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D3.11 Analysis of the impact of the financial and economic crisis on European Union Member States

Carlos A. Carrasco, Jesús Ferreiro, Catalina Gálvez, Carmen Gómez and Ana González

(University of the Basque Country UPV/EHU)

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"The long and tortuous path of the euro crisis: institutional innovations and monetary policy"
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Objective of deliverable:

- analyze the impact of the financial and economic crisis on the European Union countries
- Detect differences between euro and non-euro economies, and within Eurozone

Four parts:

- Impact of crisis on three groups of EU countries: EMU-11, EMU-6, EU-10 (non-euro)
- Impact of crisis on individual EU economies
- Impact of the crisis on the coherence of European Monetary Union
- Empirical analysis of determinants of impact of economic and financial crisis

Variables analysed

Economic activity:
- rate of growth of real GDP
- rate of growth of GDP per capita
- rate of growth of potential GDP
- output gap

Labour market:
- employment growth
- unemployment rate
- rate of growth of real wages
- rate of growth of real unit labor costs

Income distribution:
- adjusted wage share
- GINI coefficient

Inflation:
- rate of inflation (CPI)

Balance of payments:
- balance on current account

Public finances:
- public budget balance
- public debt

Financial balance sheets of total economy and agents:
- financial assets
- financial liabilities
- net financial assets

Impact of the crisis on Euro and Non-Euro Countries

EU countries have been classified in 3 groups:

- Euro countries:
  - EMU-11 (BE, DE, IRL, ES, FR, IT, LUX, NL, AP, PT, FI)
  - EMU-6 (EE, GR, CY, MT, SL, SK)
- Non-Euro countries (EU-10) (BG, CZ, DK, LT. LV, HU, PL, RO, SW, UK)

For the 3 groups, values of selected variables have been weighted according to respective shares in total GDP of the group

Conclusions are biased by larger countries

Sources of variables: AMECO and Eurostat

REAL VARIABLES	2003-2007			2008-2013		
	EMU11	EMU6	EU10	EMU11	EMU6	EU10
Rate of growth of real GDP (%)	2.1	**4.8**	3.6	-0.2	**-2.4**	0.3
Rate of growth of real GDP per capita (%)	1.5	**4.5**	3.3	-0.5	**-2.2**	-0.3
Rate of growth of potential GDP (%)	1.8	**3.5**	2.8	0.7	**-0.2**	1.3
Output gap (% potential GDP)	0.7	**2.3**	1.2	-1.5	**-4.1**	-2.0
Employment (%)	1.6	**1.9**	1.0	-0.1	**-2.7**	0.3
Unemployment rate (%)	8.9	**8.6**	8.3	9.6	**13.2**	10.8
Rate of growth of real wages (%)	0.4	**2.7**	2.7	0.7	**-1.6**	-0.2
Rate of growth of real ULCs (%)	**-0.7**	-0.8	-0.4	**0.6**	-0.8	0.2
Adjusted wage share (% GDP)	**55.2**	51	56.1	**56.2**	51.6	56.0
Change in Adjusted wage share (% GDP) (since 2005)				-0.7	**-3.8**	-2.0
Gini coefficient	**29.1**	31.5	31.3	**30**	30.8	30.7
Inflation rate (CPI) (%	2.0	**3.5**	2.2	1.8	**2.5**	3.0
Balance on current transactions (% GDP)	0.9	**-9.8**	-1.5	1.2	**-7.0**	-1.7
Public budget balance (% GDP)	-2.0	**-4.8**	-2.4	-4.1	**-8.8**	-5.8
Public debt (% GDP)	67.3	**78.3**	40.7	82.9	**107.8**	62.8

FINANCIAL VARIABLES (% GDP)	2003-2007			2008-2012		
	EMU11	EMU6	EU10	EMU11	EMU6	EU10
Financial Assets: Total Economy	858.0	451.0	**1041.0**	1035.0	534.0	**1417.0**
Financial Liabilities: Total Economy	866.0	516.0	**1062.0**	1043.0	620.0	**1435.0**
Net Financial Assets: Total Economy	-9.0	**-65.1**	-21.0	-8.5	**-86.0**	-18.4
Financial Assets: General Government	**31.8**	44.8	33.6	**40.1**	48.1	40.7
Financial Liabilities: General Government	97.2	**124.3**	62.2	96.8	**111.7**	75.0
Net Financial Assets: General Government	-48.4	-58.8	**-17.1**	-56.1	-63.9	**-34.3**
Financial Assets: Households	201.7	**131.1**	223.4	203.8	**122.5**	228.7
Financial Liabilities: Households	64.2	**40.8**	82.3	71.3	**60.2**	89.3
Net Financial Assets: Households	137.5	**90.3**	142.4	132.4	**62.3**	140.6
Financial Assets: Non-Financial Corporations	**167.4**	76.8	133.6	**182.9**	73.9	147.8
Financial Liabilities: Non-Financial Corporations	**262.4**	162.0	258.8	**278.1**	157.2	269.4
Net Financial Assets: Non-Financial Corporations	-93.4	-85.2	**-124.0**	-94.3	-83.4	**-120.4**
Financial Assets: Financial Corporations	456.8	198.0	**650.3**	607.7	289.5	**999.8**
Financial Liabilities: Financial Corporations	459.2	209.6	**671.2**	596.7	290.4	**1002.9**
Net Financial Assets: Financial Corporations	-2.5	**-11.6**	-20.9	-0.9	**11.0**	-3.1

Focusing on Real Variables, Eurozone has been more negatively affected by the financial and economic crisis than EU-10

The negative impact on EMU-6 has been higher than in EMU-11

EU-10 includes two countries that have joined eurozone after 2013 (Latvia and Lithuania). Adding these two countries to EMU (EMU-8) would present worse performance for EMU and, mainly, EMU-8 (i.e., new members of eurozone)

Results are biased by the performance of larger economies:

- EMU-11: DE: 30%, FR: 22%, IT: 17%
- EMU-6: GR: 58%, SK: 19%, SL: 11%
- EU-10: UK: 61%, Poland: 10%, Sweden: 10%

Results (may) hide significant individual differences between and within groups

Impact of the crisis on European Union Countries

We have analysed the evolution of the selected variables for the EU-27 between 2003 and 2013 (financial variables: 2003-2012)

We have analysed the averages for two sub-periods (2003-2007, 2008-2013) (financial variables: 2003-2007, 2008-2012)

We present data for the change of each variable between 2007 and 2013 (2012)

