Labour mobility and labour market adjustment in the EU

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IMF-OCP Workshop on Global Labour Markets
Paris, 1-2 September 2016

Motivation and aim

- The financial crisis resulted in major asymmetric labour demand shocks and asymmetries in labour market outcomes
- Emphasis on wage adjustment in EU policy debate, less on contribution of labour mobility
- Nevertheless, existing analyses acknowledge that mobility has considerable potential for shock absorption
- Aim is to assess role of **inter-country mobility** for labour market adjustment in the EU, using alternative approaches

Outline

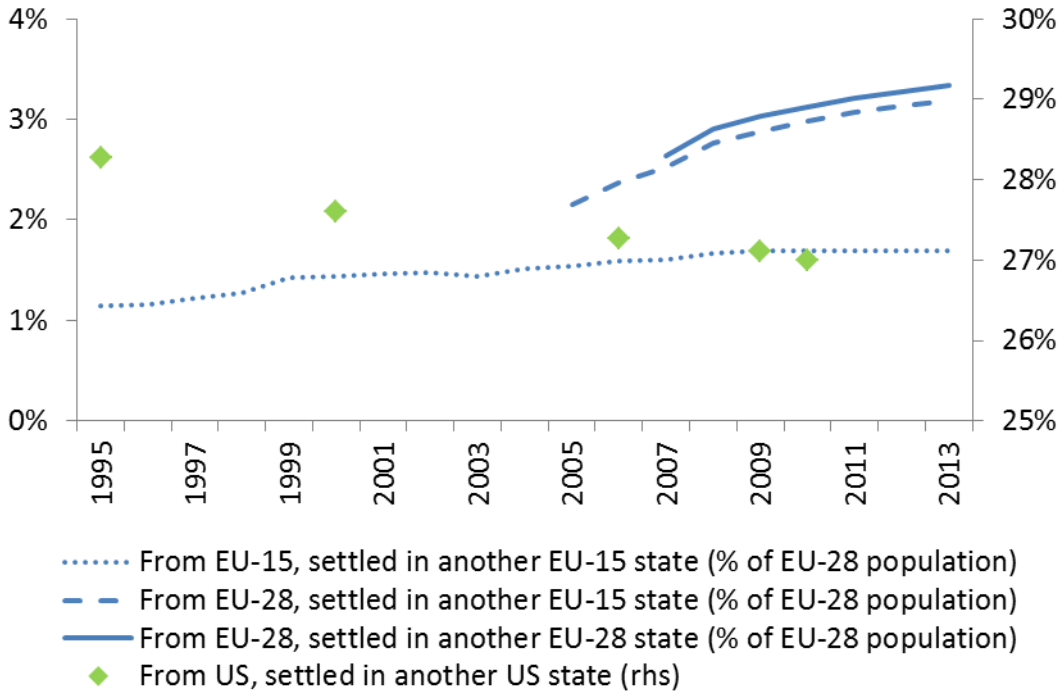
- Stylised facts on cross-border mobility in EU

- Assessment of determinants of mobility flows by means of gravity equations.
  - Role of institutional evolution (EU membership, euro) for labour mobility across the EU as compared with non-EU countries
  - Focus on bilateral flows among EU15 countries only: contribution of "standard" determinants vs. residuals

- Cross-border mobility dynamics assessed with BK-type VAR analysis
  - Contribution of mobility wrt. un., part. rate
  - Role of wage adjustment
  - Pre-post crisis; pre-post EMU

Stylised facts

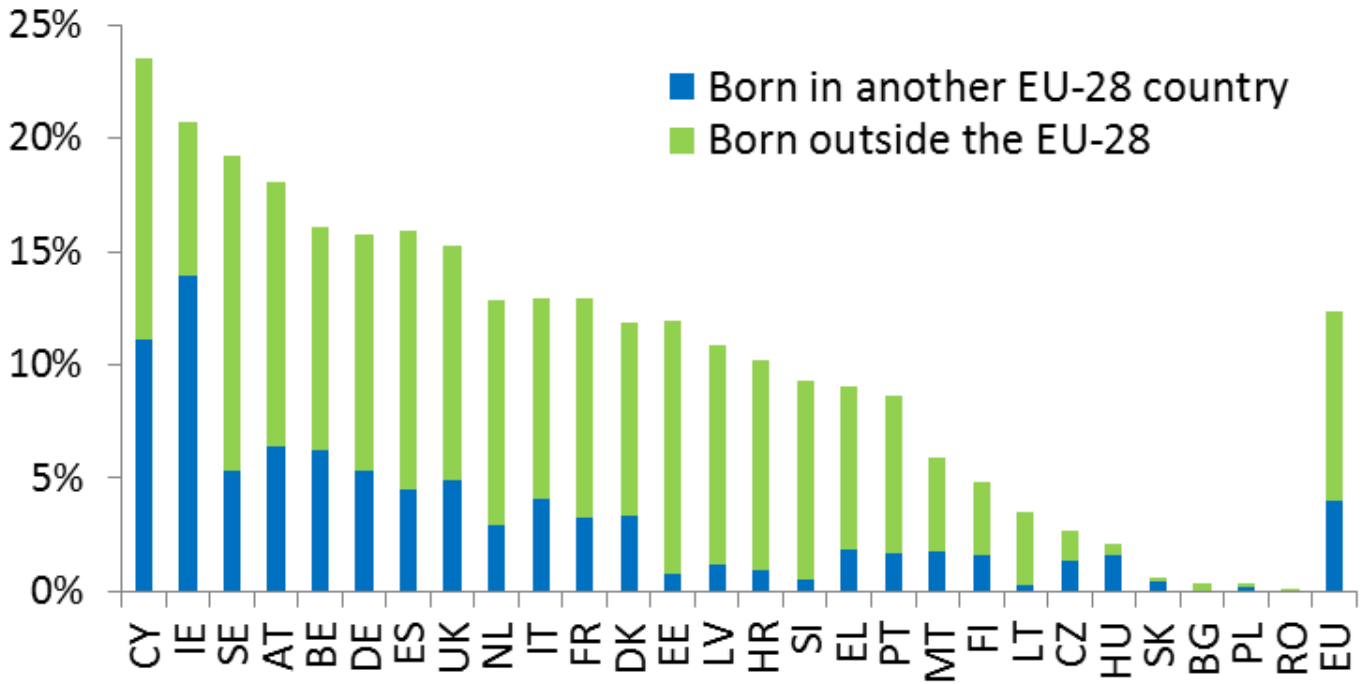
Share of EU working-age population born in other EU countries, and share of US population born in a different US state



Source: Eurostat population statistics and Eurostat special extraction from the Eurostat LFS; US Census Bureau, Census and American Community Survey.

