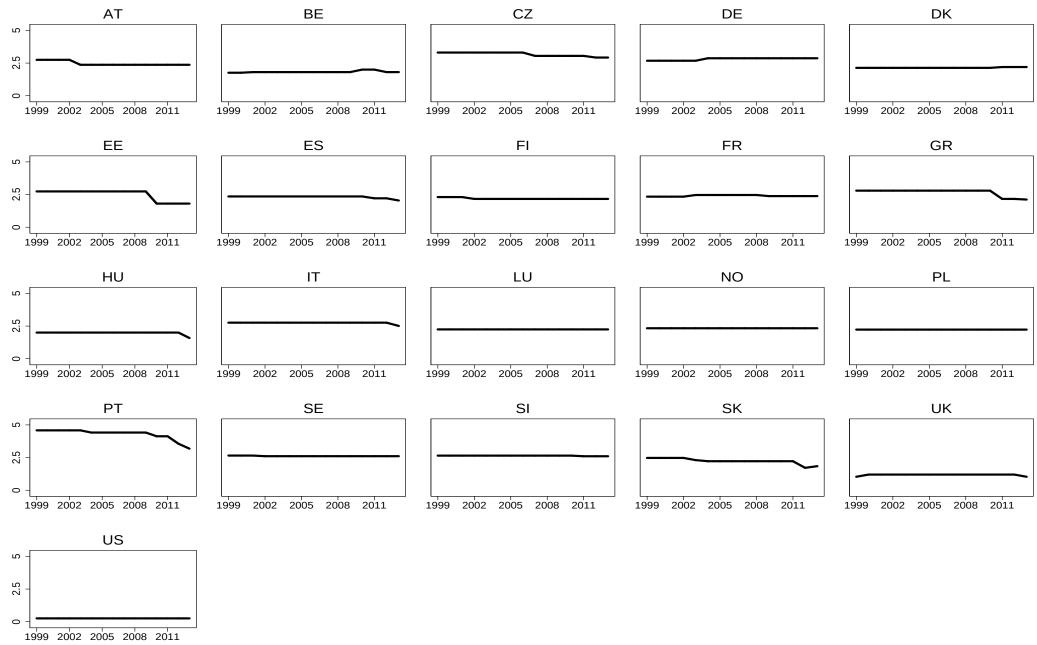
Appendix A Online appendix – Figures and Tables

Fig. A.1: Annual GDP growth by country, 1999 – 2013

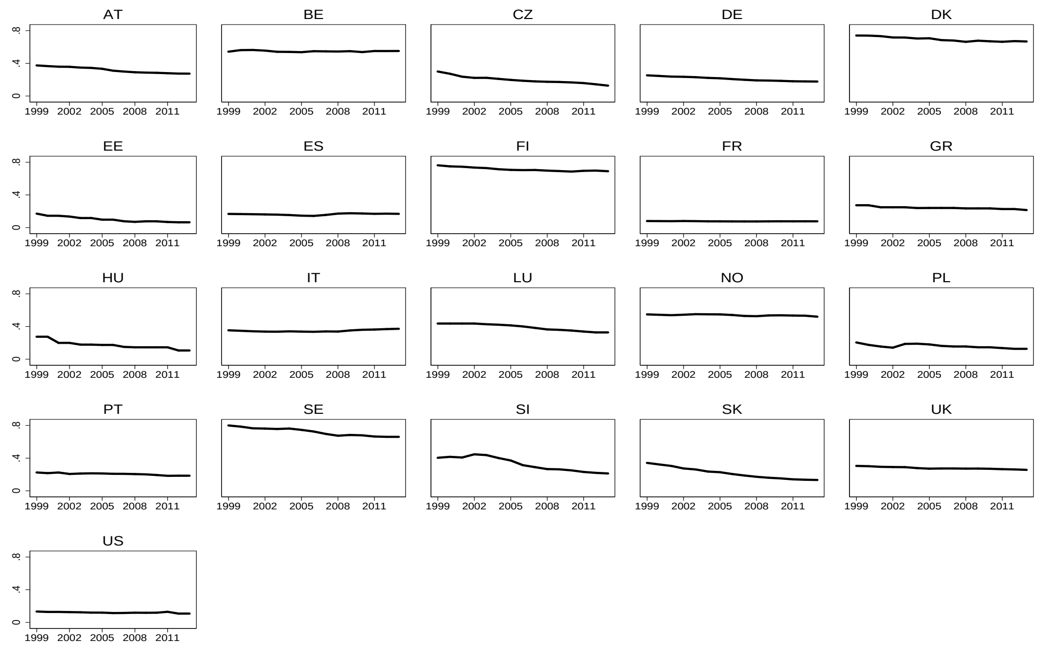
Notes: Country codes: AT: Austria, BE: Belgium, CZ: Czech Republic, DE: Germany, DK: Denmark, EE: Estonia, ES: Spain, FI: Finland, FR: France, GR: Greece, HU: Hungary, IT: Italy, LU: Luxembourg, NO: Norway, PL: Poland, PT: Portugal, SE: Sweden, SI: Slovenia, SK: Slovak Republic, UK: United Kingdom, US: United States of America.
Source: Economic Outlook No. 95, own calculation.

Fig. A.2: Employment protection legislation by country, 1999 – 2013



Notes: See Figure A.1 for the country codes.
Source: OECD Indicators of Employment Protection (2013).