	BE	BG	CZ	DK	DE	EE	IE	GR	ES	FR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SL	SK	FI	SW	UK
Rate of growth of real GDP (%)	-2,7	-5,5	-6,6	-1,2	-2,9	-5,1	-5,3	-7,4	-4,7	-2,1	-3,6	-10,5	-5,9	-6,5	-4,5	1,0	-1,2	-4,7	-3,4	-5,2	-3,8	-2,8	-8,1	-9,6	-6,7	-1,7	-1,7
Rate of growth of real GDP per capita (%)	-2,7	-3,5	-7,2	-1,3	-3,6	-4,5	-2,3	-3,3	-1,9	-1,4	-2,6	-8,4	-6,4	-6,7	-5,1	2,3	-1,0	-4,9	-3,2	-5,0	-2,0	-5,2	-8,0	-9,3	-6,7	-1,5	-1,2
Rate of growth of potential GDP (%)	-1,2	-4,1	-4,1	-1,4	-0,1	-2,7	-2,1	-5,0	-4,4	-0,8	-1,2	-5,0	-5,9	-4,7	-1,6	-1,6	-0,1	-1,8	-1,0	-0,8	-2,2	-4,7	-3,8	-3,5	-2,3	-0,7	-0,9
Output gap (% potential GDP)	-4,0	-3,8	-9,1	-7,6	-2,6	-12,0	-7,3	-18,5	-10,5	-4,8	-6,6	-9,8	-11,3	-9,2	-7,1	-5,4	-1,8	-5,8	-2,7	-4,3	-7,3	-7,4	-11,9	-11,6	-7,4	-5,2	-4,4
Employment (%)	-2,6	-4,6	-1,0	0,0	-1,3	0,1	-1,2	-5,7	-6,0	-1,8	-3,1	-11,0	4,8	-0,2	-2,8	1,7	0,2	-3,2	-2,7	-4,6	-2,8	-0,8	-4,4	-2,4	-3,0	-1,5	0,7
Unemployment rate (%)	0,9	6,1	1,7	3,2	-3,3	4,0	8,4	19,1	17,9	2,3	7,4	6,1	12,0	5,8	7,5	1,7	2,8	-0,1	3,1	0,5	0,7	7,2	0,7	5,2	3,0	1,3	1,9
Rate of growth of real wages (%)	0,8	7,6	-4,7	-2,0	1,3	-12,8	-2,5	-6,9	-0,6	0,4	-0,2	-5,3	-10,9	-3,8	0,6	0,1	-3,9	-1,0	-0,2	-0,5	2,7	-6,7	-0,7	-4,8	-1,9	-2,9	-2,5
Rate of growth of real ULCs (%)	0,5	6,0	-1,3	-2,6	2,2	-3,3	-2,6	-4,2	-3,1	1,0	0,5	-1,2	-3,9	4,0	1,0	0,6	0,2	0,8	1,6	1,3	1,7	-2,5	-0,2	-0,8	2,6	-1,6	-0,1
Adjusted wage share (% GDP)	3,0	10,6	1,7	0,5	3,0	1,1	1,5	-2,3	-1,5	2,6	1,8	-4,1	-2,6	-5,3	2,3	-3,4	1,1	3,8	2,9	-0,4	-2,2	-5,4	4,1	2,7	4,8	2,9	-0,7
Gini coefficient	-0,4	0,1	-0,7	2,3	-0,7	-0,5	-1,4	0,1	1,8	3,5	0,3	2,6	-0,2	0,8	3,0	2,4	1,6	-2,5	0,8	-1,5	-2,6	-3,8	1,2	-0,3	-0,8	1,5	-2,4
Inflation rate (CPI) (%	-0,7	-7,5	-1,4	-0,9	-0,8	-3,8	-4,4	-3,8	-1,4	-0,6	-0,6	-2,8	-10,1	-4,7	-0,6	-6,3	0,1	0,9	-0,1	-1,6	-2,2	-0,8	-1,8	-1,4	-1,0	-2,3	0,2
Balance on current transactions (% GDP)	-5,4	26,7	2,5	5,5	-0,1	14,6	9,9	13,1	11,1	-0,9	2,4	9,6	18,9	16,2	-5,3	11,4	7,0	1,1	-1,0	5,1	9,8	12,7	8,8	6,3	-6,1	-2,5	-1,5
Public budget balance (% GDP)	-2,6	-2,7	-0,8	-5,7	-0,2	-2,6	-7,2	-5,9	-9,1	-1,5	-1,2	-8,9	-0,2	-1,2	-3,6	2,7	-0,5	-2,6	-0,5	-2,4	-1,8	0,6	-14,7	-1,0	-7,8	-4,8	-2,9
Public debt (% GDP)	17,6	1,7	17,9	17,7	13,4	6,4	99,4	71,9	56,6	28,0	28,1	48,1	29,8	22,4	16,4	11,5	7,4	25,9	16,4	11,5	59,6	25,2	47,7	24,8	22,0	0,3	43,7

	BE	BG	CZ	DK	DE	EE	IE	GR	ES	FR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SL	SK	FI	SW	UK
Financial Assets: Total Economy (% GDP)	-0,2	-32,0	53,2	134,7	18,5	-93,3	775,5	87,2	72,0	33,6	66,9	145,6	8,8	14,5	3177,9	93,0	153,1	341,6	14,7	20,6	152,9	-41,1	3,2	18,8	223,2	78,0	336,3
Financial Liabilities: Total Economy (% GDP)	-16,4	-87,0	56,8	91,3	-6,9	-112,4	871,3	105,1	83,3	50,2	64,6	249,9	5,2	14,1	3256,4	89,5	124,3	298,7	1,4	30,9	177,0	-15,2	25,9	29,7	184,2	79,9	336,4
Net Financial Assets: Total Economy (% GDP)	16,2	54,9	-3,8	43,5	25,4	19,1	-95,7	-18,0	-11,4	-16,6	2,3	-104,3	3,6	0,2	-78,6	3,5	28,8	43,0	13,4	-10,3	-24,2	-25,9	-22,7	-10,8	39,0	-1,9	0,0
Financial Assets: General Government (% GDP)	9,0	-7,2	-2,6	11,7	14,9	10,4	16,3	23,0	25,0	2,8	2,8	13,5	10,1	4,3	3,2	8,9	6,6	20,6	6,4	-3,3	35,9	-6,4	1,1	3,1	5,2	0,4	15,1
Financial Liabilities: General Government (% GDP)	18,3	0,5	24,5	23,0	22,8	6,4	99,3	39,2	66,8	37,4	25,2	36,9	21,5	39,2	6,7	16,3	15,2	35,0	24,6	14,8	64,6	24,1	27,3	21,4	22,4	-0,8	55,0
Net Financial Assets: General Government (% GDP)	-9,3	-7,7	-27,1	-11,3	-7,9	4,0	-83,1	-16,2	-41,8	-34,6	-22,4	-23,5	-11,3	-34,9	-3,6	-7,4	-8,6	-14,3	-18,2	-18,0	-28,7	-30,6	-26,2	-18,2	-17,1	1,1	-39,9
Financial Assets: Households (% GDP)	11,7	-0,5	19,2	23,9	0,9	-33,9	38,6	-16,5	-7,8	12,5	-5,4	-12,9	4,2	12,5	4,5	3,6	-0,3	43,0	6,0	-1,8	10,1	-27,4	-1,5	15,3	1,7	19,3	8,2
Financial Liabilities: Households (% GDP)	8,8	4,9	8,6	8,8	-5,0	-9,1	6,9	17,0	-1,3	10,6	6,0	30,0	-8,9	-4,3	7,5	1,3	7,8	19,9	0,7	11,7	2,0	0,9	5,0	9,9	13,0	13,2	-6,5
Net Financial Assets: Households (% GDP)	2,9	-5,4	10,5	15,1	5,9	-24,8	31,6	-33,5	-6,6	2,0	-11,5	-42,9	13,1	16,7	-2,9	2,3	-8,2	23,1	5,3	-13,5	8,1	-28,2	-6,5	5,5	-11,4	6,1	14,7
Financial Assets: Non-Financial Corporations (% GDP)	105,5	-36,6	5,9	-31,6	-5,7	-44,2	177,4	-22,9	-28,2	-20,5	-11,0	-22,2	-0,2	2,6	-128,8	61,4	47,1	51,3	14,6	2,4	1,1	-23,0	-13,6	2,4	20,9	4,5	8,1
Financial Liabilities: Non-Financial Corporations (% GDP)	90,1	-67,4	-3,8	-66,2	-16,4	-82,9	224,6	-32,9	-51,4	-28,2	-14,3	90,3	1,7	-14,1	-82,3	68,6	17,3	2,2	-1,5	-11,6	12,2	-44,3	-18,6	5,9	-46,9	14,1	-3,3
Net Financial Assets: Non-Financial Corporations (% GDP)	15,4	30,8	9,7	34,5	10,6	38,7	-47,2	10,0	23,2	7,6	3,3	-112,5	-1,9	16,7	-46,5	-7,2	29,9	49,1	16,2	14,2	-11,1	21,2	5,0	-3,5	67,9	-9,6	11,5
Financial Assets: Financial Corporations (% GDP)	-126,3	12,3	30,5	130,8	8,3	-25,6	543,4	103,5	82,9	38,9	80,6	167,2	-5,3	-4,9	3298,9	19,0	99,8	226,7	-12,2	23,2	105,8	15,7	17,2	-2,1	195,4	54,0	304,9
Financial Liabilities: Financial Corporations (% GDP)	-133,5	-25,1	27,5	125,6	-8,4	-26,7	540,5	81,8	69,2	30,6	47,6	92,8	-9,1	-6,7	3324,5	3,2	84,0	241,5	-22,4	16,1	98,1	4,0	12,2	-7,5	195,8	53,4	291,2
Net Financial Assets: Financial Corporations (% GDP)	7,2	37,4	3,0	5,2	16,7	1,1	2,9	21,7	13,7	8,5	33,0	74,5	3,8	1,8	-25,6	15,8	15,9	-14,8	10,1	7,1	7,6	11,7	5,0	5,4	-0,3	0,5	13,7