Stylised facts

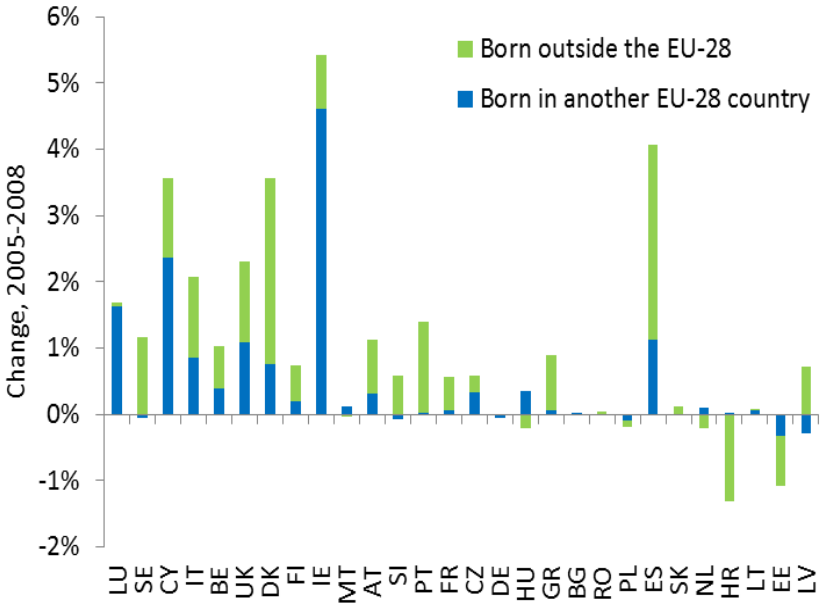
Share of working-age population born in other countries, 2013

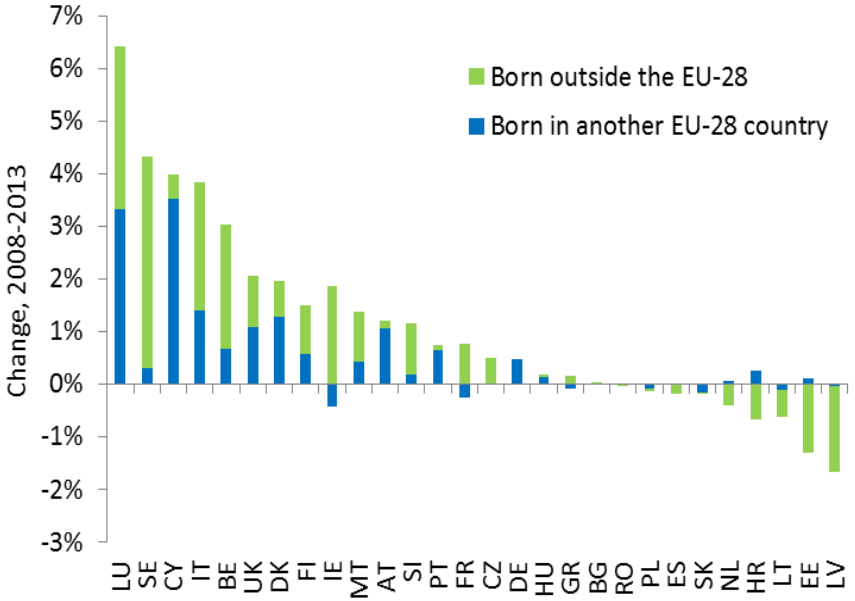


Source: Eurostat for Germany and EU-28, for others calculations based on a Eurostat special extraction from the European LFS.

