denmark) in the 1980-2007 period.

Reform area	Decreasing the Wedge	Increasing the Wedge	Total per row	Of which decreasing
<b>EPL</b>	112	87	199	56%
<b>UB</b>	139	114	253	55%
<b>AP</b>	230	12	242	95%
<b>ECI</b>	113	11	124	91%
<b>ER</b>	38	27	65	58%

# Reforms Decreasing the Wedge

## Share of Reforms Decreasing the Wedge



Note: 5-year backward weighted moving average

# Packaging of Reforms

Distribution of reforms by number of policy areas involved

<b>Number of Reform Areas involved by Reform</b>	<b>Number of Reforms</b>	<b>Percentage on total</b>
<b>1 area</b>	728	83.87
<b>2 areas</b>	109	12.56
<b>3 areas</b>	28	3.23
<b>4 areas</b>	3	0.35
<b>Total</b>	<b>868</b>	

# Two-Tier Reforms

- Two-tier involve less than 50% of potentially eligible population

<b>Reform area</b>	<b>Two-tier</b>	<b>Complete</b>	<b>Total per row</b>	<b>Of which two-tier</b>
<b>EPL</b>	103	96	199	52%
<b>UB</b>	116	137	253	46%
<b>AP</b>	155	87	242	64%
<b>ECI</b>	74	50	124	60%
<b>ER</b>	49	16	65	75%

# Incremental Reforms

- Incremental reforms involve change of less than 10% of the average period cross-country standard deviation in the level of the institution (OECD indicator)

EPL reforms by size and scope as a percentage of the total

<b>Size</b>	Discrete	8.5%	3.5%
	Incremental	43.3%	44.7%
		Two-tier	Complete
		<b>Scope</b>	

# Labor market vs. Financial and Product Market Reforms

## Reforms of Product, Financial and Labor Markets (1985-2007)

Product Mkt Reforms	Decreasing the Wedge	Increasing the Wedge	Total	Of which Increasing
Discrete	30	0	30	100%
Incremental	7	13	20	35%
<b>Total</b>	<b>37</b>	<b>13</b>	<b>50</b>	<b>74%</b>
<b>Of which discrete</b>	<b>81%</b>	<b>0%</b>	<b>60%</b>	

Financial Mkts Reforms	Decreasing Wedge	Increasing Wedge	Total	Of which Decreasing
Discrete	52	0	52	100%
Incremental	42	0	42	100%
<b>Total</b>	<b>94</b>	<b>0</b>	<b>94</b>	<b>100%</b>
<b>Of which discrete</b>	<b>45%</b>	<b>0%</b>	<b>45%</b>	

Labor Mkt Reforms	Decreasing Wedge	Increasing Wedge	Total	Of which Decreasing
Discrete	16	12	28	57%
Incremental	23	18	41	56%
<b>Total</b>	<b>39</b>	<b>30</b>	<b>69</b>	<b>57%</b>
<b>Of which discrete</b>	<b>41%</b>	<b>43%</b>	<b>41%</b>	

# How LM institutions are reformed: a summary

- Many LM reforms
- Sometimes undoing previous reforms: net changes in the values of the indicators conceal a lot of action
- Two-tier reforms majoritarian
- Trade-off between size and scope

# Gross Job Flows in the MP model

Equilibrium job search. Labor market tightness,  $\theta \equiv v/u$ . Aggregate matching function is  $m = m(u, v)$ , unconditional probability of a vacancy to match with an unemployed worker is  $q = \frac{m(u, v)}{v} = m(\theta, 1)$ , with  $q'(\theta) < 0$ ,  $q''(\theta) > 0$ , and  $\lim_{\theta \rightarrow 0} q(\theta) = \infty$ , the probability of an unemployed worker meeting a vacancy is  $\frac{m(u, v)}{u} = \frac{\theta m(u, v)}{v} = \theta q(\theta)$ .

# Unemployment

- Endogenous job destruction.
- Match productivity hit by shocks at frequency  $\lambda$  (Random draw from  $F()$ )
- If it falls below an (endogenously determined) reservation productivity level  $R$ , the job is destroyed.
- The evolution of unemployment is governed by

$$\Delta u = \lambda F(R)(1 - u) - \theta q(\theta)u \quad (1)$$

where the constant labor force is normalized to one, so that  $(1 - u)$  denotes employment.

