Europe and the US: Unemployment

Peter Haan

J. W. Goethe Universität

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Outline

- What is unemployment
- Unemployment in the US
- Unemployment in Europe
- How can we explain unemployment: The Role Shocks and Institutions by Blanchard and Wolfers

Why do we care about unemployment?

Why are the unemployed so unhappy? (Winkelmann and Winkelmann, 1997)

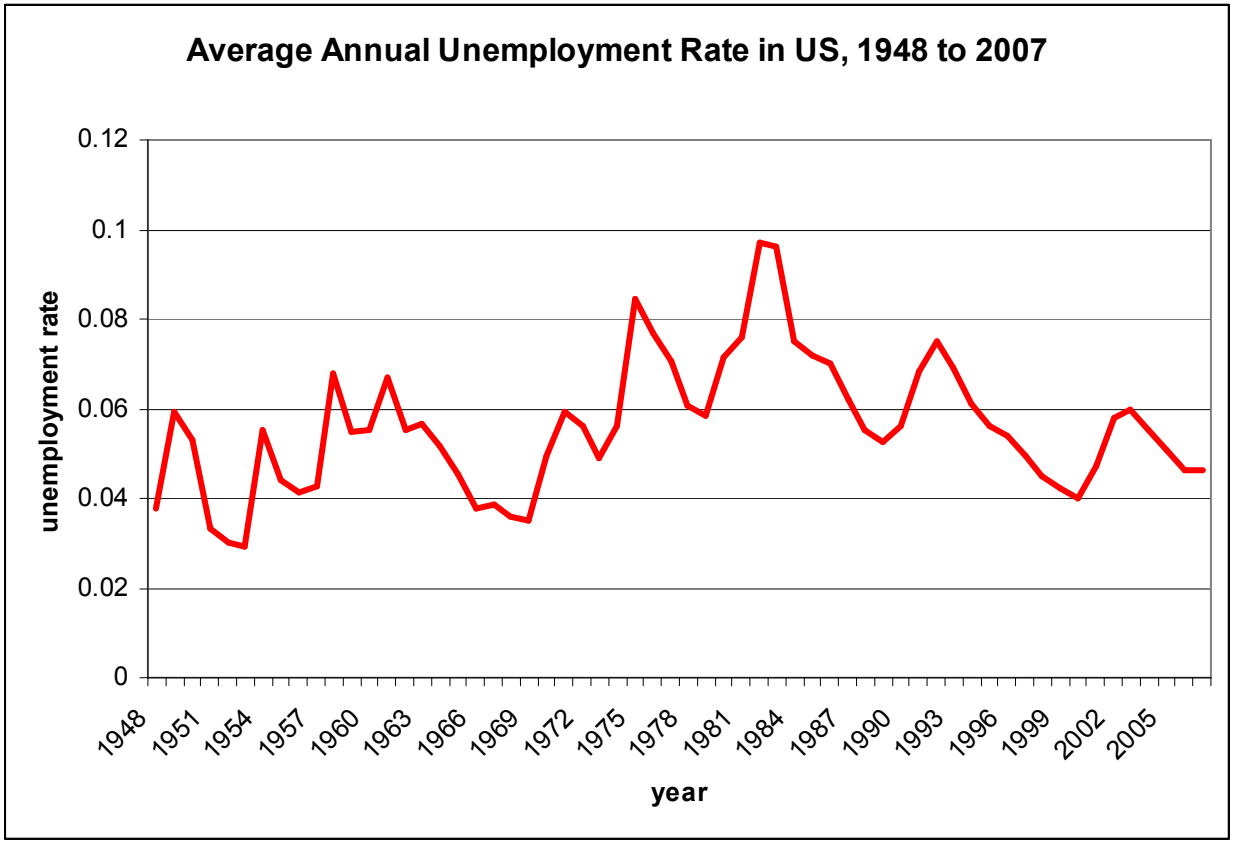
LOGIT REGRESSION RESULTS FOR BINARY SATISFACTION VARIABLE: FIVE MODELS

	Pooled	With fixed effects			
	(1)	(2)	(3)	(4)	(5)
Constant	−0·548				
	(0·315)				
UNEMPLOYED	−0·892	−0·958	−0·900	−1·174	
	(0·145)	(0·204)	(0·362)	(0·236)	
UNEMPLOYED × age ≤ 29					−1·121
					(0·252)
UNEMPLOYED × 29 < age < 49					−0·923
					(0·254)
UNEMPLOYED × age ≥ 50					−0·718
					(0·289)
OUT OF LABOUR FORCE	−0·401	−0·244	−0·494	−0·549	
	(0·053)	(0·123)	(0·216)	(0·168)	
OUT OF LABOUR FORCE × age ≤ 29					−0·392
					(0·201)
OUT OF LABOUR FORCE × 29 < age < 49					−0·682
					(0·265)
OUT OF LABOUR FORCE × age ≥ 50					0·052
					0·174)
DURATION (of unemployment)	−0·016	−0·008	−0·035	−0·017	−0·009
	(0·013)	(0·017)	(0·043)	(0·018)	(0·017)
DURATION-SQUARED * 10^{-1}	−0·000	0·000	0·000	0·002	0·001
	(0·002)	(0·002)	(0·001)	(0·002)	(0·002)
MARRIED	0·285	0·666	0·665	0·746	0·666
	(0·038)	(0·119)	(0·225)	(0·194)	(0·119)
GOOD HEALTH	0·641	0·341	0·279	0·500	0·342
	(0·034)	(0·058)	(0·090)	(0·099)	(0·058)
AGE	−0·098	−0·118	−0·154	−0·049	−0·112
	(0·010)	(0·037)	(0·082)	(0·066)	(0·037)
AGE-SQUARED * 10^{-1}	0·012	−0·001	−0·013	−0·003	−0·002
	(0·001)	(0·004)	(0·091)	(0·007)	(0·004)
log Household income	0·230	0·130	0·165	0·320	0·129
	(0·029)	(0·056)	(0·097)	(0·098)	(0·056)
log-likelihood	−13,344	−4589	−1650	−1572	−4627
Hausman test (degrees of freedom)		213·4(7)			

Definition of unemployment

- unemployed: someone without a job, but looking for employment
- population=inactive+ in labor force
- in labor force = unemployed+employed
- unemployment rate = unemployed / (unemployed+employed)
- participation rate = (unemployed+employed) / (inactive+ in labor force)