Stylised facts

Change in the share of working-age population born abroad

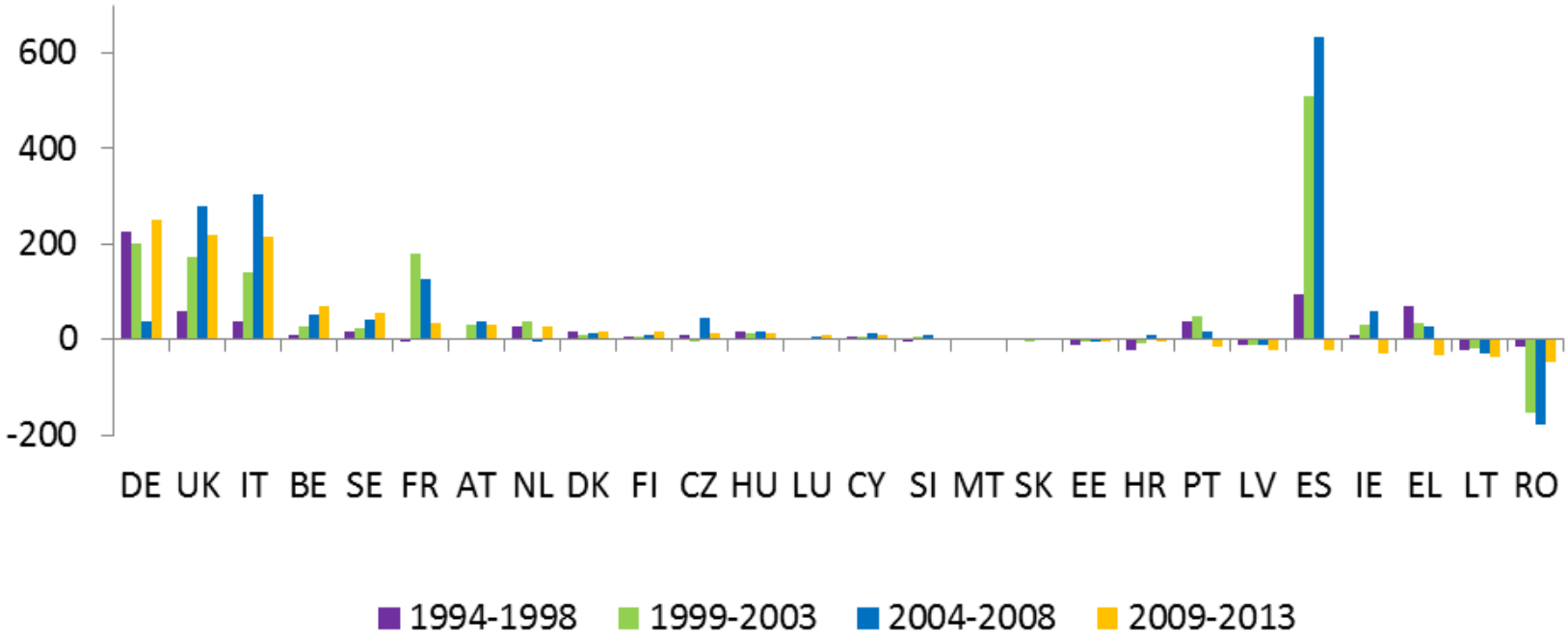




Source: Own calculations, based on a Eurostat special extraction from LFS

Stylised facts

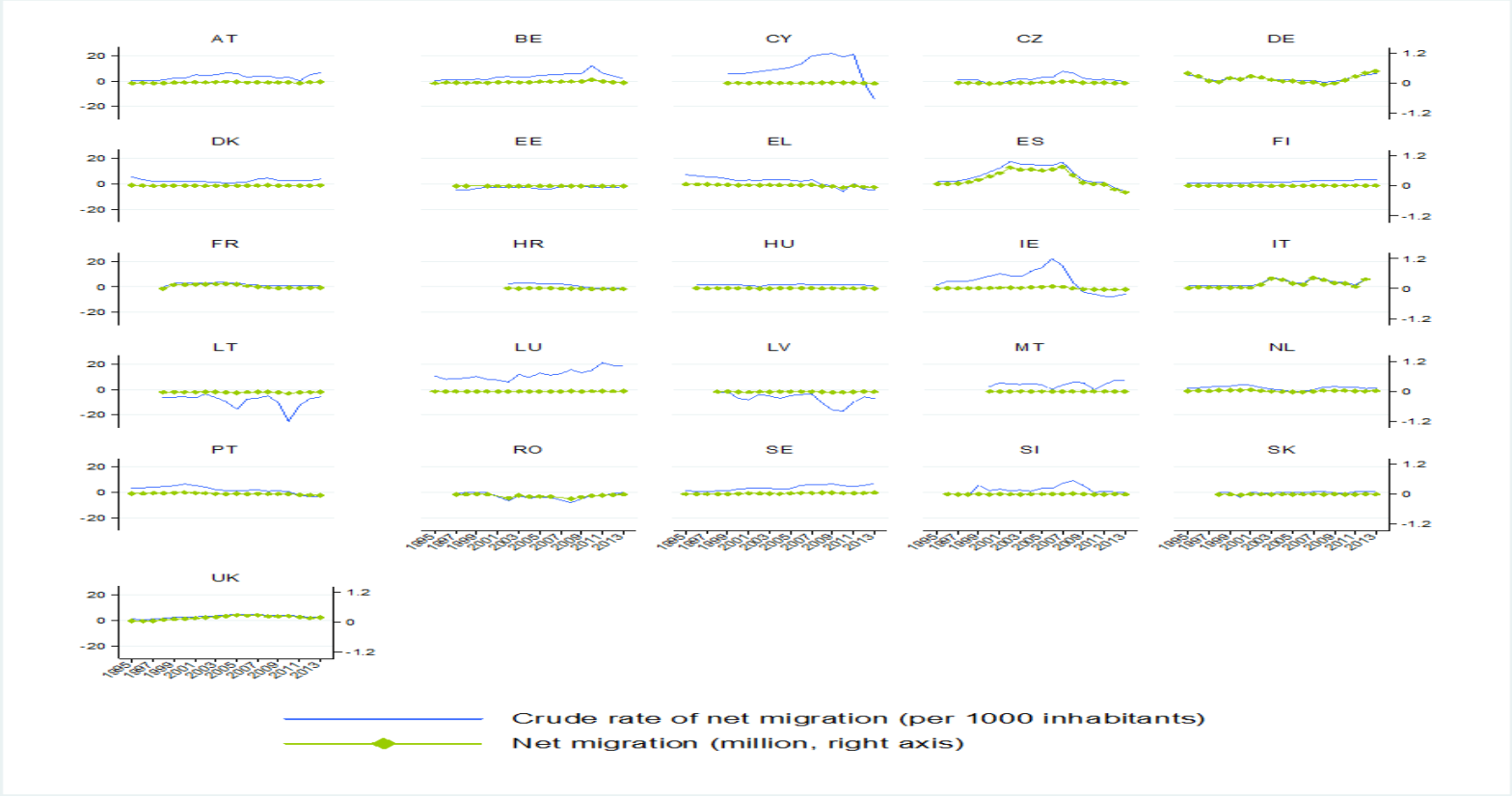
Average annual net migration flows over five-year periods (thousand)