Fig. A.3: Union density rate by country, 1999 – 2013



Notes: See Figure A.1 for the country codes.
Source: ICTWSS.

Table A.1: Descriptive statistics of labour market institutions

Institution Measure	Obs.	Mean	Std. Dev.	Min	Max
Replacement Rate	105	37.26	15.51	19.44	71.67
Benefit Length	105	17.37	12.21	5.00	48.00
Employment Protection	105	2.36	0.77	0.26	4.58
Union Coverage	105	64.63	28.02	0	100.00
Union Density	105	32.76	20.50	6.89	81.58
Coordination	105	2.83	1.31	1.00	5.00
ALMP	105	0.62	0.45	0.07	2.21
Tax Wedge	105	31.94	8.24	9.88	44.32

Source: OECD Economic Outlook 95, ICTWSS, own calculations.

Table A.2: Pairwise correlations across labour market institutions, total variation

	Replacement Rate	Benefit Length	Employment Protection	Union Coverage	Union Density	Coordination	ALMP
Benefit Length	0.78^{***}	1.00					
Employment Protection	0.12	0.02	1.00				
Union Coverage	0.63^{***}	0.47^{***}	0.37^{***}	1.00			
Union Density	0.48^{***}	0.49^{***}	-0.012	0.52^{***}	1.00		
Coordination	0.58^{***}	0.49^{***}	0.20^{**}	0.74^{***}	0.67^{***}	1.00	
ALMP	0.67^{***}	0.57^{***}	0.10	0.56^{***}	0.59^{***}	0.51^{***}	1.00
Tax Wedge	0.27^{***}	0.27^{***}	0.16	0.40^{***}	0.17^{*}	0.43^{***}	0.36^{***}

Source: OECD Economic Outlook 95, ICTWSS, own calculations. * / ** / *** *refers to* $\alpha = 0.1/0.05/0.01$.

Table A.3: Descriptive statistics of the regression sample

Institution Measure	Obs.	Mean	Std. Dev.	Min	Max
Unemployment rate	105	8.63	4.15	2.19	24.41
Employment to Unemployment Rate	102	2.85	1.50	0.30	7.97
Unemployment to Employment Rate	104	31.11	9.46	9.67	55.72
GDP Growth	105	1.991	2.49	−5.98	8.81
Replacement Rate	105	0.00	15.51	−17.82	34.42
Benefit Length	105	0.00	12.21	−12.37	30.63
Employment Protection	105	0.00	0.77	−2.11	2.22
Union Coverage	105	0.00	28.02	−64.63	35.37
Union Density	105	0.00	20.50	−25.87	48.81
Coordination	105	0.00	1.31	−1.83	2.17
ALMP	105	0.00	0.44	−0.55	1.59
Tax Wedge	105	0.00	8.24	−22.06	12.38

Source: EU-LFS, OECD Economic Outlook 95, ICTWSS, own calculations.

Table A.4: Observed shocks model, annual data

Dependent Variable	**U**					**E to U**					**U to E**				
Specification	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*
GDP Growth	−0.251***	−0.278***	−0.283***	−0.253***	−0.284***	−0.176***	−0.189***	−0.191***	−0.177***	−0.187***	0.151	0.195	0.195	0.149	0.176
	(−4.26)	(−4.72)	(−4.80)	(−4.29)	(−4.78)	(−7.39)	(−8.03)	(−8.06)	(−7.41)	(−7.86)	(0.76)	(0.98)	(0.97)	(0.75)	(0.88)
Replacement Rate	−0.019	0.005	0.005	−0.020	−0.023	0.003	0.018*	0.018*	0.002	−0.009	−0.186	−0.093	−0.093	−0.186	−0.468
	(−0.84)	(0.25)	(0.24)	(−0.91)	(−0.71)	(0.22)	(1.67)	(1.66)	(0.15)	(−0.45)	(−0.62)	(−0.59)	(−0.59)	(−0.61)	(−0.78)
Benefit Length					0.019					0.040*					0.376
					(0.57)					(1.93)					(0.79)
Employment Protection	0.050	−0.235	−0.273	0.032	−0.260	0.286	0.062	0.044	0.277	0.019	−1.973	−2.192	−2.192	−1.967	−2.378
	(0.14)	(−0.71)	(−0.84)	(0.09)	(−0.80)	(1.31)	(0.31)	(0.22)	(1.27)	(0.09)	(−0.66)	(−0.88)	(−0.88)	(−0.65)	(−0.81)
Union Coverage	0.004	0.017*	0.011	0.003	0.011	−0.000	0.010*	0.007	−0.001	0.009	0.020	0.048	0.047	0.021	0.058
	(0.43)	(1.78)	(1.06)	(0.33)	(1.05)	(−0.05)	(1.76)	(1.13)	(−0.14)	(1.38)	(0.34)	(0.76)	(0.68)	(0.36)	(0.67)
Union Density		−0.041***	−0.044***		−0.049***		−0.030***	−0.031***		−0.035***		−0.097	−0.098		−0.181
		(−2.76)	(−2.90)		(−2.99)		(−3.63)	(−3.72)		(−3.80)		(−0.88)	(−0.88)		(−0.87)
Coordination			0.233		0.197			0.102		0.083			0.007		0.197
			(1.08)		(0.90)			(0.80)		(0.63)			(0.01)		(0.17)
ALMP					0.898					0.146					8.524
					(1.03)					(0.28)					(0.81)
Tax Wedge				0.029	0.013				0.014	0.005				−0.041	−0.154
				(1.18)	(0.57)				(0.98)	(0.36)				(−0.28)	(−0.71)
Observations	315	315	315	315	315	315	315	315	315	315	315	315	315	315	315
R-squared	0.927	0.930	0.930	0.928	0.931	0.887	0.893	0.893	0.888	0.895	0.925	0.926	0.926	0.925	0.928