3 EU Countries with the worst economic performance

GDP growth:	Cyprus, Slovakia, Slovenia (EMU-6)
GDP per capita growth:	Cyprus, Slovakia, Slovenia (EMU-6)
Potential GDP growth:	Greece, Slovenia, Slovakia (EMU-6)
Output gap:	Estonia, Greece, Slovenia (EMU-6)
Employment:	Greece, Cyprus (EMU-6), Spain (EMU-11)
Unemployment rate:	Greece (EMU-6), Spain (EMU-11), Latvia (EU-10)
Wage growth:	Estonia, Greece (EMU-6), Latvia (EU-10)
Wage share:	Cyprus (EMU-6), Lithuania, Romania (EU-10)
Gini coefficient:	France, Luxembourg (EMU-11) Cyprus (EMU-11)
Current account balance:	
improvement	Bulgaria (EU-10), Latvia, Lithuania (EMU-6)
worsening	Belgium, Luxembourg, Finland (EMU-11)
Public budget balance:	Spain (EMU-11) Cyprus, Slovenia (EMU-6)
Public debt:	Greece (EMU-6), Spain, Portugal (EMU-11)

3 countries with highest variation in financial variables (highest increase and highest fall-lower increase)

TOTAL ECONOMY

assets

highest increase: Ireland, Netherlands (EMU-11), United Kingdom (EU-10)

highest fall: Bulgaria, Romania (EU-10), Estonia (EMU-6)

liabilities

highest increase: Ireland, Netherlands (EMU-11), United Kingdom (EU-10)

highest fall: Belgium (EMU-11), Bulgaria (EU-10), Estonia (EMU-6)

net financial assets

highest increase: Bulgaria, Denmark (EU-10), Netherlands (EMU-11)

highest fall: Ireland, Luxembourg (EMU-11), Cyprus (EMU-6)

GENERAL GOVERNMENT

assets

highest increase: Greece (EMU-6), Spain, Portugal (EMU-11)

highest fall: Bulgaria, Poland, Romania (EU-10)

liabilities

highest increase: Ireland, Spain, Portugal (EMU-11)

highest fall: Sweden, Bulgaria (EU-10), Estonia (EMU-6)

net financial assets

highest increase: Estonia (EMU-6), Luxembourg, Netherlands (EMU-11)

highest fall: Ireland, Spain (EMU-11), United Kingdom (EU-10)

HOUSEHOLDS

assets

higher increase: Ireland, Netherlands (EMU-11), Denmark (EU-10)

higher fall: Romania (EU-10), Greece, Estonia (EMU-6)

liabilities

higher increase: Greece, Cyprus (EMU-6), Netherlands (EMU-11)

higher fall: Latvia, United Kingdom (EU-10), Estonia (EMU-6)

net financial assets

higher increase: Lithuania (EU-10), Ireland, Netherlands (EMU-11)

higher fall: Romania (EU-10), Greece, Cyprus (EMU-6)

NON-FINANCIAL CORPORATIONS

assets

higher increase: Belgium, Ireland (EMU-11), Hungary (EU-10)

higher fall: Bulgaria (EU-10), Estonia (EMU-6), Luxembourg (EMU-11)

liabilities

higher increase: Belgium, Ireland (EMU-11), Cyprus (EMU-6)

higher fall: Bulgaria (EU-10), Estonia (EMU-6), Luxembourg (EMU-11)

net financial assets

higher increase: Estonia (EMU-6), Finland, Netherlands (EMU-11)

higher fall: Ireland, Luxembourg (EMU-11), Cyprus (EMU-6)

FINANCIAL CORPORATIONS

assets

higher increase: Luxembourg, Ireland (EMU-11), United Kingdom (EU-10)

higher fall: Bulgaria (EU-10), Estonia (EMU-6), Belgium (EMU-11)

liabilities

higher increase: Luxembourg, Ireland (EMU-11), United Kingdom (EU-10)