- Equating (1) to zero and solving for  $u$  obtains the steady state  $u$ :

$$u = \frac{\lambda F(R)}{\lambda F(R) + \theta q(\theta)}$$

# Introducing Institutions

Four types of Institutions:

- 1 an exogenous firing **tax**  $T$  (not transfer) levied on termination of job-worker matches
- 2 an **unemployment benefit**  $b = \rho \bar{w}$  offered as a replacement of the average wage,  $\bar{w}$ , at the rate  $0 < \rho < 1$  throughout the entire unemployment spell ( $\rho$  measures the generosity of unemployment benefits)
- 3 an **employment subsidy** (or tax credit),  $e < b$  also provided on a flow basis at continuing jobs.
- 4 a **hiring-recruitment subsidy**,  $h < c$ , reducing the flow costs of unfilled vacancies,  $c$

Job creation and destruction margins are affected by these institutions either directly and indirectly, that is, via their effects on wages-wedges. Govt budget constraint not considered.

# Institutions in Partial Equilibrium

Wages set according to a bilateral bargaining process between each worker and each employer. The institution-free and match-specific wage obeys the Nash bargaining rule:

$$w(x) = \beta(x + c\theta)$$

where  $0 \leq \beta < 1$  measures the relative bargaining strength of workers vis-a-vis employers. Wedge related to match frictions and bargaining power.

# Institutions and the Wedge

Introducing now the three sets of institutions described above and solving again the Nash bargaining problem we obtain the institution-weighted wage equation:

$$w(x) = (1 - \beta)(\rho w - e) + \beta [x + (c - h)\theta + rT]$$

Showing how institutions affect the size of the wedge and the way in which rents are split between workers and firms

- When  $\beta = 0$ , wages equal the reservation wage of the unemployed
- When instead  $\beta = 1$ , the workers will appropriate the entire match surplus. (Labor market shuts down; we need to impose  $\beta < 1$ )

Notice that the effects of  $\theta$  on  $w$  interact with institution hiring subsidy.

# General Equilibrium Effects of Complete Reforms

Allowing macrovariables to vary (totally differentiate the two equilibrium gross job creation and gross job destruction conditions, implicitly providing the equilibrium values  $\theta^*$  and  $R^*$ ).

Comparative Statics Results of Complete Reforms

<i>Effect of an increase in <math>\Rightarrow</math> on <math>\Downarrow</math></i>	$\rho$	$T$	$e$	$h$
$R^*$	+	-	-	+
$\theta^*$	-	-	+	+
$u^*$	+	?	-	?
<b>Probability of job loss</b>	+	-	-	+
<b>Job finding rate</b>	-	-	+	+
<b>Average wage</b>	+	?	-	?

## Economics behind these results

An increase in the **replacement rate** offered by unemployment benefits moves up the reservation productivity at which matches are dissolved by increasing the outside option of workers. The new equilibrium features a higher job destruction *rate*  $\lambda F(R^*)$ . The higher outside option of workers also positively affects  $\delta$  the average wage in continuing jobs (second round effect on UB).

As gross job destruction increases, the equilibrium unemployment rate unambiguously increases, bringing down the equilibrium level of market tightness,  $\theta^*$

The new equilibrium features a higher probability of job loss and a lower job finding rate  $\theta^* q(\theta^*)$ .

## More on Complete Reforms

An increase in **firing taxes** reduces the gross job destruction rate. Also job creation declines. Ambiguous effect on unemployment.

An increase in **employment subsidies** reduces  $R^*$  and increases job creation. The partial equilibrium wage effect can be offset by the decline in average productivity. Unemployment falls.

An increase in **recruitment subsidies** increases job creation and destruction. Ambiguous effects on unemployment. Polar case than rise in  $T$

## Two-tier Reforms in the MP model

A two-tier reform of employment protection reduces firing taxes for entry jobs ( $T_0 = 0 < T$ ), while leaving employment protection unaltered for continuing jobs.

New jobs last until they are hit by a productivity shock, occurring, as for the other types of jobs, at Poisson frequency  $\lambda$ . If the new realization is below a reservation productivity specific to entry jobs,  $R_0$ , the match is dissolved and ends with a flow into unemployment. If instead the new productivity realization is above  $R_0$ , jobs are converted into permanent contracts, covered by the standard firing taxes,  $T$

## Two-tier Reforms in the MP model

The expected duration of a fixed-term job is  $\frac{1}{\lambda}$  whilst the rate at which these jobs are converted into permanent jobs is  $\lambda[1 - F(R_0)]$  where  $R_0$  is endogenously determined at the equilibrium

Insofar as firing taxes are higher for long-tenured than for entry jobs (a standard feature of employment protection in all countries), the reservation productivity at entry jobs will be higher than the reservation productivity at continuing jobs, that is,  $R_0 > R$ .