Source: EU-LFS, OECD Economic Outlook 95, ICTWSS, own calculations.
Nonlinear least-squares estimation. Country fixed effects are included. T-statistics in parentheses. * / ** / *** *refers to* $\alpha = 0.1/0.05/0.01$.
The estimates quantify the respective contribution of institutions and shocks to the shared interaction coefficient.

Table A.5: Observed shocks model, economic growth periods

Dependent Variable	**U**					**E to U**					**U to E**				
Specification	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*
GDP Growth	−0.250***	−0.268***	−0.267***	−0.248***	−0.281***	−0.179***	−0.187***	−0.187***	−0.179***	−0.186***	0.161	0.196	0.195	0.159	0.248
	(−4.44)	(−4.81)	(−4.85)	(−4.41)	(−5.07)	(−7.86)	(−8.35)	(−8.42)	(−7.84)	(−8.28)	(0.85)	(1.04)	(1.03)	(0.84)	(1.31)
Replacement Rate	−0.028	0.005	−0.005	−0.023	−0.016	0.003	0.023	0.018	0.003	−0.000	−0.257	−0.129	−0.138	−0.251	−0.380
	(−0.91)	(0.17)	(−0.17)	(−0.76)	(−0.41)	(0.20)	(1.49)	(1.16)	(0.19)	(−0.00)	(−0.69)	(−0.64)	(−0.65)	(−0.68)	(−1.10)
Benefit Length					−0.011					0.031					0.288
					(−0.28)					(1.24)					(1.06)
Employment Protection	0.472	0.203	0.019	0.518	0.156	0.411	0.238	0.139	0.410	0.164	−2.556	−2.741	−2.910	−2.500	−1.714
	(0.91)	(0.43)	(0.04)	(0.98)	(0.35)	(1.41)	(0.88)	(0.52)	(1.40)	(0.60)	(−0.71)	(−0.89)	(−0.90)	(−0.69)	(−0.86)
Union Coverage	0.007	0.023*	0.012	0.008	0.009	0.003	0.014*	0.008	0.003	0.008	0.006	0.050	0.039	0.008	0.027
	(0.56)	(1.74)	(0.85)	(0.63)	(0.70)	(0.43)	(1.84)	(0.96)	(0.42)	(1.02)	(0.09)	(0.67)	(0.55)	(0.12)	(0.50)
Union Density		−0.064***	−0.075***		−0.084***		−0.042***	−0.047***		−0.050***		−0.174	−0.183		−0.207
		(−2.83)	(−3.11)		(−3.48)		(−3.50)	(−3.85)		(−3.89)		(−0.95)	(−0.95)		(−1.24)
Coordination			0.713**		0.779**			0.381**		0.402**			0.643		0.713
			(2.30)		(2.57)			(2.33)		(2.40)			(0.45)		(0.62)
ALMP					1.846*					0.161					8.763
					(1.83)					(0.26)					(1.21)
Tax Wedge				−0.033	−0.072*				0.000	−0.019				−0.068	−0.214
				(−0.87)	(−1.93)				(0.01)	(−0.88)				(−0.32)	(−1.02)
Observations	315	315	315	315	315	315	315	315	315	315	315	315	315	315	315
R-squared	0.928	0.930	0.932	0.928	0.933	0.888	0.893	0.895	0.888	0.896	0.926	0.927	0.927	0.926	0.929

Source: EU-LFS, OECD Economic Outlook 95, ICTWSS, own calculations.
Nonlinear least-squares estimation. Country fixed effects are included. T-statistics in parentheses. * / ** / *** *refers to* $\alpha = 0.1/0.05/0.01$.
The estimates quantify the respective contribution of institutions and shocks to the shared interaction coefficient.