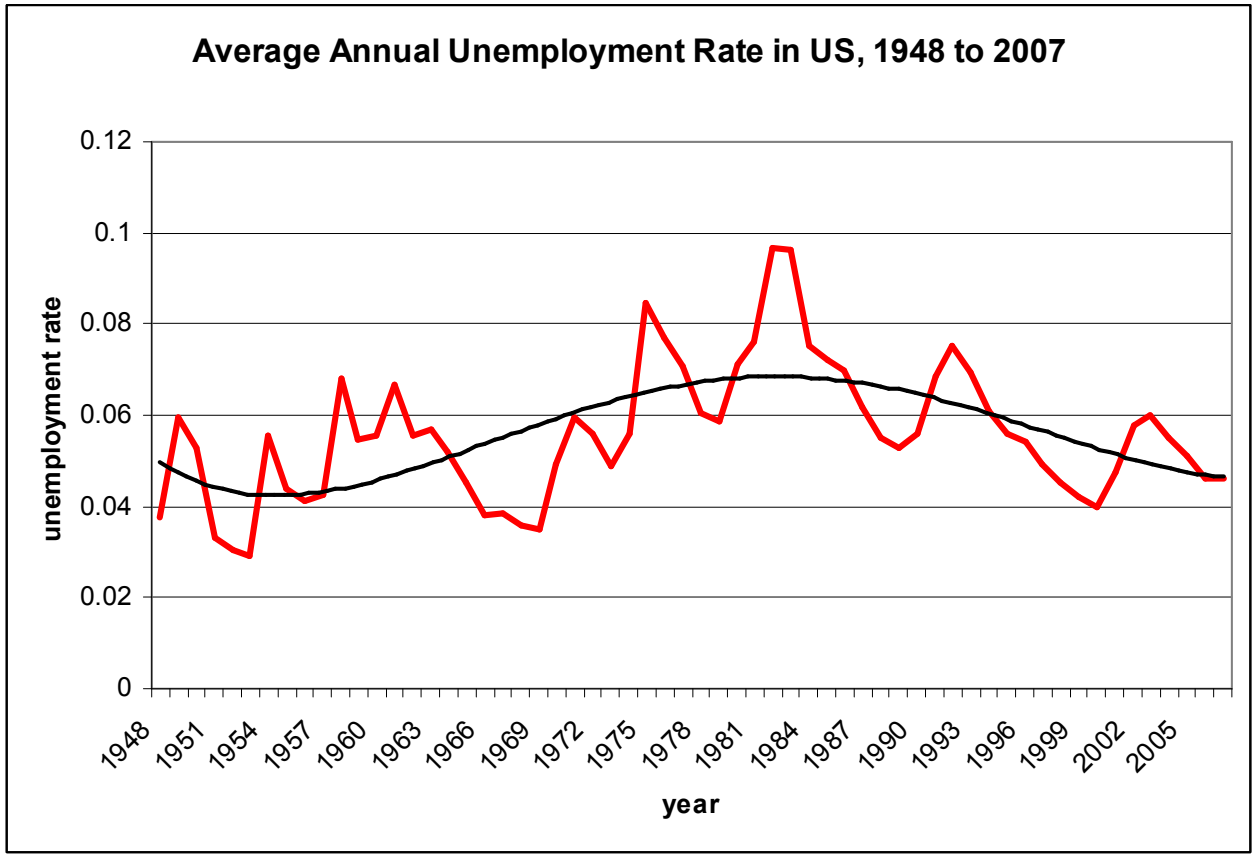
Unemployment over time: US



Short- and long-run unemployment

- Phillips Curve: short-term trade-off between inflation and unemployment
- NAIRU: non-accelerating inflation rate of unemployment
  - the NAIRU measures the long run or equilibrium unemployment or structural unemployment rate
  - the NAIRU abstracts from cyclical fluctuations
- Cyclical unemployment measures short run fluctuations

Short- and long-run unemployment: US



Decomposition of unemployment

- cyclical unemployment
- structural unemployment
- frictional unemployment
  - Search and matching models (Mortensen and Pissaridis)

Long term unemployment

- Duration of unemployment
- Long term unemployment more than one year
- Longer duration of unemployment increases unemployment rate
- Strong heterogeneity between short and long term unemployed
- Human capital depreciation or selection effects?
- Large literature on duration of unemployment (e.g. van den Berg (1990))
- Share of long term unemployed in the US about 11%

Job separation rate and job arrival rate

- Unemployment can be disentangled in probability of finding a job and risk of getting a separation
- Job separation: percentage of employed who loose or quit their job and enter unemployment in a month. In US about 1%.
- Job arrival rate: percentage of unemployed who find a job in a month. In US about 19%.
- The lower the separation rate and the higher the finding rate, the lower the unemployment rate

Unemployment in Europe: Structural unemployment?

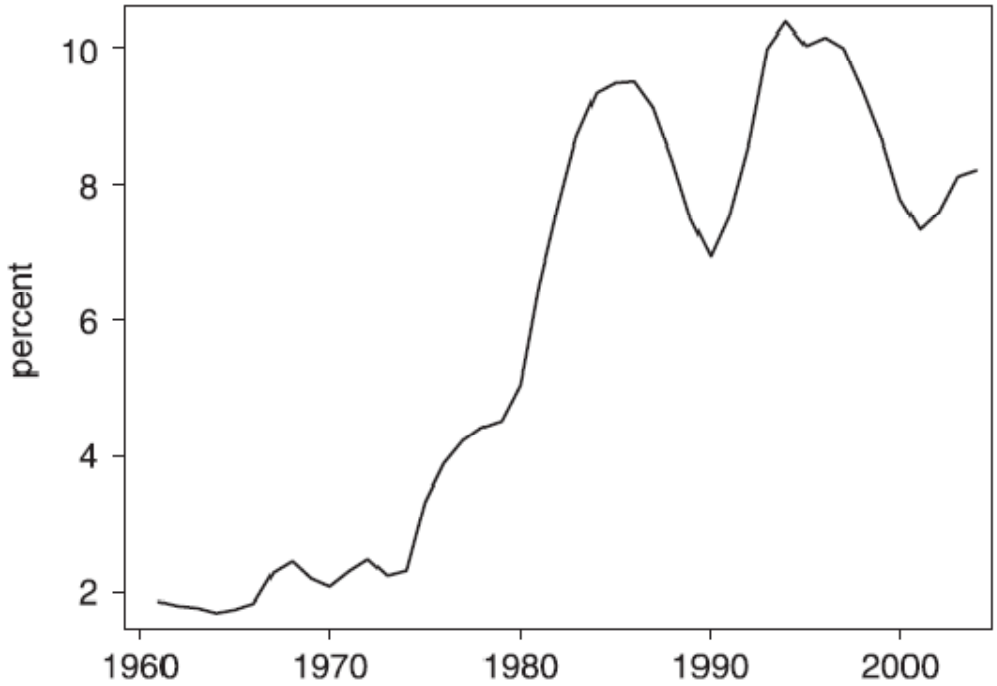


Figure 1. EU15 unemployment rate, since 1960

Source: OECD database.