Source: Own calculations based on Eurostat population statistics

Stylised facts

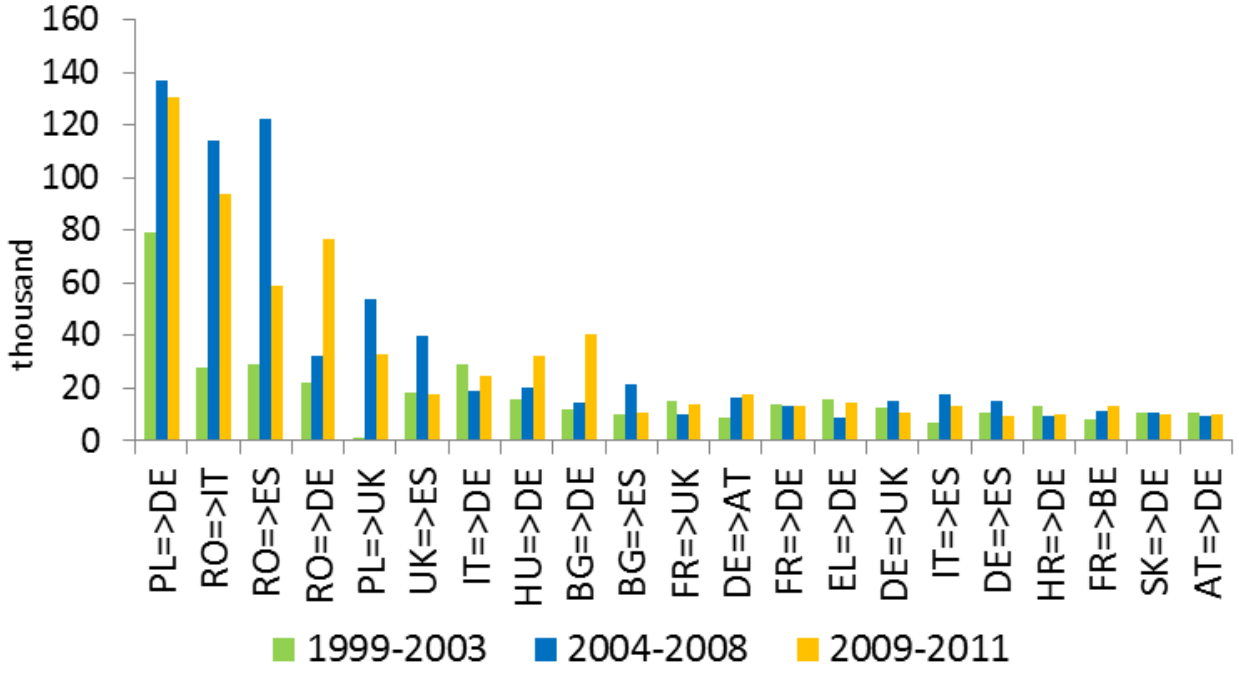
Relative and absolute net migration, 1995-2013.



Source: Eurostat population statistics

Stylised facts

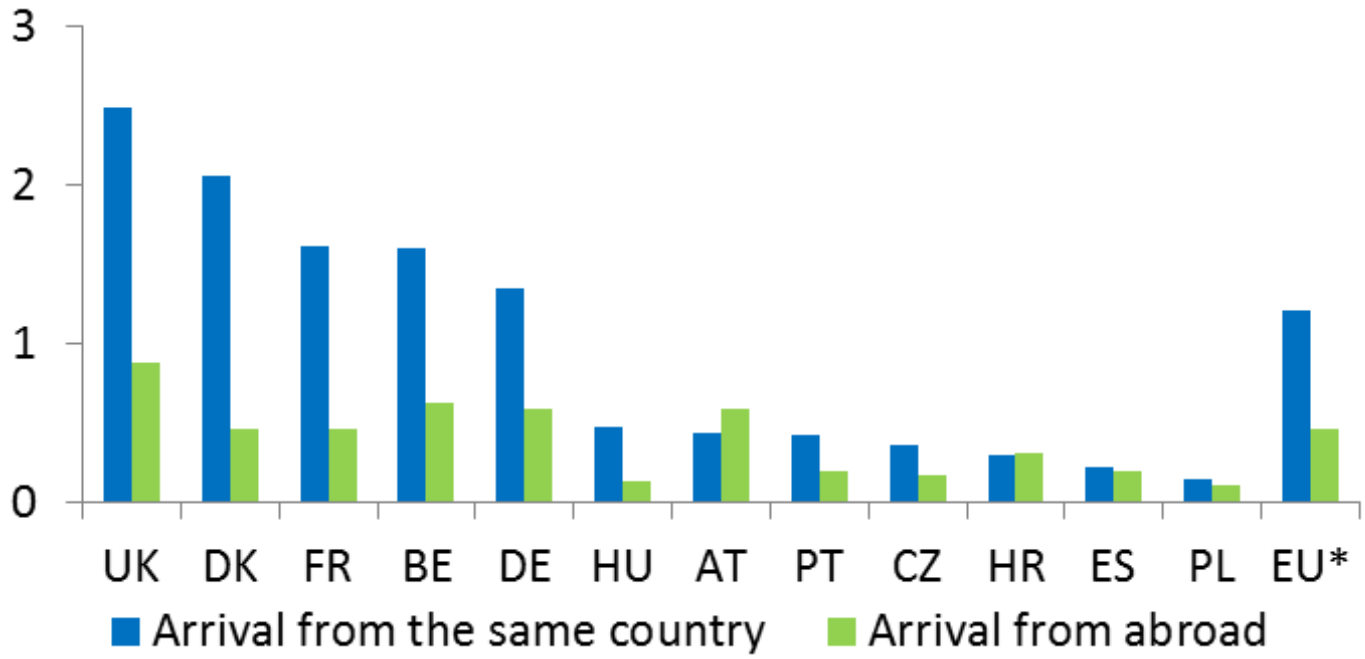
Average gross bilateral flows exceeding 10,000 over the period 1999-2011, within EU-28