Table A.6: Observed shocks model, economic recession periods

Dependent Variable			**U**					**E to U**					**U to E**		
Specification	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*
Annual GDP Growth	-0.271^{***}	-0.288^{***}	-0.272^{***}	-0.269^{***}	-0.248^{***}	-0.175^{***}	-0.183^{***}	-0.175^{***}	-0.174^{***}	-0.159^{***}	0.240	0.258	0.237	0.240	0.204
	(−4.75)	(−5.02)	(−4.73)	(−4.81)	(−4.30)	(−7.57)	(−7.90)	(−7.59)	(−7.58)	(−6.78)	(1.25)	(1.32)	(1.20)	(1.24)	(1.00)
Replacement Rate	−0.019	0.016	0.018	−0.013	−0.094	0.003	0.029	0.031	0.005	−0.098	−0.106	−0.061	−0.065	−0.105	−0.295
	(−0.48)	(0.42)	(0.44)	(−0.35)	(−0.93)	(0.14)	(1.22)	(1.26)	(0.22)	(−1.51)	(−0.57)	(−0.36)	(−0.35)	(−0.56)	(−0.51)
Benefit Length					0.187^{*}					0.132^{**}					0.487
					(1.86)					(2.21)					(0.75)
Employment Protection	−0.944	-1.460^{*}	-1.438^{*}	−0.607	-1.783^{*}	0.244	−0.209	−0.135	0.358	−0.387	−1.271	−1.825	−1.824	−1.216	−3.431
	(−1.27)	(−1.92)	(−1.80)	(−0.83)	(−1.92)	(0.52)	(−0.44)	(−0.27)	(0.75)	(−0.70)	(−0.44)	(−0.62)	(−0.57)	(−0.42)	(−0.72)
Union Coverage	0.000	0.020	0.065^{**}	−0.005	0.087^{**}	−0.007	0.009	0.042^{**}	−0.009	0.058^{***}	0.033	0.053	0.120	0.032	0.176
	(0.01)	(1.07)	(2.13)	(−0.29)	(2.38)	(−0.63)	(0.75)	(2.35)	(−0.79)	(2.77)	(0.48)	(0.68)	(0.82)	(0.46)	(0.79)
Union Density		-0.054^{*}	-0.051^{*}		-0.096^{**}		-0.042^{**}	-0.039^{**}		-0.078^{***}		−0.060	−0.056		−0.128
		(−1.93)	(−1.73)		(−2.29)		(−2.37)	(−2.14)		(−3.06)		(−0.56)	(−0.48)		(−0.64)
Coordination			-1.211^{**}		-1.392^{**}			-0.906^{**}		-1.051^{***}			−1.735		−1.835
			(−2.02)		(−2.07)			(−2.56)		(−2.64)			(−0.66)		(−0.58)
ALMP					0.567					2.690					−3.660
					(0.19)					(1.32)					(−0.29)
Tax Wedge				0.152^{***}	0.156^{***}				0.050^{*}	0.043				0.025	0.003
				(2.79)	(2.66)				(1.75)	(1.37)				(0.15)	(0.01)
Observations	315	315	315	315	315	315	315	315	315	315	315	315	315	315	315
R-squared	0.928	0.929	0.930	0.930	0.937	0.887	0.889	0.892	0.888	0.897	0.925	0.925	0.925	0.925	0.925

Source: EU-LFS, OECD Economic Outlook 95, ICTWSS, own calculations.
Nonlinear least-squares estimation. Country fixed effects are included. T-statistics in parentheses. * / ** / *** *refers to* $\alpha = 0.1/0.05/0.01$.
The estimates quantify the respective contribution of institutions and shocks to the shared interaction coefficient.

Table A.7: Observed shocks model, lagged institutions

Dependent Variable			**U**					**E to U**					**U to E**		
Specification	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*
GDP Growth	-0.419^{***}	-0.448^{***}	-0.440^{***}	-0.421^{***}	-0.460^{***}	-0.216^{***}	-0.226^{***}	-0.226^{***}	-0.217^{***}	-0.227^{***}	0.458	0.514^{*}	0.509^{*}	0.453	0.486
	(−3.19)	(−3.59)	(−3.54)	(−3.20)	(−3.66)	(−5.19)	(−6.28)	(−6.23)	(−5.17)	(−6.26)	(1.50)	(1.73)	(1.70)	(1.48)	(1.60)
Replacement Rate	−0.014	0.007	0.005	−0.014	−0.048	−0.005	0.013	0.013	−0.005	−0.030	−0.042	−0.004	−0.004	−0.043	−0.060
	(−0.54)	(0.30)	(0.24)	(−0.53)	(−1.10)	(−0.32)	(1.05)	(1.03)	(−0.31)	(−1.24)	(−0.61)	(−0.08)	(−0.09)	(−0.62)	(−0.57)
Benefit Length					0.047					0.056^{*}					0.068
					(0.97)					(1.90)					(0.58)
Employment Protection	0.288	−0.032	−0.173	0.249	−0.184	0.294	0.005	−0.008	0.288	−0.025	0.254	−0.282	−0.366	0.352	−0.446
	(0.61)	(−0.08)	(−0.41)	(0.53)	(−0.46)	(1.02)	(0.02)	(−0.03)	(0.99)	(−0.11)	(0.25)	(−0.35)	(−0.43)	(0.34)	(−0.49)
Union Coverage	0.009	0.023^{*}	0.019	0.009	0.018	−0.001	0.013^{**}	0.013^{*}	−0.001	0.013^{*}	0.026	0.048	0.046	0.027	0.044
	(0.82)	(1.89)	(1.53)	(0.80)	(1.51)	(−0.12)	(2.05)	(1.89)	(−0.13)	(1.94)	(0.89)	(1.38)	(1.31)	(0.91)	(1.20)
Union Density		-0.051^{**}	-0.058^{**}		-0.070^{***}		-0.048^{***}	-0.049^{***}		-0.053^{***}		−0.087	−0.091		−0.111
		(−2.46)	(−2.52)		(−2.75)		(−4.13)	(−4.00)		(−3.99)		(−1.49)	(−1.46)		(−1.43)
Coordination			0.287		0.326			0.026		0.048			0.165		0.541
			(1.18)		(1.24)			(0.20)		(0.34)			(0.34)		(0.82)
ALMP					1.497					0.627					0.766
					(1.59)					(1.19)					(0.37)
Tax Wedge				0.028	−0.024				0.005	−0.018				−0.070	−0.119
				(0.86)	(−0.68)				(0.24)	(−0.88)				(−0.85)	(−1.11)
Observations	105	105	105	105	105	102	102	102	102	102	104	104	104	104	104
R-squared	0.947	0.953	0.954	0.948	0.956	0.956	0.967	0.967	0.956	0.970	0.976	0.977	0.977	0.976	0.978