Entry jobs also receive employment subsidies. Unemployed from entry jobs are entitled to lower UB ( $\rho_0 < \rho$ )

## Insider and Outsider Wages

We now have two job destruction conditions implicitly defining the two thresholds ( $R$  and  $R_0$ ), and two wage equations. The first wage equation determines workers pay in entry jobs or the wage of *outsiders*, denoted by the subscript 0.

$$w_0 = (1 - \beta) (\rho_0 \bar{w} - e_0) + \beta(1 + (c - h)\theta - \lambda T)$$

The second wage equation applies to continuing jobs and provides *insider* wages at all productivity levels above the reservation productivity level,  $R$

$$w(x) = (1 - \beta) \rho \bar{w} + \beta(x + (c - h)\theta + rT)$$

# Insider and Outsider Wages

The difference between insider and outsider wages at the entry productivity level is given by

$$w(1) - w_0 = (1 - \beta)w(\rho - \rho_0 + e_0) + \beta(rT)$$

Even for lower  $x$ ,  $w(x) > w_0$  in this setting. Continuing jobs have lower average productivity but higher average wages than entry jobs.

## Job flows and two-tier reforms

The job creation and job destruction condition for the two-tier regimes can be derived by imposing that  $V = 0$ ,  $J(R_0) = 0$  and  $J(R) = -T$  and using the Nash bargaining rule. This yields the job creation condition

$$\frac{(1 - \beta)(e_0 - R_0)}{r + \lambda} - \frac{\beta}{r + \lambda}(1 - \lambda T) = \frac{c - h}{q(\theta)}$$

The job destruction condition for temporary jobs

$$R_0 + \frac{\lambda}{r + \lambda} \int_{R_0}^1 (z - R_0) dF(z) + e_0 - \lambda T = \rho_0 w + \frac{\beta(c - h)\theta}{1 - \beta}$$

and the job destruction for continuing jobs

$$R + \frac{\lambda}{r + \lambda} \int_R^1 (z - R) dF(z) + rT = \rho w + \frac{\beta(c - h)\theta}{1 - \beta}$$

# Job flows and two-tier reforms

Comparative Statics Results of Two-Tier Reforms

<i>Effect of an increase in <math>\implies</math></i>	$\rho$	$T$	$e_0$
<i>on <math>\downarrow</math></i>			
$R_o^*$	0	+	+
$R^*$	+	-	0
$\theta^*$	0	+	+
$u^*$	+	-?	-?
<b>Job loss rate (from entry jobs)</b>	0	+	+
<b>Job loss rate (from continuing jobs)</b>	+	-	0
<b>Job finding rate</b>	0	+	+
<b>Tenure (wage premium)</b>	+	+	+
<b>Conversion temporary-permanent</b>	0	-	-
<b>Entry jobs as % of total employment</b>	+	+	+

# Comparing Two-tier and Complete Reforms

Comparative Statics of Reforms	Two-tier			Complete			
	$\rho$	$T$	$e_0$	$\rho$	$T$	$e$	$h$
<i>Effect of an increase in <math>\Rightarrow</math></i>							
<i>on <math>\Downarrow</math></i>							
$R_o^*$	0	+	+				
$R^*$	+	-	0	+	-	-	+
$\theta^*$	0	+	+	-	-	+	+
$u^*$	+	-?	-?	+	?	-	?

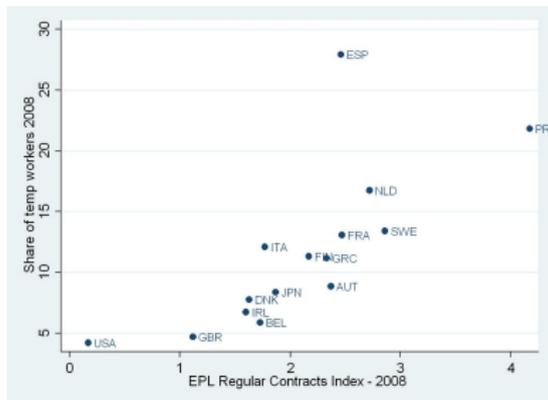
# Comparing Two-tier and Complete Reforms

Key differences with respect to complete reforms:

- $\rho \uparrow$  accompanied by reduction of  $\rho_0$  does not necessarily increase  $u$  (flexicurity)
- $T \uparrow$  increases turnover
- $\rho \uparrow$  may increase job destruction (for entry jobs)
- Less ambiguity in signing their effects on  $u$ .