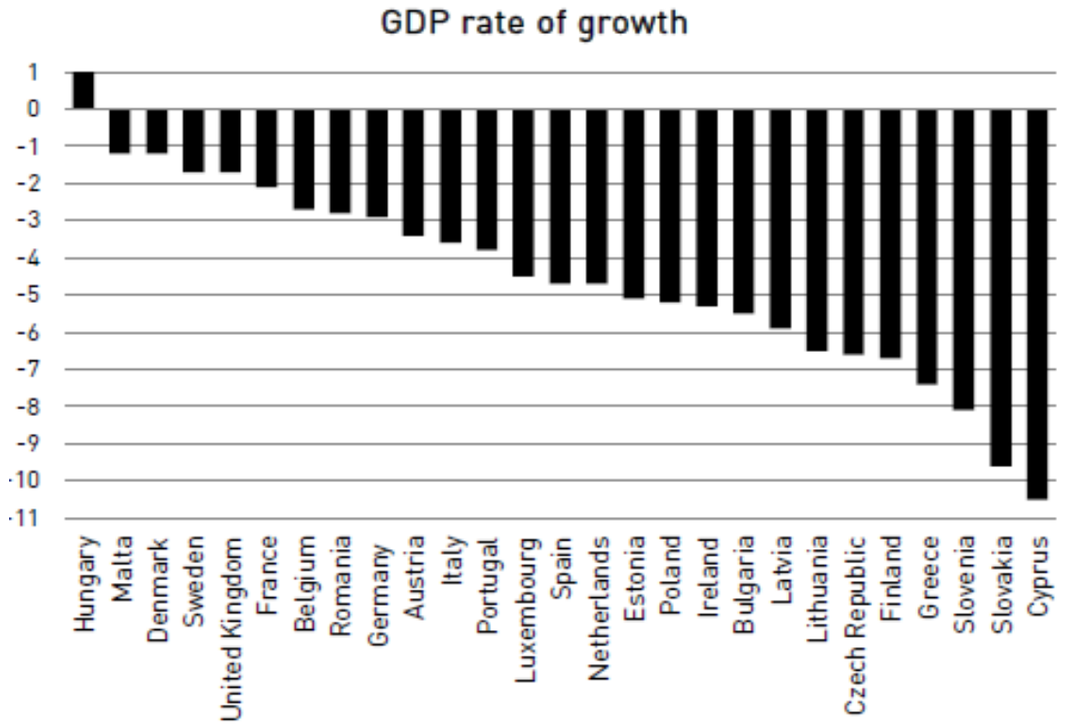
higher fall: Bulgaria (EU-10), Estonia (EMU-6), Belgium (EMU-11)

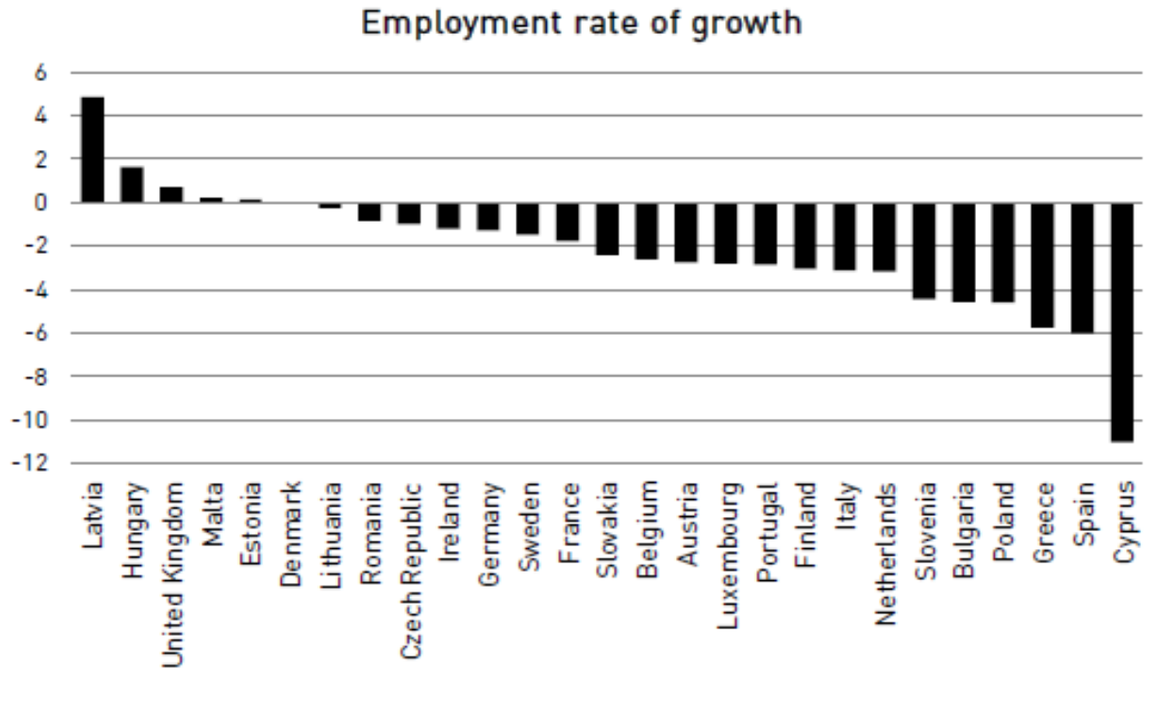
net financial assets

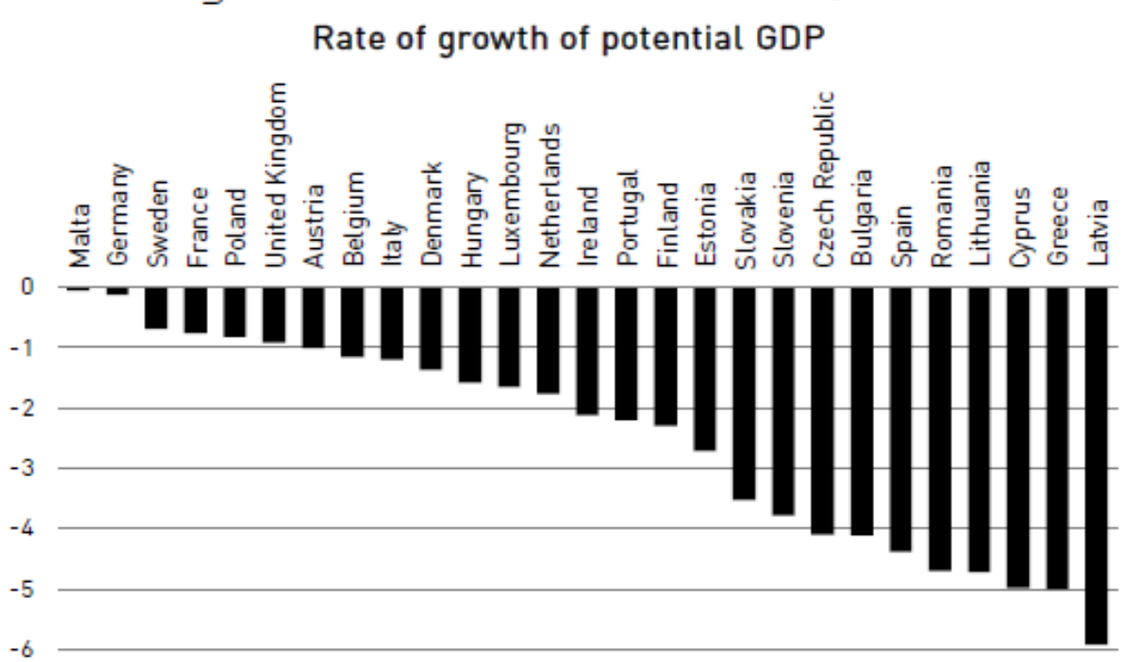
higher increase: Cyprus (EMU-6), Italy (EMU-11), Bulgaria (EU-10)