Source: Own calculations, OECD International Migration Database

Stylised facts

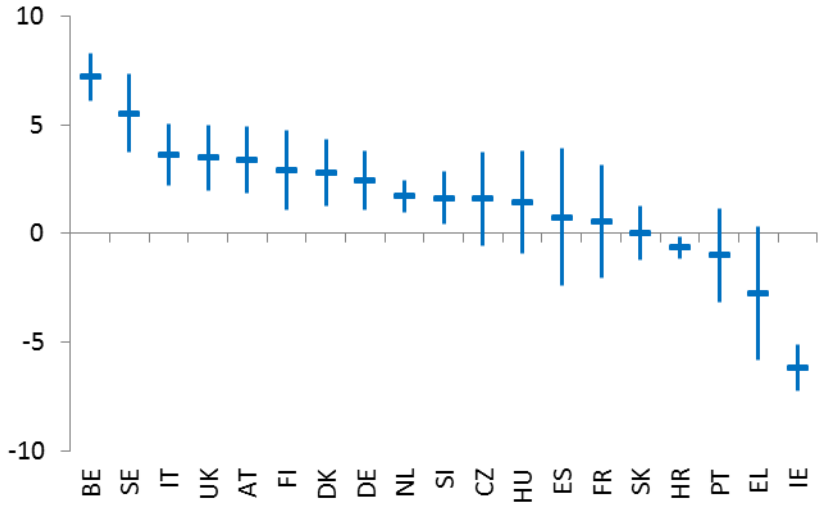
Annual rates of sub-national and international inward mobility, 2013, % of total population



Source: Eurostat special extraction from the European LFS

Stylised facts

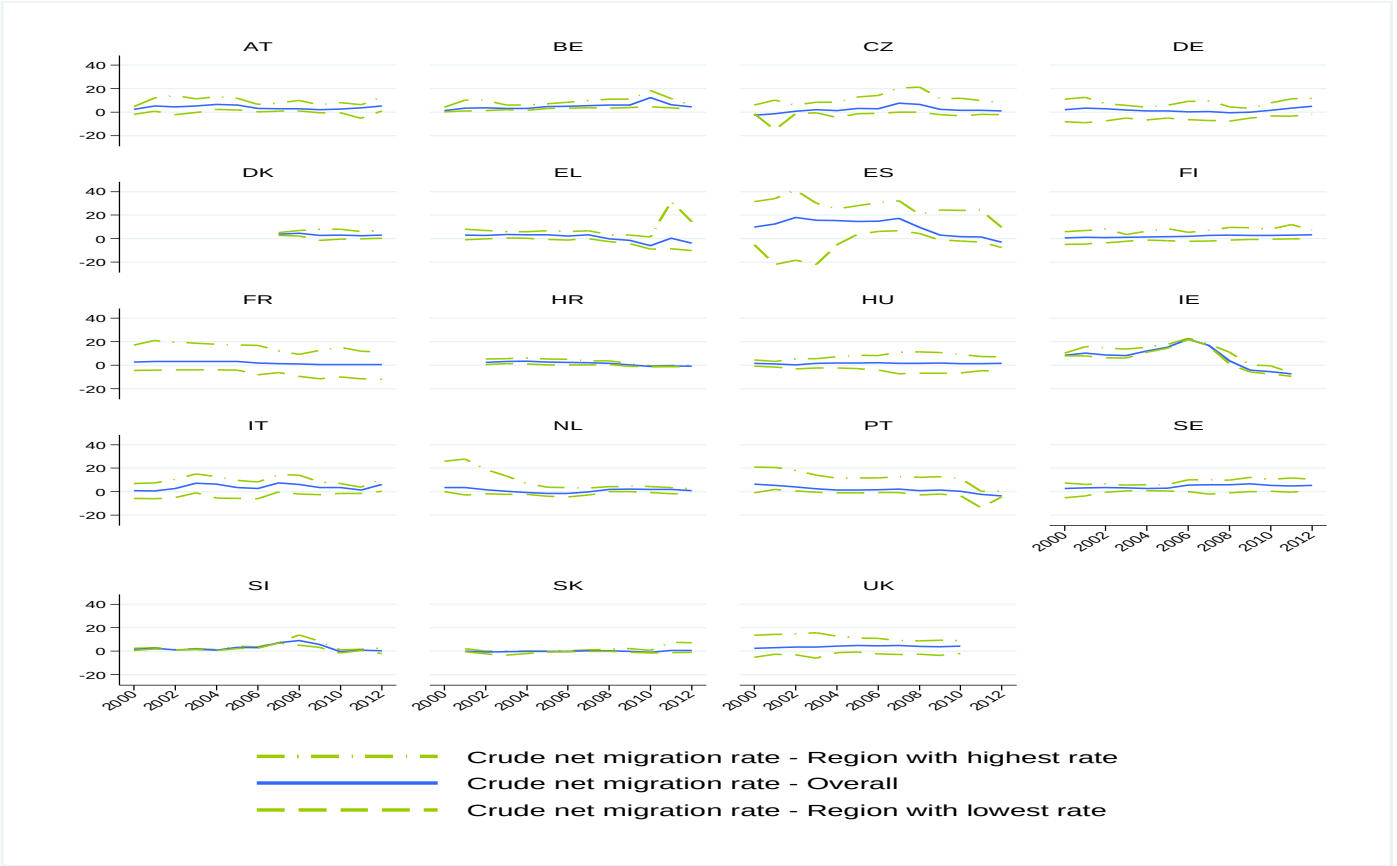
Crude rate of net migration, country-level and one standard deviation range, average, 2009-2012



Source: Own calculations, Eurostat population statistics

Stylised facts

Crude rate of net migration at the country level, and region with the highest and lowest value



Source: Own calculations, Eurostat population statistics

Insights from gravity equations

Main common, country-specific and country-pair-specific variables explaining gross bilateral trade data.

$$\ln MIG_{ijt} = \beta_0 + \beta_1 \ln\left(POP_{it} \cdot POP_{jt}\right) + \beta_2 \ln\left(DIST_{ij}\right) + \beta_3 \ln\left(\frac{PCGDP_{jt}}{PCGDP_{it}}\right) + \beta_4 \ln\left(\frac{UR_{jt}}{UR_{it}}\right)$$
$$+ \beta_5 \ln\left(STOCK_{ij\,0}\right) + \beta_6\left(LANG_{ij}\right) + \beta_8\left(LINK_{ij}\right) + \beta_9\left(EU_{ij}\right) + \beta_{10}\left(EA_{ij}\right)$$
$$+ a_t + a_i + a_j + u_{ijt}$$