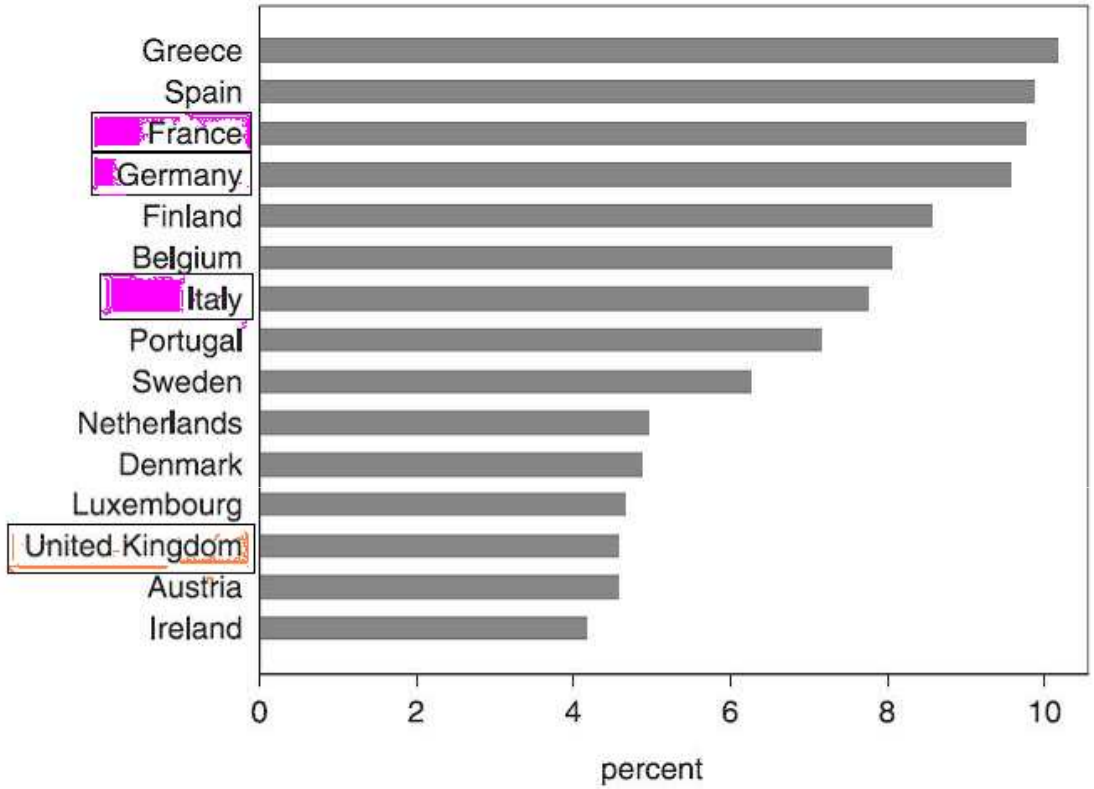
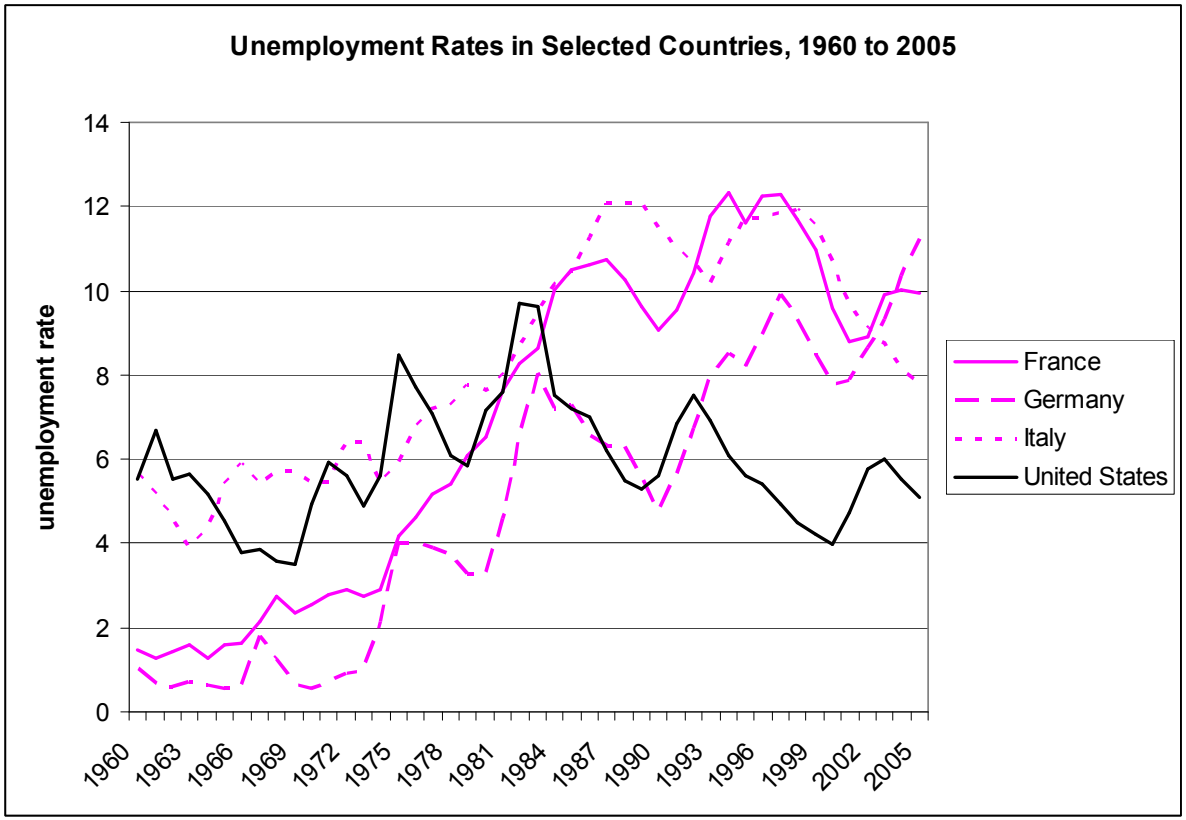


Figure 3. EU15 unemployment rates, 2005

Source: Eurostat.

Long-term unemployment

Country	Percentage of long-term unemployed among unemployed
France	42.5
Germany	54.0
Italy	52.2
UK	22.4
US	11.8


Unemployment Rates in Selected Countries, 1960 to 2005
unemployment rate
14
12
10
8
6
4
2
0
1960
1963
1966
1969
1972
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
France
Germany
Italy
United States

What causes structural unemployment?

- Structural unemployment is everything that affects long-term level of unemployment (NAIRU).

What causes structural unemployment? Firms

- High minimum wage
  - affects only certain groups
  - low skilled and young workers
- Unions
  - wage bargaining
  - insider-outsider theory
- Employment protection
  - firing costs
  - increases long-term unemployment but decreases short-term unemployment

What causes structural unemployment? Worker

- Generous unemployment benefits (replacement ratio, entitlement period)
  - raises reservation wages
  - lowers search intensity
- Income taxation
  - ratio between unemployment benefits and net income in work is important
  - in-work tax credits
- Flexibility
  - education
  - job-migration

What causes structural unemployment?

- Active labor market policy
  - should increase probability of finding a job for unemployed
  - mixed evidence
- Demographic compositions
  - unemployment high among young individuals
  - demographic change

Table 4

Features of OECD Labor Markets I, 1989–1994

	Direct Rigidities		*Treatment of the Unemployed*		
	1 Employment Protection	*2 Labor Standards*	*3 Benefit Replacement Rate (%)*	*4 Benefit Duration (years)*	*5 Active Labor Market Policies*
Austria	16	5	50	2	8.3
Belgium	17	4	60	4	14.6
Denmark	5	2	90	2.5	10.3
Finland	10	5	63	2	16.4
France	14	6	57	3	8.8
Germany (W)	15	6	63	4	25.7
Ireland	12	4	37	4	9.1
Italy	20	7	20	0.5	10.3
Netherlands	9	5	70	2	6.9
Norway	11	5	65	1.5	14.7
Portugal	18	4	65	0.8	18.8
Spain	19	7	70	3.5	4.7
Sweden	13	7	80	1.2	59.3
Switzerland	6	3	70	1	8.2
U.K.	7	0	38	4	6.4
Canada	3	2	59	1	5.9
U.S.	1	0	50	0.5	3.0
Japan	8	1	60	0.5	4.3
Australia	4	3	36	4	3.2
New Zealand	2	3	30	4	6.8

Source: OECD *Jobs Study* (1994), Part II, Table 6.7, column 5. OECD *Employment Outlook* (1994), Table 4.8, column 6 (extended by author). U.S. Department of Health and Social Services, *Social Security Programmes Throughout the World* (1993). OECD Employment Outlook (1995), Table T.