# How relevant is dualism?

$$\rho = 0.81$$



Strictness of EPL for Permanent Contracts and Share of Temporary Contracts in Total (Dependent) Employment

$$\rho = -0.72$$



Strictness of EPL for Permanent Contracts and Transition Probability from Temporary to Permanent Contracts

## Two-tier wage structure

$$\log w_i = \alpha + \beta_1 EDU_i + \beta_2 EDU_i^2 + \gamma_1 TEN_i + \gamma_2 TEN_i^2 + \mu PERM_i + \varepsilon_i$$

	Price Based	St. Err.	Obs.
Austria	20.1***	0.023	9867
Belgium	13.9***	0.017	7948
Denmark	17.7***	0.015	8009
Finland	19.0***	0.011	8940
France	28.9***	0.016	15260
Germany	26.6***	0.010	25448
Greece	20.2***	0.013	6978
Ireland	17.8**	0.069	1583
Italy	24.1***	0.008	30177
Luxembourg	27.6***	0.018	7889
Netherlands	35.4***	0.021	15845
Portugal	15.8***	0.016	7550
Spain	16.9***	0.007	22626
Sweden	44.7***	0.036	5412
United Kingdom	6.5*	0.037	7000

# Complete Reforms with a long phasing-in

- Transitional dynamics may depart significantly from steady state outcomes of complete reforms.
- Are deviations increasing with initial level of the institution and the size of the reform?

# Complete Reforms with a long phasing-in

Example of two-tier reforms of Epl (Boeri and Garibaldi, 2007)

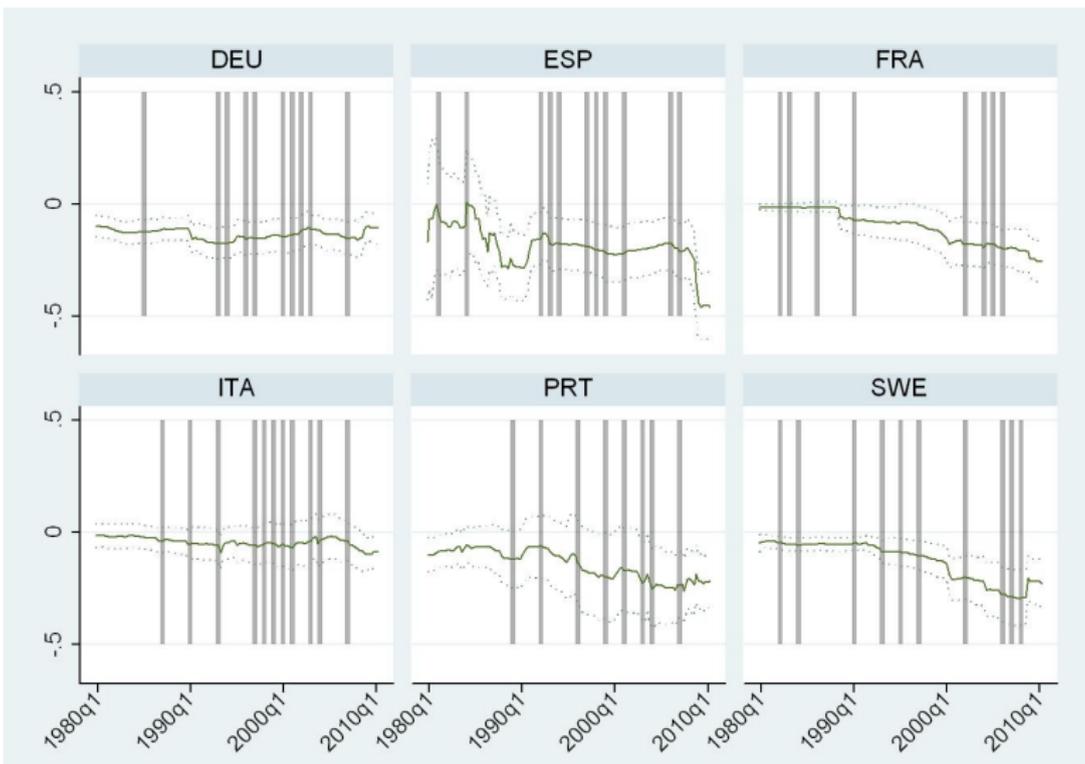
# Pre-Reform EPL Strictness and Post-Reform Temporary Employment