Data: OECD, WB, CEPII

- 163 source countries, 38 destination countries, 2=1992-2011
- 15 EU countries to 15 EU countries

Insights from gravity equations

Determinants of gross bilateral migration flows: Gravity equations on the full sample

Dependent variable: Log gross migration flow		
Log product of populations	0.274*	0.244
	(0.164)	(0.163)
Log weighted distance	-0.669***	-0.668***
	(0.014)	(0.014)
Log relative GDP per capita in the destination country	-0.002	-0.003
	(0.068)	(0.069)
Log relative unemployment rate in the destination country (lag)	-0.137***	-0.138***
	(0.022)	(0.022)
Log bilateral migrant stock in the destination country, 1990	0.301***	0.302***
	(0.005)	(0.005)
Common language	1.028***	1.027***
	(0.026)	(0.026)
Past colonial relationship	0.615***	0.613***
	(0.041)	(0.041)
Both countries EU members in given year	0.248***	0.249***
	(0.034)	(0.034)
Both countries are EA members in given year	0.020	-0.024
	(0.039)	(0.040)
Interaction term: Relative UR. * Post-2008 crisis		0.040*
		(0.024)
Interaction term: EMU * Post-2008 crisis		0.081
		(0.061)
Interaction term: EMU * Relative UR.		-0.179***
		(0.039)
Double interaction: EMU * Rel. UR. * Crisis		-0.115
		(0.080)
Observations	27,924	27,924
R-squared	0.823	0.823

Insights from gravity equations

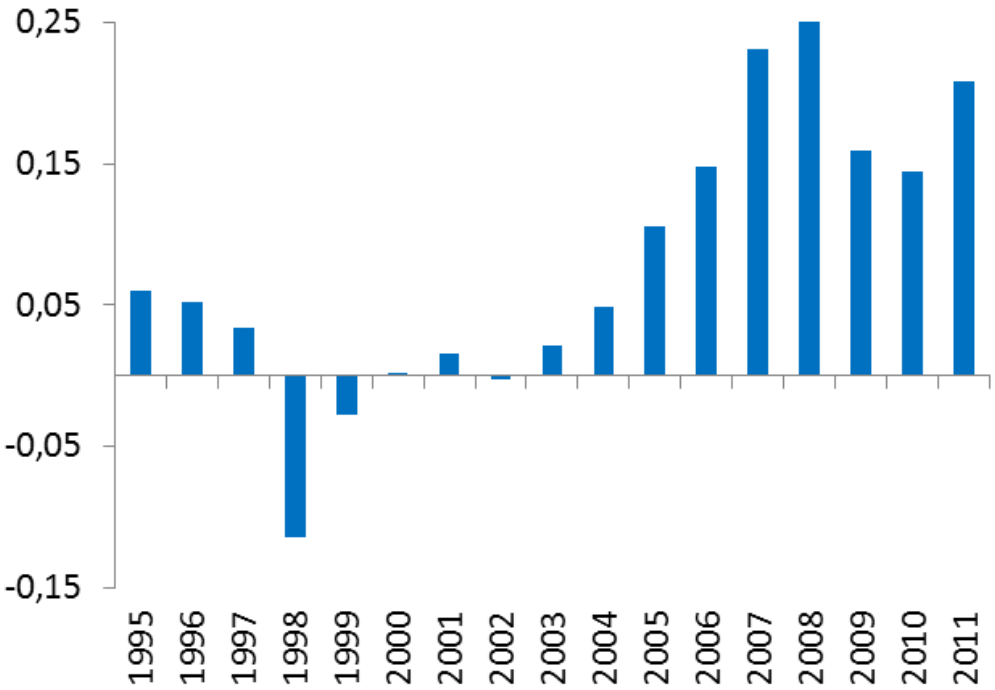
Determinants of gross bilateral migration flows: Gravity equations of intra-EU15 mobility

Dependent variable: Log gross migration flow	Full sample (1992-2011)	EMU period (1999-2011)	Crisis period (2008-2011)
Log product of populations	1.350***	1.504***	-0.268
	(0.475)	(0.552)	(2.922)
Log weighted distance	-0.258***	-0.308***	-0.331***
	(0.042)	(0.045)	(0.068)
Log relative GDP per capita in the destination country	1.704***	1.308***	2.050**
	(0.260)	(0.387)	(1.035)
Log relative unemployment rate in the destination country (lag)	-0.143***	-0.209***	-0.197
	(0.040)	(0.048)	(0.124)
Log bilateral migrant stock in the destination country, 1990	0.407***	0.386***	0.350***
	(0.017)	(0.019)	(0.030)
Common language	0.511***	0.507***	0.604***
	(0.054)	(0.063)	(0.102)
Constant	-42.047***	-49.792***	8.303
	(13.927)	(16.874)	(103.897)
Observations	2,217	1,751	550
R-squared	0.913	0.922	0.935

Insights from gravity equations

European Commission

Time profile of intra-EU15 mobility: Estimated year effects



Assessing mobility dynamics

- Main assumptions of BK framework
  - Labour markets adjust to shocks along different margins: wages, (un)employment rate, activity rate, mobility
  - Mobility of firms and workers imply wages adjust back to pre-shock level in response to labour demand shocks (as well as empl and act. rates) while population may be affected permanently

- Implementation
  - Log employment changes wrt. aggregate~=mobility
  - Log employment changes, empl. rate, act. rate: stationary variables analysed in VAR
  - Employment changes affect other variables with a lag

Assessing mobility dynamics

- Aim of analysis
  - Assess if dynamic response to shocks changed with EU integration, monetary unification
  - Assess role of wage response

- Implementation
  - Relative empl changes~=demand shocks. Broadly confirmed from relations with UR
  - Estimation of panel VAR, 2 lags, EU15, 1970-2013
  - Variables expressed as Δ EU, Δ country mean
  - VAR identification:
    - Ordering: empl. growth, empl. rate, act. rate
    - Ordering: empl. growth, real wage growth, empl. rate, act. rate