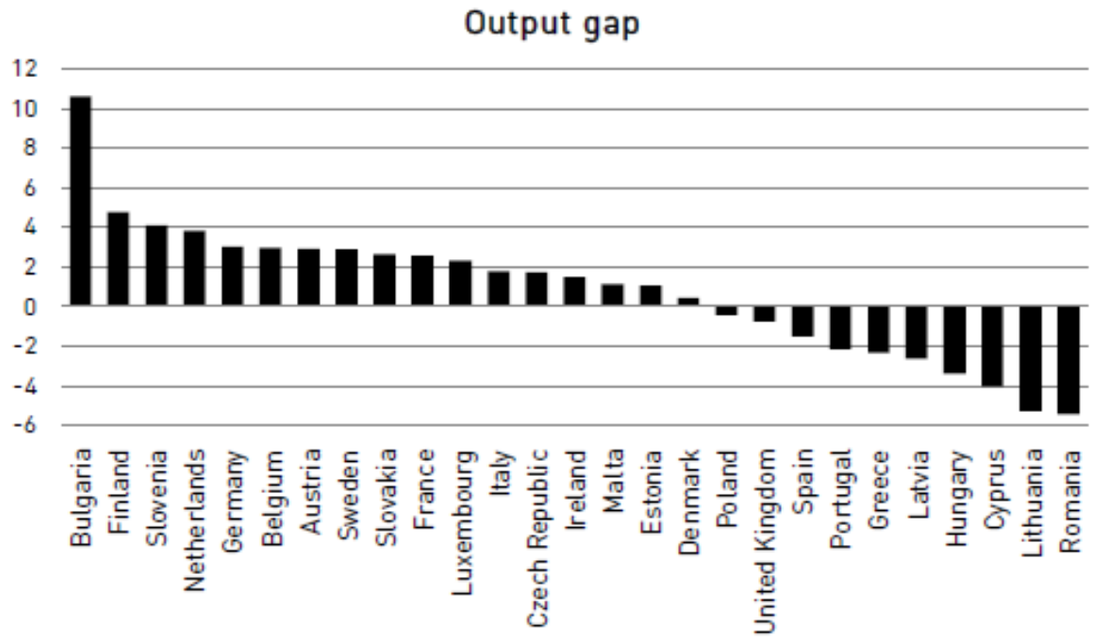
higher fall: Ireland, Luxembourg, Netherlands, Finland (EMU-11)