Table 5

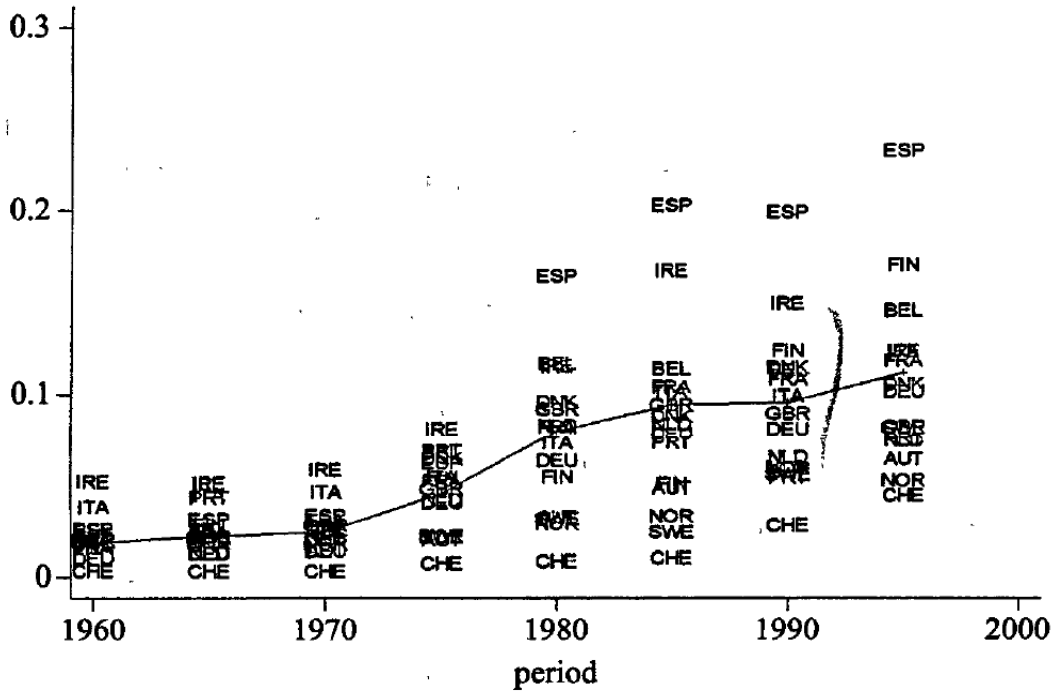
Features of OECD Labor Markets II, 1989–1994

	1 Union Density (%)	2 Union Coverage Index	3 Co-ordination		4 Payroll Tax Rate (%)	5 Total Tax Rate (%)
			Union	Employer		
Austria	46.2	3	3	3	22.6	53.7
Belgium	51.2	3	2	2	21.5	49.8
Denmark	71.4	3	3	3	0.6	46.3
Finland	72.0	3	2	3	25.5	65.9
France	9.8	3	2	2	38.8	63.8
Germany (W)	32.9	3	2	3	23.0	53.0
Ireland	49.7	3	1	1	7.1	34.3
Italy	38.8	3	2	2	40.2	62.9
Netherlands	25.5	3	2	2	27.5	56.5
Norway	56.0	3	3	3	17.5	48.6
Portugal	31.8	3	2	2	14.5	37.6
Spain	11.0	3	2	1	33.2	54.2
Sweden	82.5	3	3	3	37.8	70.7
Switzerland	26.6	2	1	3	14.5	38.6
U.K.	39.1	2	1	1	13.8	40.8
Canada	35.8	2	1	1	13.0	42.7
U.S.	15.6	1	1	1	20.9	43.8
Japan	25.4	2	2	2	16.5	36.3
Australia	40.4	3	2	1	2.5	28.7
New Zealand	44.8	2	1	1	—	34.8

Source: Layard et al. (1991), Annex 1.4, and *OECD Employment Outlook* (1994), p. 175–85. Centre for Economic Performance (LSE), OECD data set.

Blanchard and Wolfers: Shocks and Institutions

- Research question: How can we explain structural unemployment?
  - Adverse economic shocks affect unemployment rate?
  - Adverse labor market institutions affect unemployment rate?



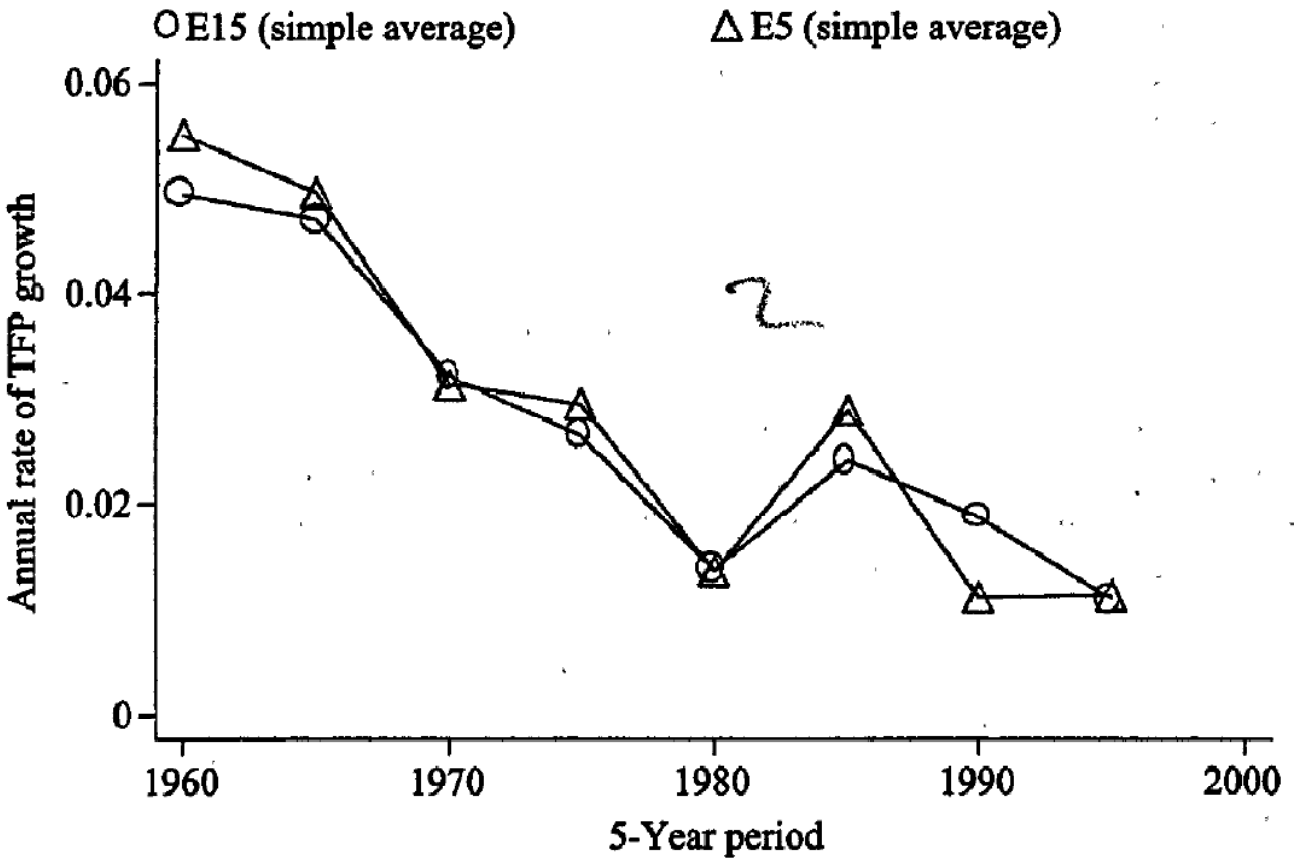
Note: line links average unemployment rate for the E15.
Mnemonics are listed in footnote 1.