Source: EU-LFS, OECD Economic Outlook 95, ICTWSS, own calculations.
Nonlinear least-squares estimation. Country fixed effects are included. T-statistics in parentheses. * / ** / *** *refers to* $\alpha = 0.1/0.05/0.01$.
The estimates quantify the respective contribution of institutions and shocks to the shared interaction coefficient.

Table A.8: Observed shocks model, fixed institutions

Dependent Variable	**U**					**E to U**					**U to E**				
Specification	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*
GDP Growth	-0.416^{***}	-0.435^{***}	-0.442^{***}	-0.418^{***}	-0.458^{***}	-0.218^{***}	-0.227^{***}	-0.227^{***}	-0.218^{***}	-0.227^{***}	0.498	0.559^{*}	0.573^{*}	0.477	0.557^{*}
	(−3.13)	(−3.30)	(−3.36)	(−3.12)	(−3.44)	(−5.11)	(−5.65)	(−5.61)	(−5.08)	(−5.61)	(1.58)	(1.81)	(1.85)	(1.50)	(1.77)
Replacement Rate	0.026	0.037	0.034	0.024	−0.023	0.004	0.016	0.016	0.003	−0.036	−0.006	0.024	0.020	0.012	−0.017
	(1.04)	(1.52)	(1.42)	(0.89)	(−0.49)	(0.23)	(1.10)	(1.08)	(0.18)	(−1.21)	(−0.11)	(0.53)	(0.44)	(0.22)	(−0.19)
Benefit Length					0.038					0.059^{*}					0.043
					(0.70)					(1.68)					(0.40)
Employment Protection	0.375	0.237	0.097	0.365	0.100	0.315	0.172	0.165	0.312	0.150	0.454	0.116	−0.098	0.550	−0.123
	(0.79)	(0.54)	(0.22)	(0.77)	(0.24)	(1.12)	(0.70)	(0.64)	(1.10)	(0.60)	(0.47)	(0.15)	(−0.13)	(0.53)	(−0.16)
Union Coverage	−0.016	−0.010	−0.007	−0.014	−0.010	−0.005	0.001	0.002	−0.004	0.004	0.005	0.016	0.020	−0.005	0.007
	(−1.35)	(−0.93)	(−0.68)	(−1.16)	(−0.83)	(−0.72)	(0.24)	(0.25)	(−0.60)	(0.59)	(0.23)	(0.81)	(0.97)	(−0.21)	(0.33)
Union Density		−0.031	-0.050^{*}		-0.069^{**}		-0.034^{***}	-0.035^{**}		-0.041^{**}		−0.074	−0.102		−0.140
		(−1.60)	(−1.89)		(−2.25)		(−2.97)	(−2.39)		(−2.50)		(−1.48)	(−1.54)		(−1.58)
Coordination			0.322		0.430			0.016		0.017			0.499		0.955
			(1.20)		(1.42)			(0.10)		(0.10)			(0.95)		(1.27)
ALMP					1.902					0.731					1.754
					(1.59)					(1.06)					(0.76)
Tax Wedge				0.008	−0.051				0.003	−0.010				−0.074	−0.143
				(0.24)	(−1.12)				(0.13)	(−0.38)				(−0.82)	(−1.24)
Observations	105	105	105	105	105	102	102	102	102	102	104	104	104	104	104
R-squared	0.949	0.950	0.951	0.949	0.954	0.956	0.962	0.962	0.956	0.964	0.975	0.977	0.977	0.975	0.978

Source: EU-LFS, OECD Economic Outlook 95, ICTWSS, own calculations.
Nonlinear least-squares estimation. Country fixed effects are included. T-statistics in parentheses. * / ** / *** *refers to* $\alpha = 0.1/0.05/0.01$.
The estimates quantify the respective contribution of institutions and shocks to the shared interaction coefficient.