Variation of selected variables between 2007 and 2013

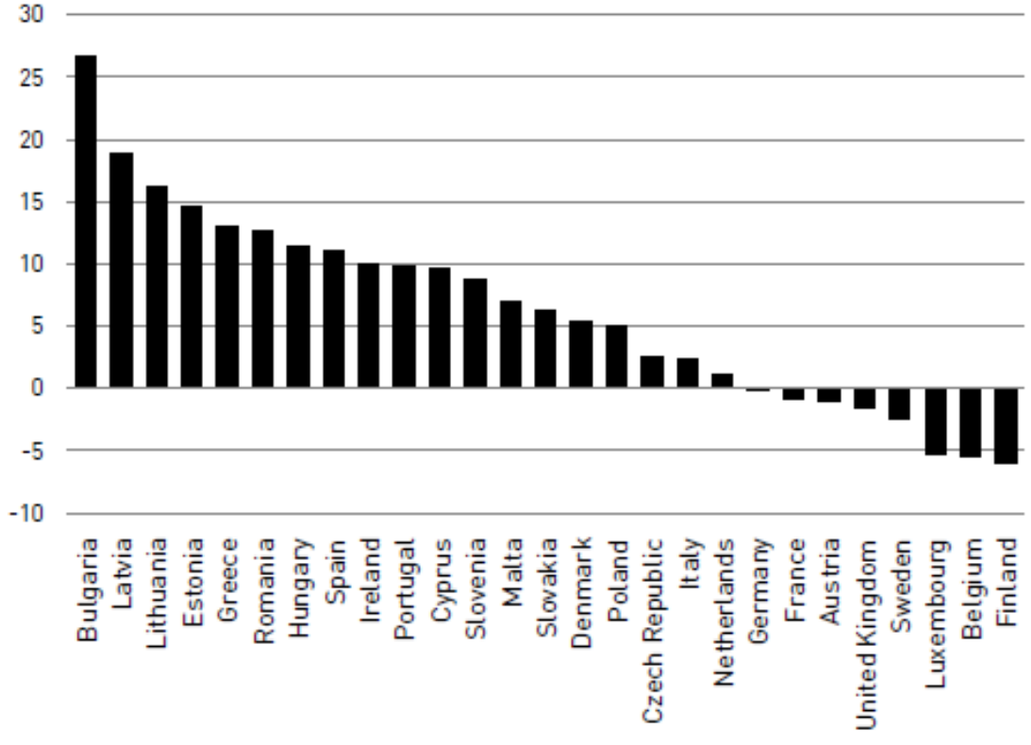




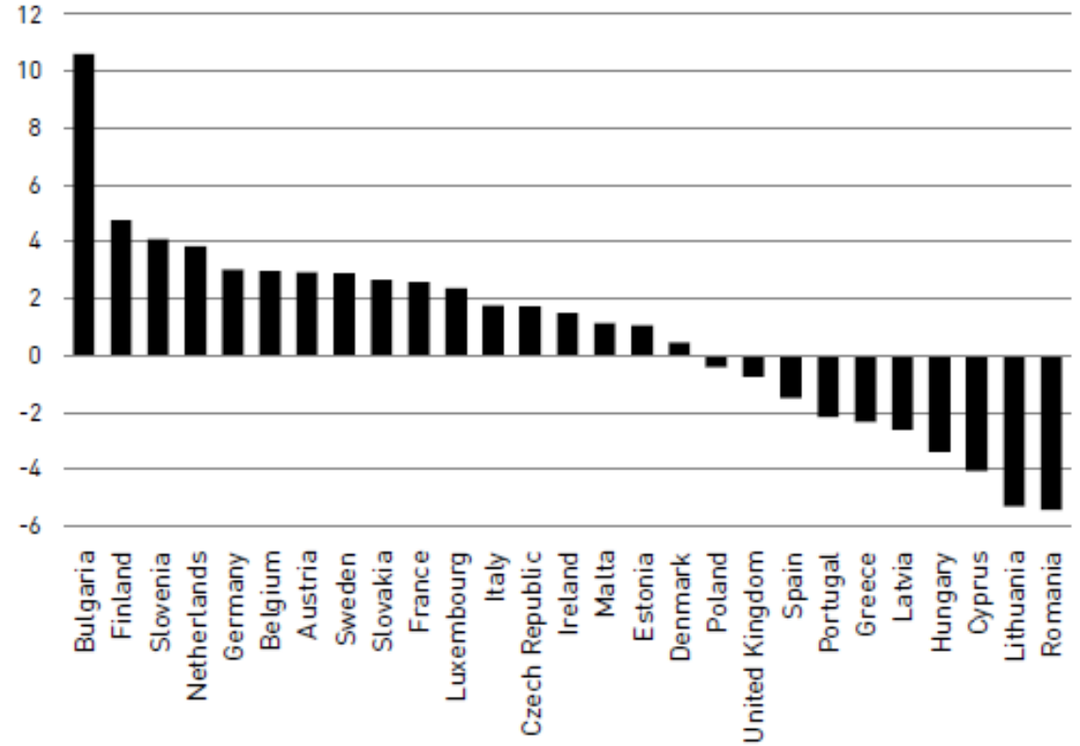




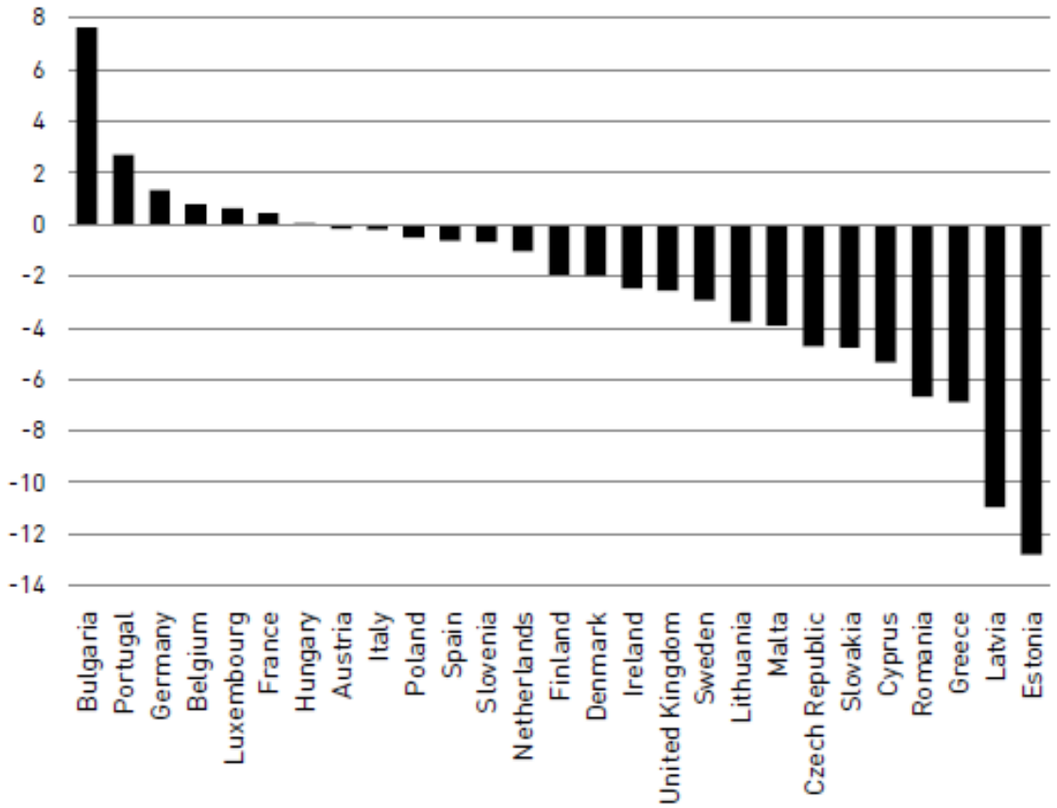
Balance on current transactions



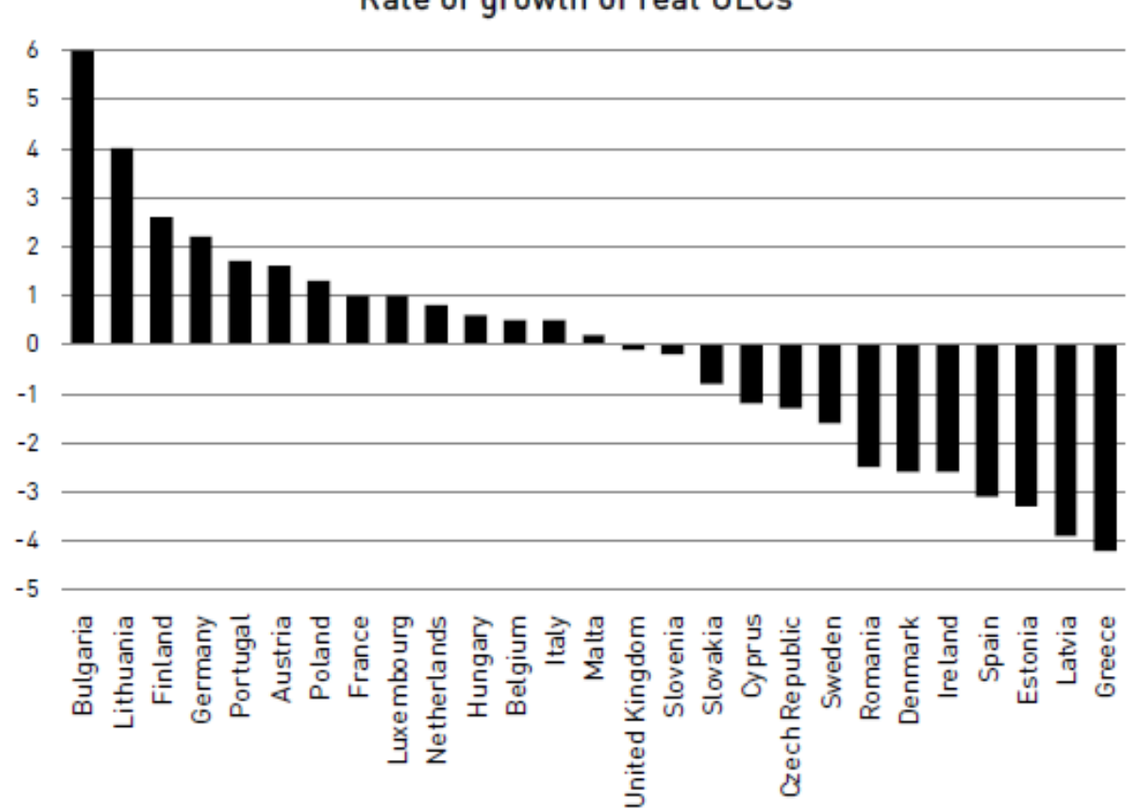
Adjusted wage share (%GDP)