Assessing mobility dynamics

Common labour market disturbances: 1970-2013

	Employment growth			Unemployment rate			Participation rate		
	β- coefficient	t-statistic	R2 adj	β- coefficient	t-statistic	R2 adj	β- coefficient	t-statistic	R2 adj
Austria	0.49	4.9	0.34	0.41	11.0	0.73	1.29	13.9	0.82
Belgium	0.76	7.3	0.55	0.81	10.4	0.71	0.98	19.5	0.90
Germany	0.74	5.5	0.41	0.68	6.6	0.50	1.10	33.9	0.96
Denmark	0.59	3.3	0.19	0.61	6.7	0.50	0.26	2.3	0.09
Greece	0.57	1.6	0.04	1.62	6.1	0.46	1.34	19.5	0.90
Spain	2.43	9.5	0.68	2.43	16.9	0.87	1.95	26.2	0.94
Finland	1.40	4.9	0.35	0.98	5.7	0.41	0.20	2.1	0.07
France	0.86	9.4	0.67	1.24	21.3	0.91	0.60	14.2	0.82
Ireland	1.89	5.1	0.37	0.93	4.3	0.28	1.35	15.9	0.85
Italy	0.80	5.1	0.37	0.68	11.1	0.74	0.73	16.0	0.89
Luxembourg	0.37	2.5	0.11	0.50	7.1	0.53	0.53	10.5	0.72
Netherlands	0.85	5.7	0.43	0.46	4.8	0.34	3.06	19.4	0.90
Portugal	1.20	5.5	0.41	0.80	4.9	0.34	1.27	19.2	0.86
Sweden	1.00	5.1	0.37	0.75	5.9	0.43	0.17	1.4	0.02
United Kingdom	0.96	5.5	0.41	0.77	7.5	0.56	0.50	7.4	0.55
Average	0.99		0.38	0.91		0.55	1.02		0.69
OLS estimate	0.99	16.8	0.30	0.91	16.2	0.28	1.01	11.8	0.17
Average D&F (1995)			0.20			0.89			0.27

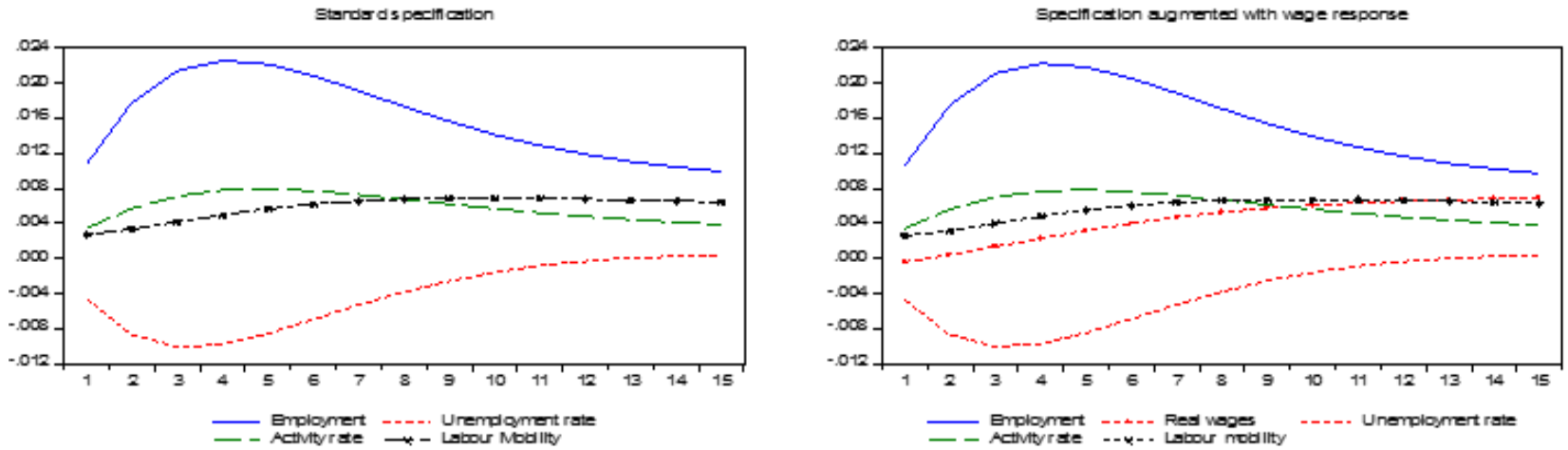
Source: Eurostat LFS.