Table A.9: Observed shocks model, without Portugal

Dependent Variable	**U**					**E to U**					**U to E**				
Specification	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*
GDP Growth	-0.410^{***}	-0.423^{***}	-0.435^{***}	-0.415^{***}	-0.473^{***}	-0.207^{***}	-0.212^{***}	-0.214^{***}	-0.208^{***}	-0.226^{***}	0.386	0.416	0.441	0.382	0.501^{*}
	(−3.25)	(−3.43)	(−3.58)	(−3.29)	(−3.85)	(−5.14)	(−5.70)	(−5.86)	(−5.13)	(−6.18)	(1.35)	(1.48)	(1.60)	(1.32)	(1.80)
Replacement Rate	−0.032	−0.010	−0.021	−0.032	−0.049	−0.016	0.004	−0.002	−0.016	−0.043	−0.110	−0.054	−0.075	−0.111	−0.125
	(−1.04)	(−0.36)	(−0.73)	(−1.04)	(−1.16)	(−0.91)	(0.28)	(−0.12)	(−0.90)	(−1.62)	(−0.91)	(−0.66)	(−0.86)	(−0.90)	(−1.05)
Benefit Length					−0.001					0.031					−0.001
					(−0.02)					(1.19)					(−0.02)
Employment Protection	-1.029^{*}	-1.151^{**}	-1.479^{**}	-1.067^{*}	-1.343^{**}	−0.439	-0.584^{**}	-0.779^{**}	−0.451	-0.756^{**}	−2.401	−2.568	−3.214	−2.382	-2.976^{*}
	(−1.87)	(−2.14)	(−2.53)	(−1.95)	(−2.57)	(−1.38)	(−2.00)	(−2.51)	(−1.41)	(−2.60)	(−1.22)	(−1.37)	(−1.53)	(−1.20)	(−1.70)
Union Coverage	0.006	0.017	0.007	0.004	0.002	−0.004	0.007	0.002	−0.004	−0.001	0.033	0.055	0.030	0.035	0.019
	(0.55)	(1.38)	(0.55)	(0.37)	(0.17)	(−0.59)	(1.08)	(0.25)	(−0.65)	(−0.09)	(0.93)	(1.23)	(0.93)	(0.94)	(0.71)
Union Density		-0.040^{*}	-0.048^{**}		-0.056^{**}		-0.041^{***}	-0.045^{***}		-0.051^{***}		−0.089	−0.102		−0.123
		(−1.91)	(−2.19)		(−2.55)		(−3.19)	(−3.44)		(−3.89)		(−1.25)	(−1.39)		(−1.65)
Coordination			0.558^{*}		0.632^{*}			0.312^{*}		0.426^{**}			1.224		1.732
			(1.71)		(1.89)			(1.71)		(2.20)			(1.24)		(1.56)
ALMP					1.787^{*}					1.249^{**}					3.010
					(1.81)					(2.12)					(1.24)
Tax Wedge				0.034	−0.012				0.009	−0.027				−0.030	−0.119
				(1.16)	(−0.43)				(0.49)	(−1.52)				(−0.41)	(−1.35)
Observations	100	100	100	100	100	97	97	97	97	97	99	99	99	99	99
R-squared	0.952	0.955	0.957	0.953	0.959	0.958	0.965	0.967	0.959	0.969	0.978	0.979	0.980	0.978	0.981

Source: EU-LFS, OECD Economic Outlook 95, ICTWSS, own calculations.
Nonlinear least-squares estimation. Country fixed effects are included. T-statistics in parentheses. * / ** / *** *refers to* $\alpha = 0.1/0.05/0.01$.
The estimates quantify the respective contribution of institutions and shocks to the shared interaction coefficient.

Table A.10: Observed shocks model, without Germany

Dependent Variable			**U**					**E to U**					**U to E**		
Specification	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*
GDP Growth	-0.472^{***}	-0.485^{***}	-0.484^{***}	-0.474^{***}	-0.514^{***}	-0.231^{***}	-0.234^{***}	-0.233^{***}	-0.231^{***}	-0.244^{***}	0.528^{*}	0.556^{*}	0.553^{*}	0.525^{*}	0.591^{*}
	(−3.58)	(−3.82)	(−3.79)	(−3.59)	(−4.01)	(−5.55)	(−6.24)	(−6.20)	(−5.52)	(−6.44)	(1.70)	(1.85)	(1.83)	(1.69)	(1.94)
Replacement Rate	0.002	0.024	0.023	0.003	0.015	0.005	0.025^{*}	0.024^{*}	0.005	−0.002	−0.020	0.023	0.022	−0.022	0.013
	(0.09)	(1.13)	(1.08)	(0.14)	(0.40)	(0.33)	(1.90)	(1.85)	(0.34)	(−0.08)	(−0.37)	(0.53)	(0.49)	(−0.40)	(0.16)
Benefit Length					−0.027					0.013					−0.045
					(−0.62)					(0.47)					(−0.49)
Employment Protection	−0.022	−0.283	−0.332	−0.033	−0.252	0.130	−0.116	−0.143	0.128	−0.108	0.003	−0.496	−0.578	0.020	−0.539
	(−0.06)	(−0.76)	(−0.87)	(−0.08)	(−0.70)	(0.51)	(−0.52)	(−0.62)	(0.50)	(−0.49)	(0.00)	(−0.65)	(−0.72)	(0.02)	(−0.72)
Union Coverage	0.000	0.013	0.009	−0.001	0.004	−0.007	0.005	0.004	−0.007	0.001	0.014	0.037	0.032	0.017	0.023
	(0.02)	(1.17)	(0.80)	(−0.12)	(0.36)	(−1.03)	(0.85)	(0.51)	(−1.05)	(0.14)	(0.65)	(1.30)	(1.11)	(0.73)	(0.88)
Union Density		-0.045^{**}	-0.048^{**}		-0.058^{**}		-0.042^{***}	-0.044^{***}		-0.051^{***}		−0.085	−0.091		-0.113^{*}
		(−2.23)	(−2.26)		(−2.56)		(−3.52)	(−3.49)		(−3.80)		(−1.51)	(−1.51)		(−1.68)
Coordination			0.178		0.268			0.098		0.200			0.293		0.769
			(0.65)		(0.91)			(0.61)		(1.12)			(0.51)		(1.08)
ALMP					1.616					1.113^{*}					2.187
					(1.63)					(1.88)					(1.02)
Tax Wedge				0.023	−0.003				0.004	−0.019				−0.038	−0.082
				(0.85)	(−0.09)				(0.22)	(−1.12)				(−0.63)	(−1.15)
Observations	100	100	100	100	100	97	97	97	97	97	99	99	99	99	99
R-squared	0.946	0.951	0.951	0.947	0.953	0.956	0.964	0.964	0.956	0.966	0.975	0.977	0.977	0.975	0.978