Country	Time Period	EPL strictness (Regular Index)	EPL Strictness (Temporary Empl.)	Temporary Emp. Growth $\Delta ET_t$ (000)	Contribution of Temporary Jobs $\Delta ET_t / E_0$
Belgium	1987-1996	1.68	4.63	22.7	0.66
	1997-2005	1.71	2.63	135.3	3.54
	$\Delta$	0.03	-2.00	112.6	2.89
Italy	1987-1997	1.77	5.38	402.9	0.02
	1998-2005	1.77	2.82	823.2	4.11
	$\Delta$	0	-2.56	420.3	4.09
The Netherlands	1987-1995	3.08	2.38	340.1	5.79
	1996-2005	3.06	1.45	288.8	3.80
	$\Delta$	-0.02	-0.93	-51.3	-2
Portugal	1987-1996	4.56	3.34	-168.9	-4.10
	1997-2005	4.29	2.94	431.8	10.09
	$\Delta$	-0.27	-0.40	600.6	14.19
Spain <sup>1</sup>	1981-1984	3.83	-	0	0
	1985-1995	3.67	3.66	3377.1	28.5
	$\Delta$	-0.16	-	3377.1	28.5
Sweden	1987-1996	2.88	3.28	-138.9	-3.22
	1997-2005	2.86	1.63	189.2	4.82
	$\Delta$	-0.02	-1.65	328.1	8.04

<sup>1</sup> For Spain, 1981-1984, the EPL index is the overall index, as in Nickell (2006)

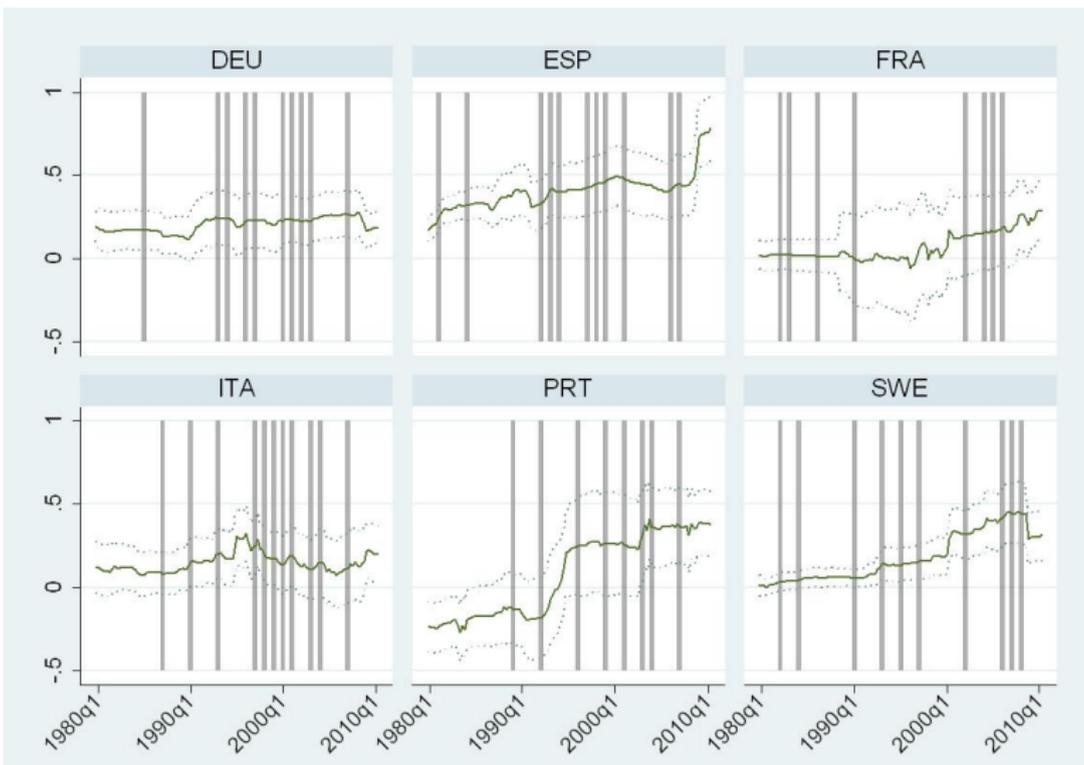
# Honeymoon effect and unemployment volatility