Fig. 1. *Unemployment Rate*, E15

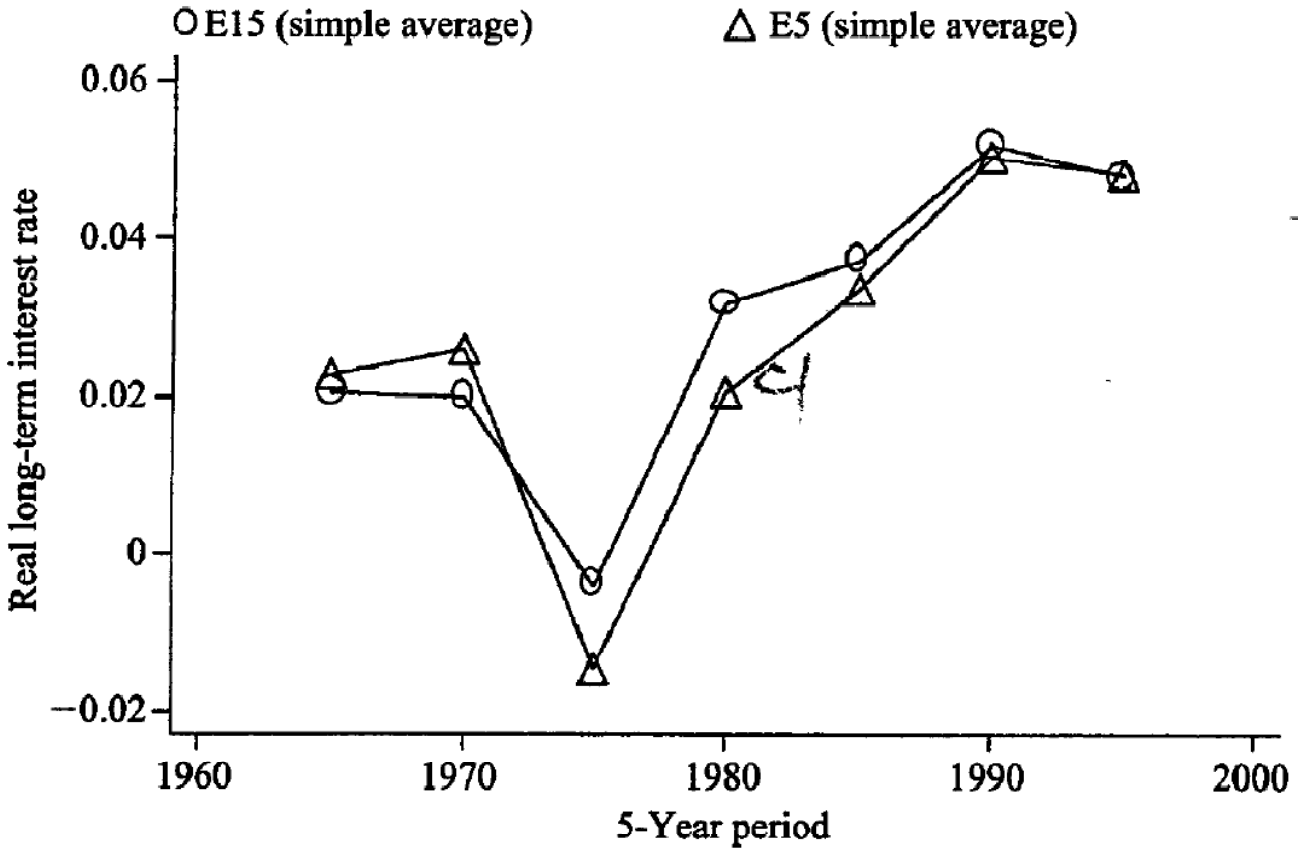
Blanchard and Wolfers: Shocks and Institutions

- Adverse economic shocks affect unemployment rate
  - Why is there so much heterogeneity between European countries?
- Adverse labor market institutions
  - Why was unemployment so low in the 1960 when most of the institutions were already implemented?
- Interaction between adverse labor market institutions and economic shocks
  - Hypothesis: Some institutions might better cope with adverse economic shocks.

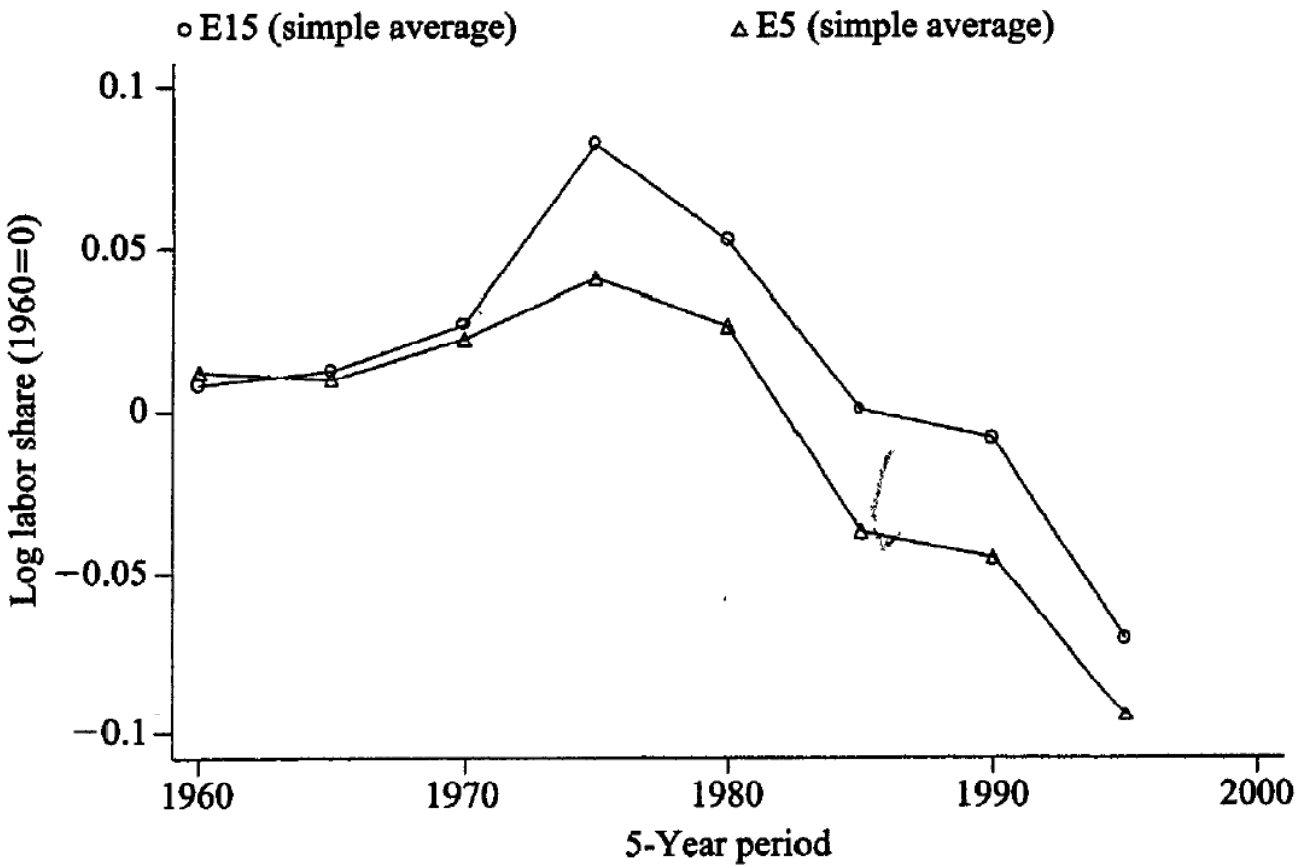
Adverse economic shocks: Total factor productivity (TFP)