Source: EU-LFS, OECD Economic Outlook 95, ICTWSS, own calculations.
Nonlinear least-squares estimation. Country fixed effects are included. T-statistics in parentheses. * / ** / *** *refers to* $\alpha = 0.1/0.05/0.01$.
The estimates quantify the respective contribution of institutions and shocks to the shared interaction coefficient.

Table A.11: Observed shocks model, with temporary employment

Dependent Variable	**U**					**E to U**					**U to E**				
Specification	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*	*I*	*II*	*III*	*IV*	*V*
GDP Growth	−0.450***	−0.465***	−0.466***	−0.451***	−0.477***	−0.220***	−0.226***	−0.226***	−0.219***	−0.227***	0.481*	0.516*	0.516*	0.471*	0.513*
	(−3.73)	(−3.91)	(−3.89)	(−3.71)	(−3.84)	(−6.03)	(−6.62)	(−6.58)	(−5.99)	(−6.40)	(1.70)	(1.84)	(1.83)	(1.67)	(1.79)
Replacement Rate	−0.019	−0.001	−0.001	−0.018	−0.003	−0.012	0.005	0.005	−0.013	−0.013	−0.063	−0.025	−0.025	−0.070	−0.019
	(−0.76)	(−0.06)	(−0.06)	(−0.73)	(−0.08)	(−0.82)	(0.37)	(0.37)	(−0.86)	(−0.58)	(−0.87)	(−0.45)	(−0.45)	(−0.91)	(−0.22)
Benefit Length					−0.008					0.024					−0.020
					(−0.19)					(0.93)					(−0.22)
Employment Protection	−0.103	−0.285	−0.292	−0.106	−0.271	0.080	−0.113	−0.111	0.084	−0.115	−0.150	−0.512	−0.520	−0.122	−0.612
	(−0.28)	(−0.79)	(−0.79)	(−0.28)	(−0.73)	(0.35)	(−0.53)	(−0.51)	(0.36)	(−0.52)	(−0.18)	(−0.66)	(−0.65)	(−0.15)	(−0.75)
Union Coverage	−0.017	−0.005	−0.006	−0.017	−0.006	−0.020***	−0.008	−0.007	−0.019***	−0.007	−0.019	0.004	0.004	−0.017	0.001
	(−1.46)	(−0.45)	(−0.45)	(−1.46)	(−0.48)	(−2.72)	(−1.12)	(−1.04)	(−2.68)	(−0.99)	(−0.75)	(0.17)	(0.14)	(−0.67)	(0.02)
Union Density		−0.032*	−0.032*		−0.035*		−0.033***	−0.033***		−0.036***		−0.064	−0.065		−0.075
		(−1.78)	(−1.72)		(−1.71)		(−3.15)	(−3.00)		(−2.92)		(−1.35)	(−1.32)		(−1.36)
Coordination			0.024		0.050			−0.009		0.050			0.030		0.423
			(0.09)		(0.17)			(−0.06)		(0.29)			(0.05)		(0.64)
ALMP					0.442					0.235					−0.088
					(0.44)					(0.38)					(−0.04)
Tax Wedge				0.006	0.000				−0.010	−0.018				−0.081	−0.089
				(0.23)	(0.01)				(−0.65)	(−1.07)				(−1.08)	(−1.14)
Temporary employment	0.160***	0.138**	0.137**	0.158**	0.127**	0.121***	0.099***	0.100***	0.124***	0.098***	0.327	0.269	0.268	0.359	0.288
	(2.65)	(2.52)	(2.47)	(2.60)	(2.21)	(3.65)	(3.46)	(3.41)	(3.65)	(3.08)	(1.52)	(1.56)	(1.54)	(1.52)	(1.48)
Observations	105	105	105	105	105	102	102	102	102	102	104	104	104		
R-squared	0.955	0.957	0.957	0.955	0.957	0.966	0.970	0.970	0.966	0.971	0.979	0.980	0.980	0.979	0.980

Source: EU-LFS, OECD Economic Outlook 95, ICTWSS, own calculations.
Nonlinear least-squares estimation. Country fixed effects are included. T-statistics in parentheses. * / ** / *** *refers to* $\alpha = 0.1/0.05/0.01$.
The estimates quantify the respective contribution of institutions and shocks to the shared interaction coefficient.