Estimating Okun's Law Betas:  $\Delta u_t = \alpha + \beta \Delta y_t + \varepsilon_t$



# Honeymoon effect and employment volatility

Estimating Okun's Law Betas:  $\Delta e_t = \alpha + \beta \Delta y_t + \varepsilon_t$



# What do we need to know about the reforms: a checklist

- What are the relevant institutional interactions involved by the reform?
- Are the control and the treatment group initially homogenous also in terms of these other institutions?
- Is the reform packaged with other reforms? If so, how can they affect the outcomes of the reform?
- How large is the reform with respect to the initial level of the institution? How tightly is the regulation enforced to start with?
- How large is the segment not involved by the reform?
- Does the reform have relevant spillovers on the unreformed segment(s)?
- How many different regimes does it involve?
- Is the reform large enough to have macro significance?

# Review

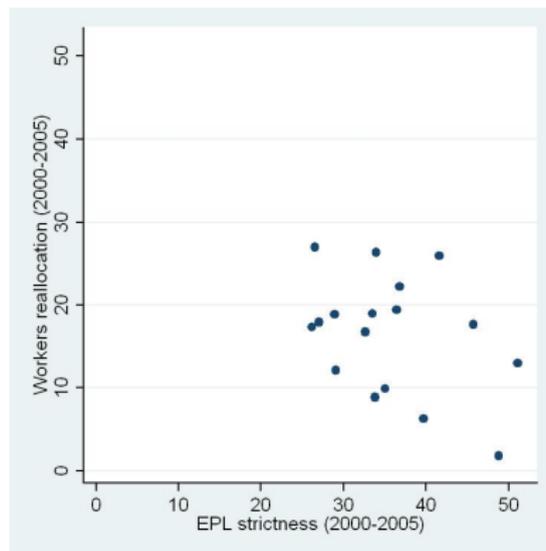
Literature based on cross-country variation in the OECD EPL strictness indicator: why there is not less employment turnover with strict EPL?

Author(s)	STOCKS		FLOWS	
	Employment	Unemployment	Employment	Unemployment
Emerson (1988)	?	?	–	–
Lazear (1990)	–	+		
Bertola (1990)	?	?	?	–
Grubb & Wells (1993)	–			
Garibaldi, Koening & Pissarides (1994)	?	?	?	–
Addison & Grosso (1996)	?	?		
Jackman, Layard & Nickell (1996)	?	?	–	–
Gregg & Manning (1997)	?	?		–
Boeri (1999)	?	?	+	–
Di Tella & McCulloch (1998)	–	+		
OECD (1998)	?	?	+	–
Kugler & StPaul (2000)			+	–
Belot & Van Ours (2001)		–		
Nickell, Nunziata & Ochel (2005)	?	?		
Garibaldi & Violante (2005)	+	-		

The Effects of Employment Protection on Labor Market: Empirical Results

# It does not seem to be a measurement problem

Workers Reallocation and Epl strictness (2000-2005)  
Revised series - OECD(2009)



Is it Two-tier Reforms?

# Problems

Identification of causal effects in a differences-in-differences framework requires that the two segments of the labor force taken as the "treatment" ( $s = 1$ ) the "control" ( $s = 0$ ) groups would have had the same trends in the outcome variable, had the reform not occurred. Assuming for simplicity that EPL reform simply adds a constant  $\delta$  to the conditional mean of some outcome variable (e.g., employment,  $N$ ), i.e.:

$$N_{it} = \beta_t + \gamma_i + \delta s_i + \varepsilon_i$$

where  $i$  denotes the labor market segment (temporary vs permanent contracts),  $t$  is time,  $\beta$  is a common time trend,  $\gamma$  is a segment-specific fixed effect,  $R$  is a dummy variable taking value one after the reform limited to the treatment group.