Adverse economic shocks: Real interest rate



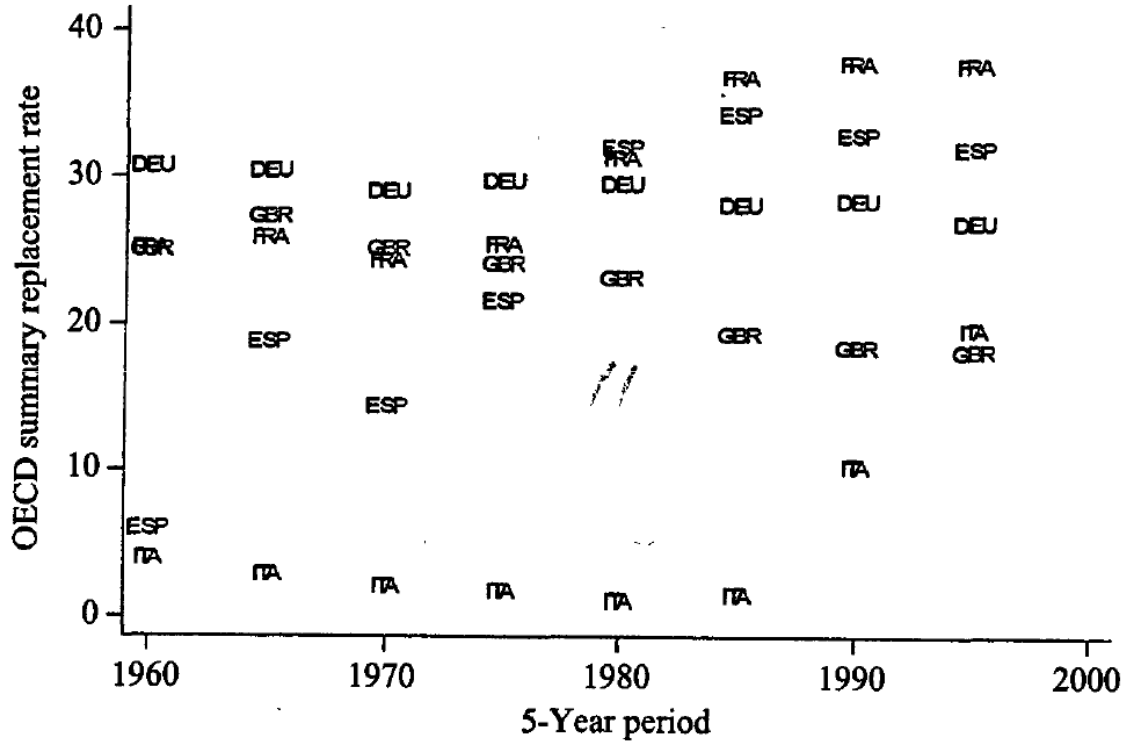
Adverse economic shocks: Shifts in labor demand



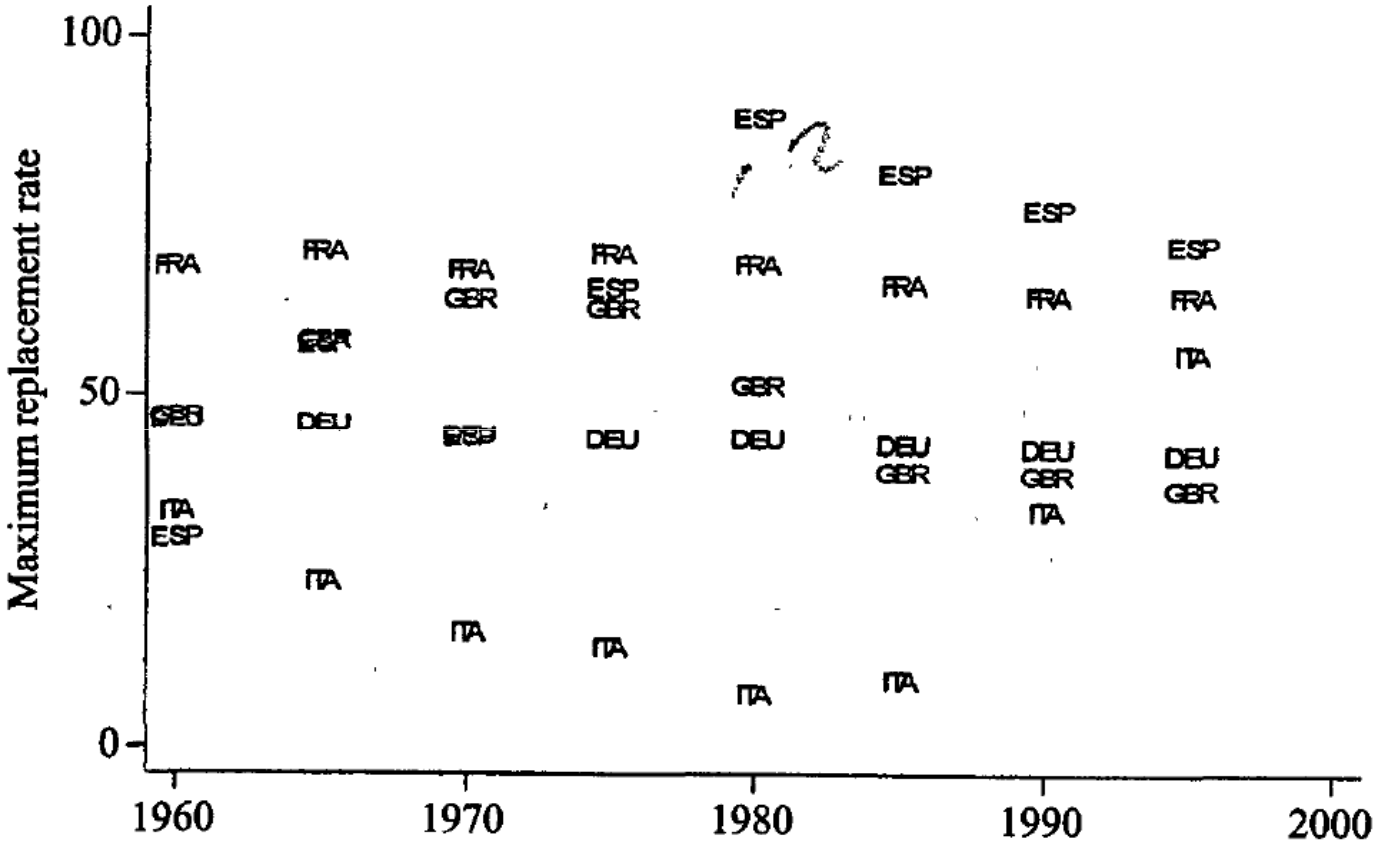
Adverse economic institutions

- There is no clear theory how labor market rigidities in general increase unemployment.
- BW analyze the following institutions
  - replacement ratio of unemployment insurance
  - entitlement period of unemployment insurance
  - active labor market policy
  - employment protection
  - tax wedge
  - measures of influence of unions
- Difficult to get good measures of institutions
  - Cross sectional variation (OECD and Nickell, 1997)
  - Time series variation (OECD and Lazear, 1990)

Average replacement rate over time



Maximum replacement rate over time



Interaction between institutions and shocks

- Institutions can affect impact on shock
- Institutions can affect persistence on shock