Table A.12: Observed shocks model, total E outflows

Dependent Variable	**E to U and N**				
Specification	*I*	*II*	*III*	*IV*	*V*
GDP Growth	-0.246^{***}	-0.253^{***}	-0.253^{***}	-0.246^{***}	-0.255^{***}
	(-4.64)	(-5.03)	(-5.02)	(-4.61)	(-4.97)
Replacement Rate	-0.001	0.017	0.016	-0.001	-0.017
	(-0.03)	(1.05)	(1.00)	(-0.05)	(-0.58)
Benefit Length					0.041
					(1.22)
Employment Protection	0.062	-0.173	-0.200	0.066	-0.202
	(0.21)	(-0.62)	(-0.71)	(0.22)	(-0.71)
Union Coverage	-0.004	0.007	0.006	-0.003	0.006
	(-0.52)	(0.95)	(0.66)	(-0.44)	(0.63)
Union Density		-0.039^{***}	-0.041^{***}		-0.045^{***}
		(-2.74)	(-2.74)		(-2.81)
Coordination			0.097		0.192
			(0.49)		(0.86)
ALMP					0.475
					(0.64)
Tax Wedge				-0.009	-0.031
				(-0.46)	(-1.35)
Observations	102	102	102	102	102
R-squared	0.980	0.982	0.982	0.980	0.983

Source: EU-LFS, OECD Economic Outlook 95, ICTWSS, own calculations.
Nonlinear least-squares estimation. Country fixed effects are included. T-statistics in parentheses. * / ** / *** *refers to* $\alpha = 0.1/0.05/0.01$.
The estimates quantify the respective contribution of institutions and shocks to the shared interaction coefficient.

Appendix B Online appendix – Data description and imputation methods

In order to construct labour market transitions, we use the information available in the variable ILOSTAT (labour market status in the current year according to the ILO definition), as well as the variable WSTAT1Y (self-declared labour market status in the year prior to the survey). An alternative would be to use the variable MAINSTAT (self-declared labour market status in the current year) instead of ILOSTAT. However, as this variable it not available at all for Germany and the UK. Therefore, we opt for ILOSTAT, which is consistent across our country sample.

There is also an issue of missing information for several countries. We therefore delete Bulgaria, Ireland, Iceland, and Switzerland from the sample due to low response rates in the data up to the year 2007. We also exclude the Netherlands from the analysis because information on the previous year's employment status is predominantly missing until 2008. For the same reason, a few yearly data points are not available for several countries. If this is the case, we impute the values by averaging transition rates close to the respective years. Specifically, since we average the observations within 3 year windows in the analysis, we use the available years in these windows for imputation. In three cases, extrapolation is based on only one year. This concerns France (2002 to 2004), Sweden (2005 to 2007) and Slovakia (1998 to 2000). The transition rates from employment to unemployment are missing for Austria in the period 1999 to 2001 and for Denmark from 1999 to 2001 and from 2002 to 2004. Furthermore, no information on worker flows from unemployment to employment is available for Austria between 1999 and 2001. Therefore, these data points do not enter the regression sample, and the number of observations differs between the regressions for transitions from employment to unemployment and the regressions from unemployment to employment.

The GDP growth rate is calculated by annual GDP values in volume measured in market prices extracted from the OECD Economic Outlook No. 25. The OECD applies reference years defined in national official publications which is 2005 for most countries.

The benefit replacement rate and the benefit duration are obtained from the OECD Benefit and Wages Statistics (2014). The former is a summary measure which is defined as the average of the net unemployment benefit replacement rate for two earnings levels, three family situations and 60 months of unemployment. It is available for between 2001 and 2013 for all countries of the sample. We impute values for 1999 from the measure in 2001. Our variable for benefit length captures for how many months 40-year old unemployed individuals are entitled to receive unemployment benefits. The source provides measures only for the years 2002, 2005, 2007 and 2010. Since we are interested in the years 1999, 2002, 2005, 2008 and 2010, we use the values most closely to the corresponding year as a proxy for the measure in the three-year window.

Employment protection legislation (EPL) in a country is measured by an index and stems from OECD Indicators of Employment Protection (2013). Several indicators are available. We select version 1, which measures the strictness of regulation of individual dismissal of employees on regular or indefinite contracts. The index ranges from one to fife. For most countries it is available at a yearly frequency in the time period between 1999 and 2011. However, it includes missing data for Estonia, Luxembourg and Slovenia before 2008. We conduct a complete imputation for the previous years using the value of 2008 for these countries.

The dispersion of wage bargaining is characterized by three measures. We take all from the ICTWSS 5.1 (Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts). The first is the coordination of wage setting and represents an indicator ranging from one to five where five is the highest form of collective bargaining that is equal to centralized wage bargaining. It is complete for our country-year combinations. The second measure is union coverage calculated as the ratio of employees covered by collective bargaining agreements to the proportion of all wage and salary earners in employment with the right to bargaining, adjusted for the possibility that some sectors or occupations are excluded from the right to bargain. Since it is missing within countries at most for one year at once, we impute the previous year's value. The last institutional variable to capture the dispersion of wage bargaining is union density, defined as the proportion of trade union members as a percentage of all employees. Here, mainly the same systematic missing structure exists as for the union coverage variable. Thus, we apply the same imputation method. Nevertheless, for Estonia, France, Poland and Greece up to three years are lacking in the data set. Thus, we use for 1999 the information of 2002.

The measure for active labour market policies (ALMP) comes from OECD Employment and Labour Market Statistics (2013). It refers to expenditures on programs that are aimed at helping unemployed individuals to get back into work. The time series is complete for all countries between 1999 and 2011.

The OECD reports a tax wedge indicator. We use the information given in 2015. The measure displays the difference between real labour costs and take home pay for a single-earner couple at 100 per cent of average earnings with two children. Since its values are missing for all countries in 1999, we use the data of 2000 instead.