Assessing mobility dynamics

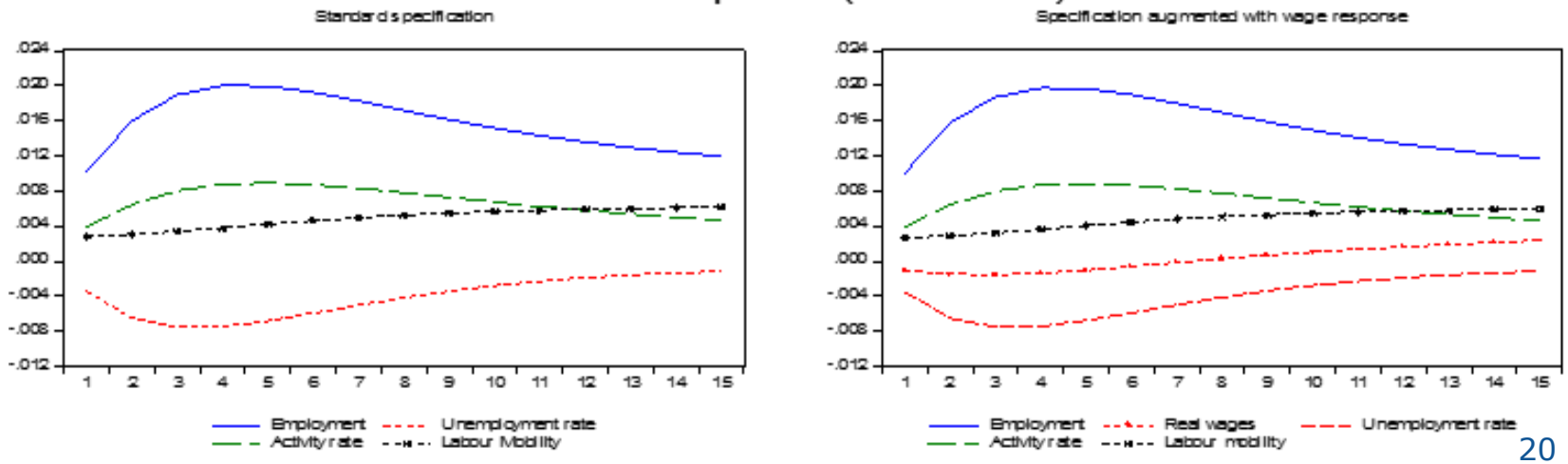
European Commission

Responses to a country specific positive labour demand shock

Whole sample (1970-2013)



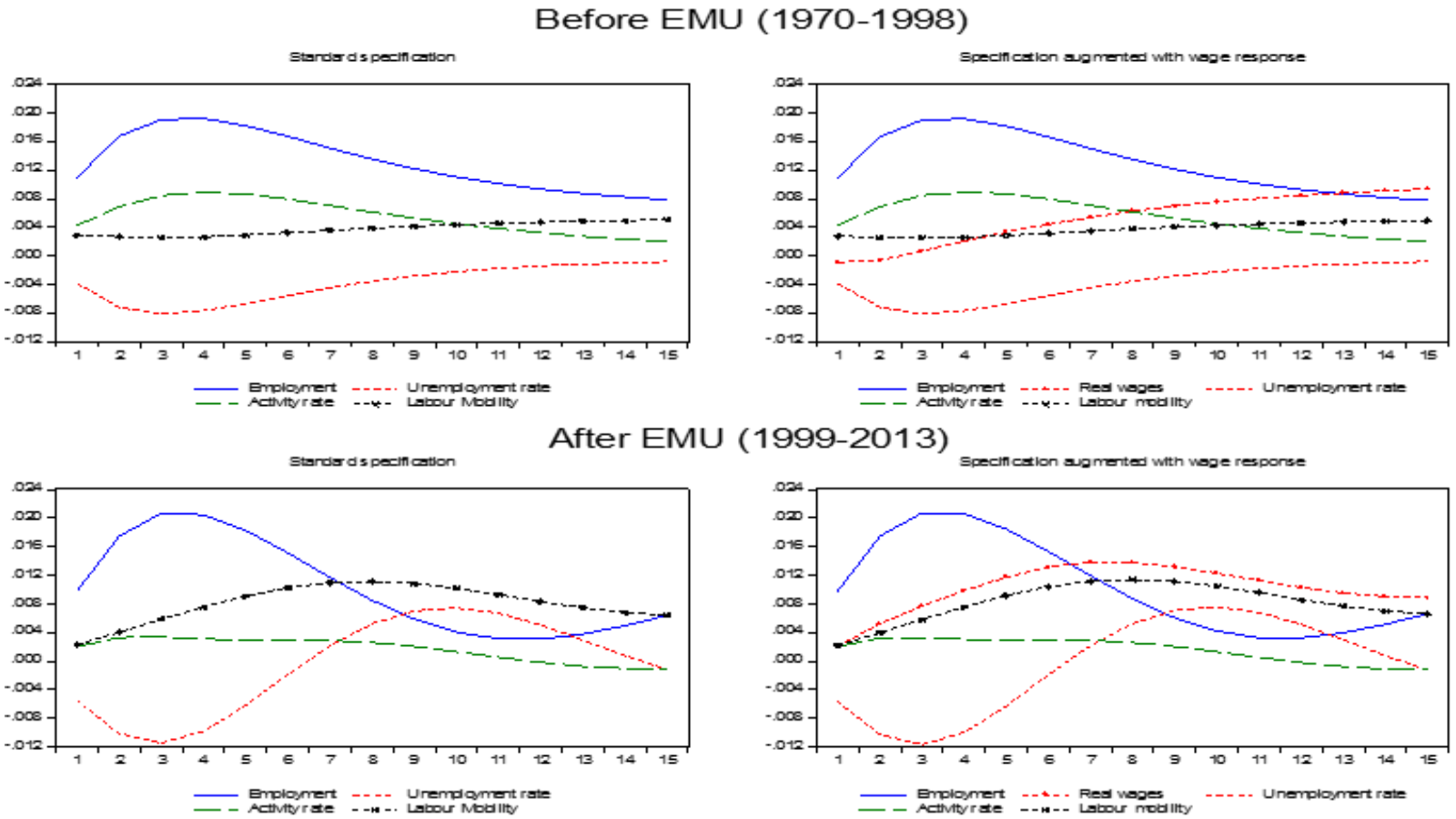
Pre-crisis period (1970-2007)



Assessing mobility dynamics

European Commission

Responses to a country specific positive labour demand shock



Assessing mobility dynamics

European Commission

Variance decomposition: percentage of the variance of each variable explained by a country specific labour demand shock

	Before EMU			After EMU		
Years after the shock	Growth of relative real wages	Activity rate	Labour mobility	Growth of relative real wages	Activity rate	Labour mobility
1	0.3	12.6	6.0	1.1	8.4	7.6
3	0.5	27.7	6.0	5.2	15.2	18.9
5	0.9	36.9	6.0	5.7	18.3	21.1
10	1.2	44.0	6.1	5.8	19.8	21.6
15	1.3	45.2	6.2	5.8	19.8	21.6

Wrapping up

- Positive relation between EU membership and migration
  - Holds controlling for standard explanatory factors
  - No additional EMU effect
  - Growing over time
- Stronger responsiveness of bilateral migration flows to labour market divergences after EMU
- Dynamic response to labour demand shocks
  - Growing responsiveness of both cross-country mobility and wages after EMU