Empirical application

- Common unobservable shock and interaction
  - time dummies capture the shock
- Country specific shock and interaction
  - measure of country and time specific shocks, TFP, interest rate, and labor demand
- Data: EU-15, US, Canada NZ, Japan and Australia
- 8 five year intervals 1960:1995

Estimation results I

Table 1

Time Effects Interacted with Fixed Institutions

	(1) Coefficients	(2) Range of independent variable		(3) Implied range of effect of shock (mean = 1)	
Time effects*	7.3%				
Replacement rate	0.017 (5.1)	−46.3	32.6	0.21	1.55
Benefit length	0.206 (4.9)	−2.0	1.6	0.60	1.33
Active labour policy	0.017 (3.0)	−47.2	9.5	0.20	1.16
Employment protection	0.045 (3.1)	−9.5	9.5	0.58	1.42
Tax wedge	0.018 (3.2)	−17.8	22.2	0.68	1.40
Union coverage	0.098 (0.6)	−1.7	0.3	0.83	1.03
Union density	0.009 (2.1)	−30.4	39.6	0.73	1.36
Coordination	0.304 (5.1)	−2.0	2.0	0.40	1.60
Country effects	yes				
$\bar{R}^2$	0.863				

* Time effects: Estimated time effect for 1995+ minus estimated time effect for 1960–64. Column (1): regression results, t-statistics in parentheses. Number of observations: 159.

Estimation results I: Prediction of the model

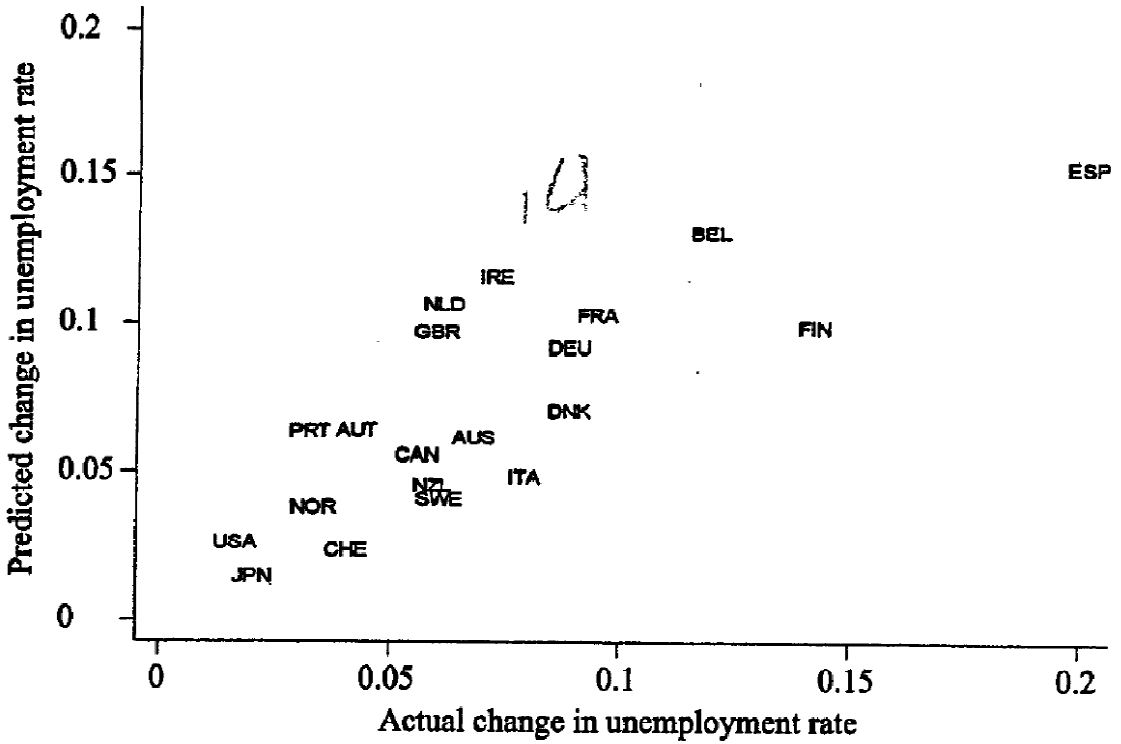


Fig. 9. *Actual and Predicted Change in u, 1995+ over 1965–9*

Estimation results I: Checks I

Time Effects Interacted with Fixed Institutions. Alternative Specifications

	(1) Institutions entered individually	(2) No country effects
Time effects		7.1%
RR	0.004 (1.0)	0.017 (4.1)
Ben	0.268 (6.6)	0.213 (4.1)
ALMP	0.007 (1.4)	0.017 (2.4)
EP	0.043 (4.0)	0.049 (2.8)
Tax	0.012 (2.2)	0.017 (2.4)
Cov	0.532 (4.9)	0.049 (0.2)
Dens	−0.002 (−0.5)	0.009 (1.8)
Coor	0.048 (1.1)	0.301 (4.3)
CE	yes	no
$\bar{R}^2$		0.797

Column (1): each coefficient is estimated using a different regression, allowing interactions between the time effects and the specific institution variable. Column (2): Levels of institutional measures entered, but coefficients not reported. Number of observations: 159.

Estimation results I: Checks II

Table 3

Time Effects Interacted with Institutions. Alternative Measures

	(1) Alternative replacement rates	(2) Time varying replacement rates	(3) Alternative employment protection	(4) Time varying employment protection
Time effects	7.3%	6.2%	7.3%	7.1%
(N) *RR*			0.017 (5.2)	0.017 (4.7)
(N) *Ben*			0.238 (5.6)	0.205 (4.4)
(Alt) *RR*1	0.009 (2.6)	0.007 (2.0)		
(Alt) *RR*25	0.009 (1.4)	0.019 (2.7)		
(N) *ALMP*	0.014 (1.6)	0.005 (0.5)	0.019 (3.2)	0.017 (2.6)
(N) *EP*	0.024 (1.4)	0.032 (1.7)		
(Alt) *EP*			0.294 (4.3)	0.167 (2.2)
(N) *Tax*	0.016 (2.4)	0.015 (2.1)	0.019 (3.5)	0.021 (3.7)
(N) *Cov*	0.413 (2.1)	0.395 (1.9)	0.085 (0.5)	0.287 (1.8)
(N) *Dens*	0.004 (0.8)	0.000 (0.0)	0.010 (2.5)	0.008 (1.7)
(N) *Coor*	0.272 (4.9)	0.325 (4.5)	0.392 (6.5)	0.361 (5.3)
CE	yes	yes	yes	yes
$\overline{R}^2$	0.824	0.831	0.872	0.857

(N) means Nickell measure. Column (1): estimation using time-invariant values of *RR*1 and *RR*25, equal to their average values for 1985–9. Column (2): estimation using the time series for *RR*1 and *RR*25. Column (3): estimation using the value of *EP* for the late 1980s. Column (4): estimation using the time series for *EP*. Number of observations: 159.

Estimation results II: Only Shocks

Table 4

Shocks only

Dependent var	(1) u	(2) u^* sacrifice ratio = 0.2	(3) u^* sacrifice ratio = 4.0
TFP growth	0.47 (3.1)	0.36 (2.6)	0.25 (1.7)
Real rate	0.67 (5.6)	0.63 (6.1)	0.63 (6.1)
LD shift	0.07 (1.1)	0.08 (1.5)	0.09 (1.7)
CE	yes	yes	yes
$\bar{R}^2$	0.566	0.590	0.584

Number of observations: 131.