# Employment Protection

In this case differences in differences identify  $\delta$  as follows:

$$\begin{aligned} & \{E[N_{it} | s_i = 1, t = 1] - E[N_{it} | s_i = 1, t = 0]\} + \\ & - \{E[N_{it} | s_i = 0, t = 1] - E[N_{it} | s_i = 0, t = 0]\} = \delta \end{aligned} \quad (2)$$

If the reform of EPL also affects the "control" group, by adding  $\delta_2$  to its conditional mean. In this case, the first difference in (2) identifies  $\delta_1 + \beta + \gamma$  while the second difference  $\delta_2 + \beta + \gamma$ . And double diff obtains differential effect  $\delta_1 - \delta_2$ .

# Review

- Macro and micro literature consistent in finding that duration of UBs matters more than replacement rates.
  
- Is it due to the endogeneity of the duration of UBs?

## Problems: Policy endogeneity

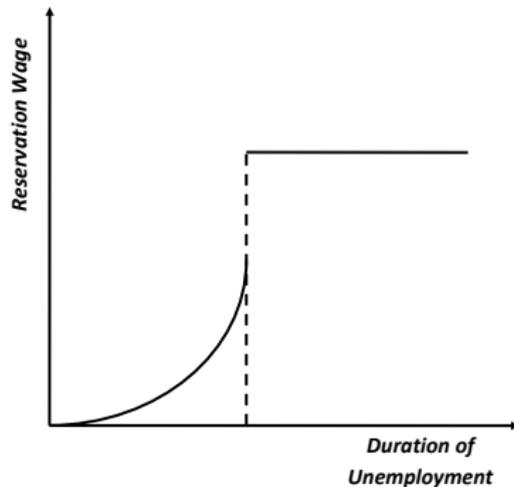
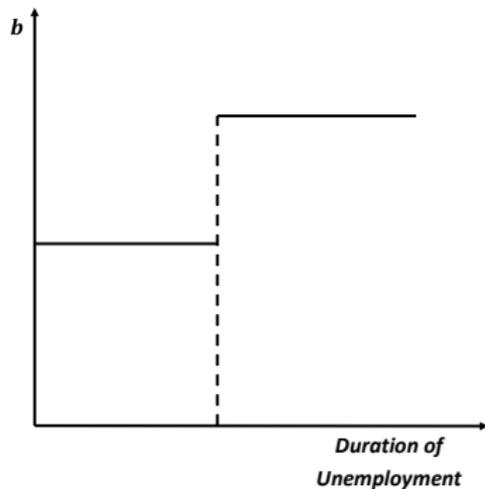
Evidence that duration of UB reacts to levels of unemployment.

If reforms are dictated by stronger trend growth of unemployment being different in the two groups ( $\beta_{00} > \beta_{10}$ ), a double differences identifies  $(\beta_{01} - \beta_{00}) - (\beta_{11} - \beta_{10}) + \delta$  attributing to the reform effects which are instead related to differential dynamics of unemployment in the absence of the reform.

Another problem with the literature on UB reforms is that it is mainly focused on job finding rates while, according to theory of reforms, impact effect should be on the job destruction side.

# Problems: Neglected Interactions with other institutions

## Example of Social Assistance



# Review

- Narrow targets: poverty and employment
- Literature mostly on US and UK.
- A few randomized experiments (mainly in Us and Canada)
- Partial equilibrium analysis.
- Focus on efficiency

# Problems

- Sorting into treatment and control groups
- Empirical research on employment conditional incentives has mainly evaluated the effects on labor supply.
- The model suggests that labor demand effects could also be important.

# Review

- Compulsory involvement on PES placement and counselling services. Enforcement on work-tests.
- Sanctions are effective.
- Public Employment Services, by themselves, not much.

# Problems

- Activation relies on self-selection on the most needy.
- Thus serious endogenous sorting issue.
- Wage effects generally overlooked. Important also in partial equilibrium.

# Final Remarks

Theoretical literature on labor market institutions evaluates complete reforms, but the bulk of reforms involves the introduction of two-tier regimes. Empirical research draws mainly on these two-tier reforms, but has little theoretical guidance. Extensions of a general equilibrium model of the LM suggest that two-tier reforms have important reallocative effects and interactions with other institutions. Rarely these effects and interactions are taken into account in micro evaluation studies. More theoretical work on two-tier reforms is warranted. Better descriptions of reforms in applied work would help the development of a theory of labor market reforms.