Estimation results II: Prediction of the model

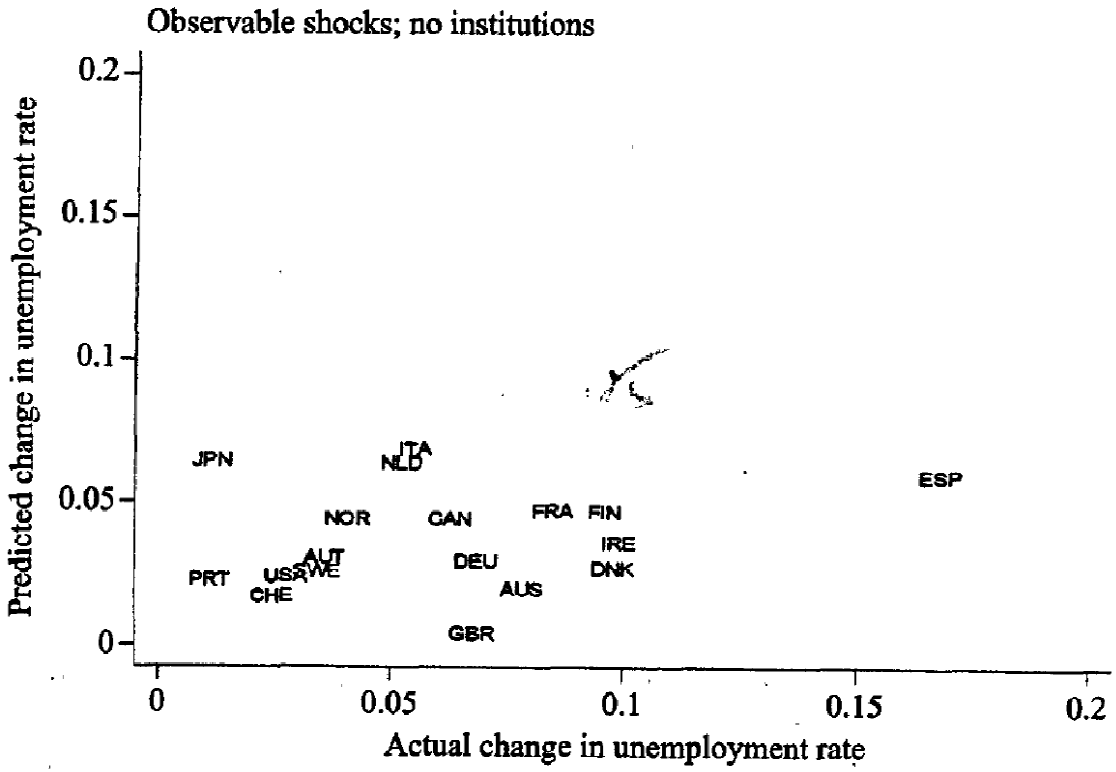


Fig. 10. *Actual and Predicted Change in u, 1965–9 to 1990-4*

Estimation results II

Table 5

Shocks Interacted with Fixed Institutions

	(1) Benchmark equation		(2) Institutions entered individually		(3) u^* sacrifice ratio = 2.0	
TFP growth	0.71	(5.0)			0.58	(4.5)
Real rate	0.47	(5.1)			0.49	(5.7)
LD shift	0.19	(2.7)			0.15	(2.4)
RR	0.025	(3.7)	0.013	(2.4)	0.025	(3.7)
Ben	0.267	(3.0)	0.203	(2.3)	0.313	(3.3)
ALMP	0.028	(1.4)	−0.009	(−0.7)	0.033	(1.6)
EP	0.095	(2.7)	0.047	(2.7)	0.090	(2.6)
Tax	0.033	(2.4)	0.026	(2.6)	0.037	(2.6)
Cov	−0.501	(−1.1)	0.639	(3.0)	−0.466	(−1.0)
Dens	0.033	(3.2)	−0.002	(−0.3)	0.033	(2.8)
Coor	0.414	(2.9)	−0.039	(−0.4)	0.439	(2.9)
CE	yes		yes		yes	
$\bar{R}^2$	0.674				0.702	

Number of observations: 131.

Estimation results II: Prediction of the model

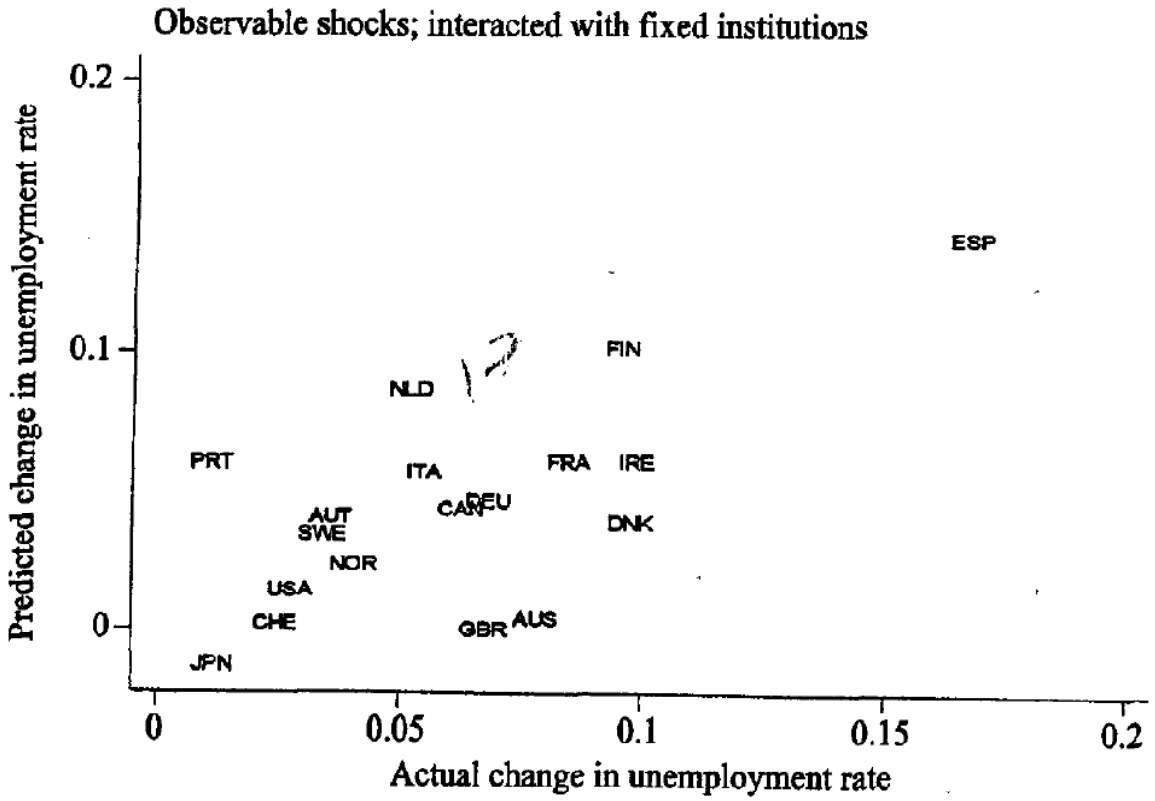


Fig. 11. *Actual and Predicted Change in u, 1965–9 to 1990–4*

Conclusion

- BW show that they can explain variation in unemployment in EU-15 over time by interacting shocks and institutions.
- Only first evidence, since there is no clear variation over time
- Do they measure a causal effect on unemployment?
- What are the policy conclusions?
- Reduced form versus structural model