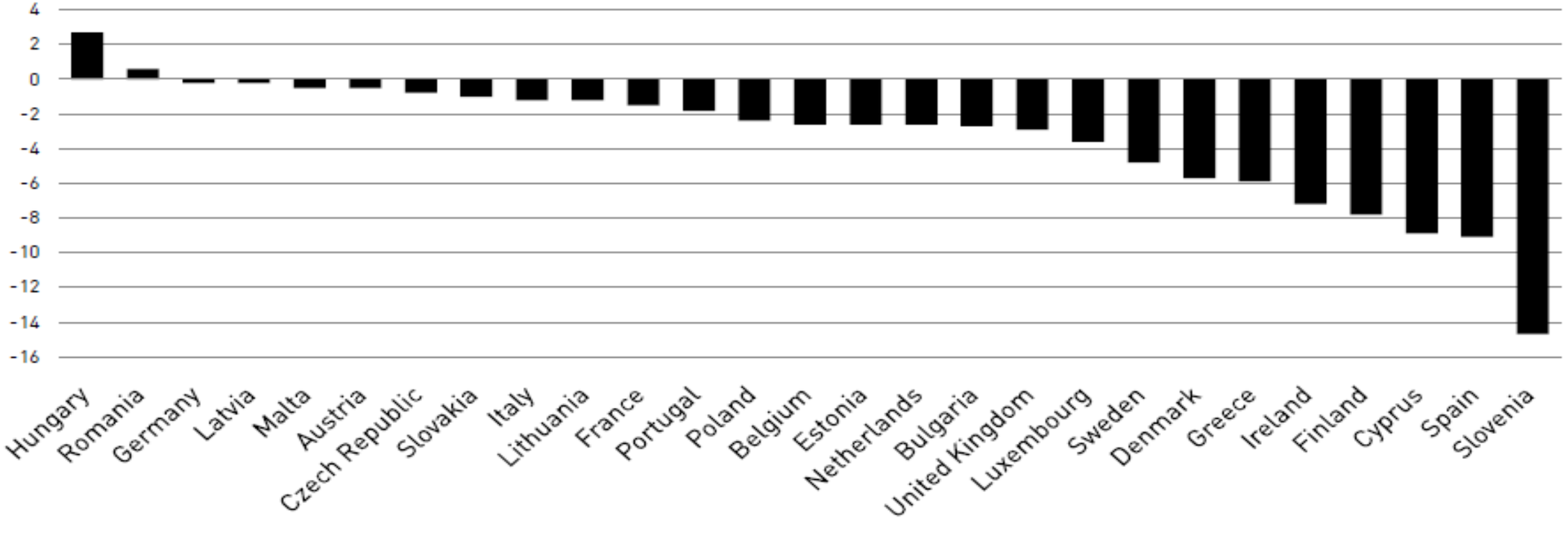
Rate of growth of real wages



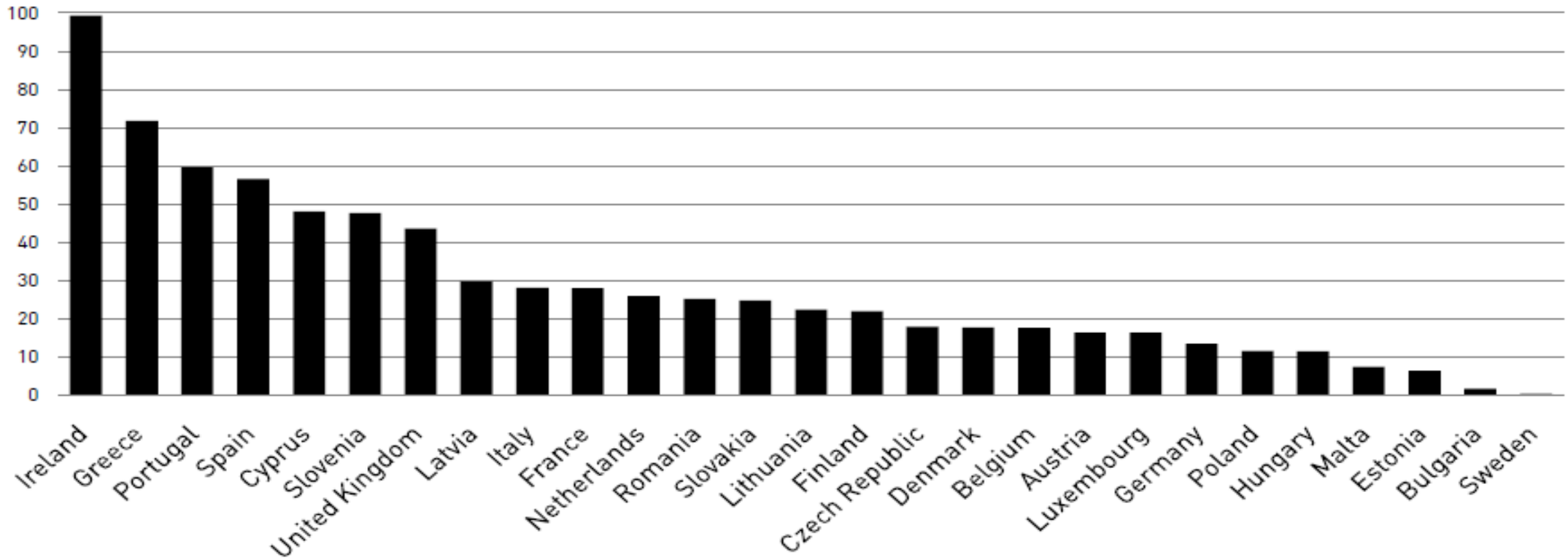
Rate of growth of real ULCs

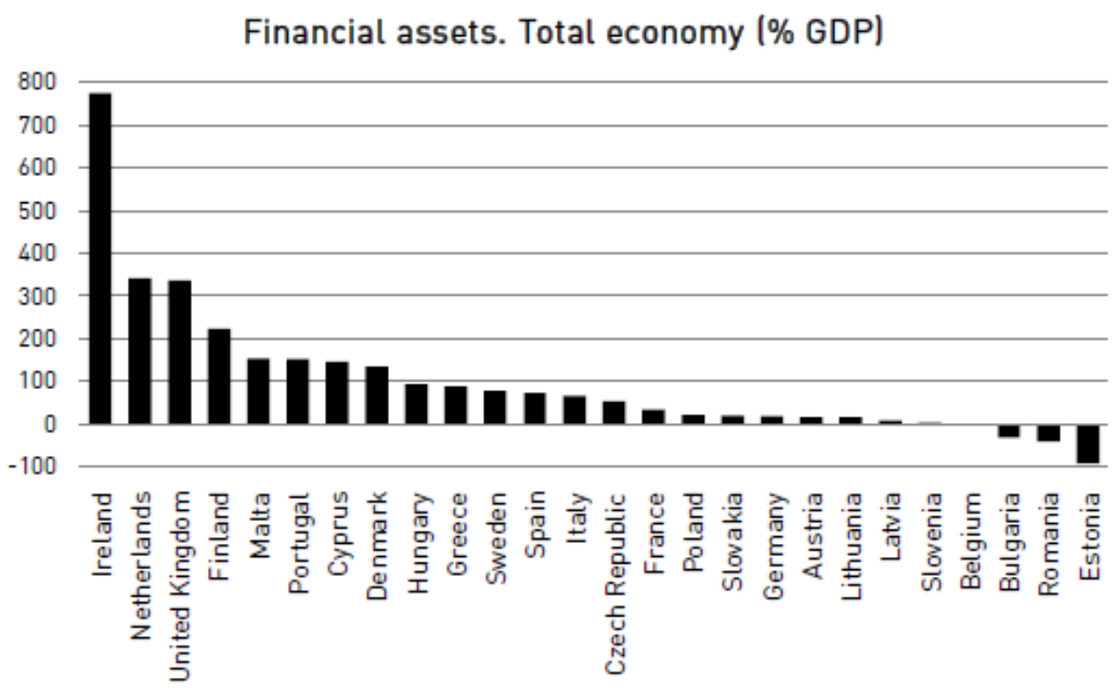


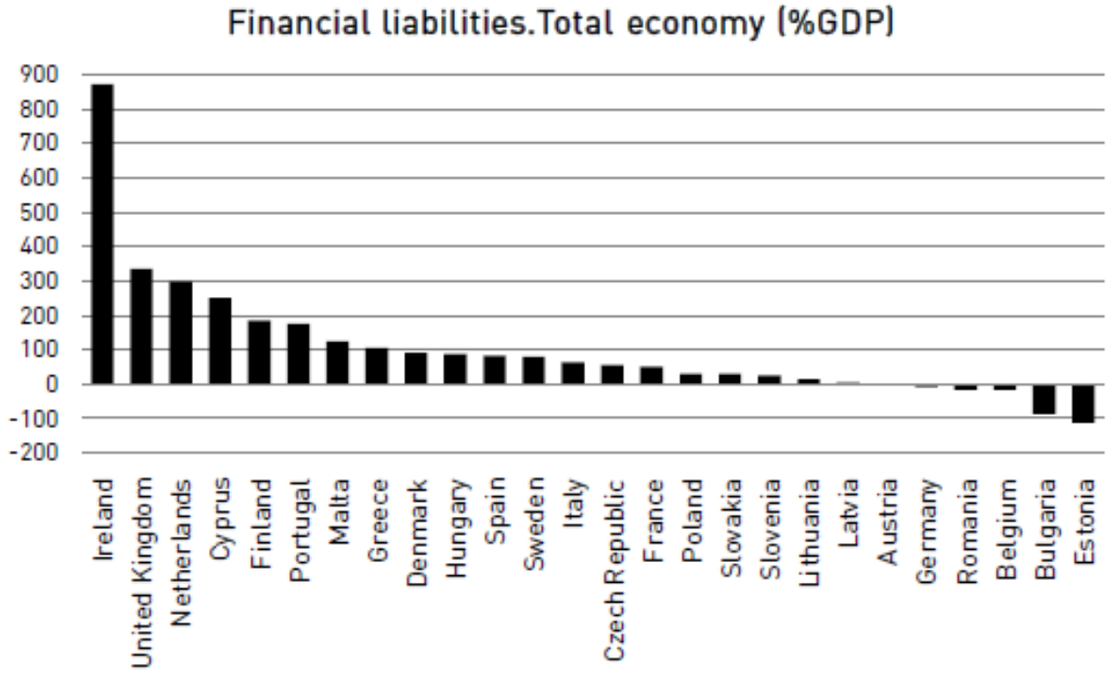
Public budget balance (%GDP)

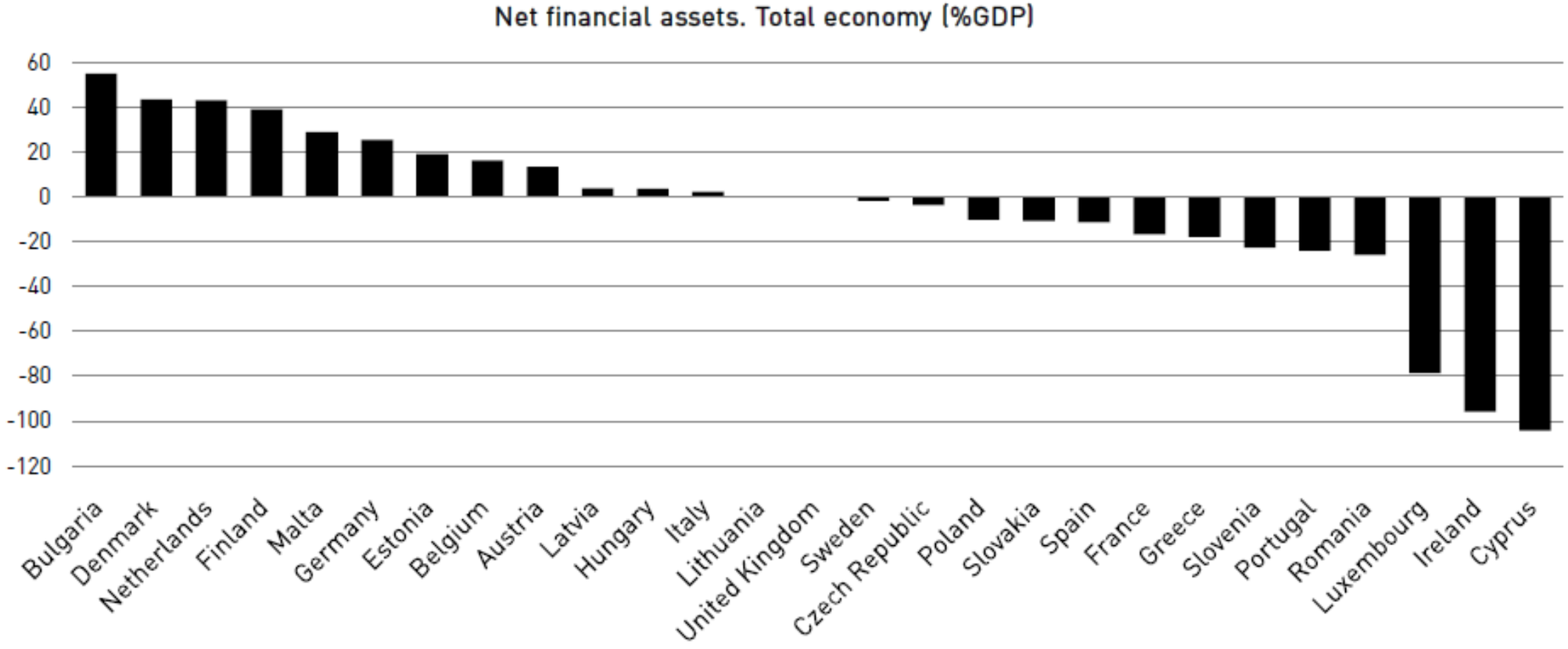


Public debt (% GDP)




Financial assets. Total economy (% GDP)
800
700
600
500
400
300
200
100
0
-100
Ireland
Netherlands
United Kingdom
Finland
Malta
Portugal
Cyprus
Denmark
Hungary
Greece
Sweden
Spain
Italy
Czech Republic
France
Poland
Slovakia
Germany
Austria
Lithuania
Latvia
Slovenia
Belgium
Bulgaria
Romania
Estonia


Financial liabilities.Total economy (%GDP)
900
800
700
600
500
400
300
200
100
0
-100
-200
Ireland
United Kingdom
Netherlands
Cyprus
Finland
Portugal
Malta
Greece
Denmark
Hungary
Spain
Sweden
Italy
Czech Republic
France
Poland
Slovakia
Slovenia
Lithuania
Latvia
Austria
Germany
Romania
Belgium
Bulgaria
Estonia


Net financial assets. Total economy (%GDP)
60
40
20
0
-20
-40
-60
-80
-100
-120
Bulgaria
Denmark
Netherlands
Finland
Malta
Germany
Estonia
Belgium
Austria
Latvia
Hungary
Italy
Lithuania
United Kingdom
Sweden
Czech Republic
Poland
Slovakia
Spain
France
Greece
Slovenia
Portugal
Romania
Luxembourg
Ireland
Cyprus

Data show that the highest negative impact has taken place in new eurozone countries (i.e., EMU-6 + Latvia and Lithuania)

Within EMU-6, only Malta present “good” performance

Within EMU-11, Spain is the economy with the worst economic performance in the crisis

Within EU-10, Poland, Denmark, Sweden and the UK show “good” performance

Impact of the crisis on the coherence of European Monetary Union

The objective of the study is to analyze whether (and how much) the economic and financial crisis has affected the coherence of EMU.

We have analyzed the evolution of the economic and financial variables before mentioned to detect:

- whether they are converging or diverging in EMU-17 countries
- the economic crisis has led to higher convergence-divergence in these variables

Analysis has been made based on:

- evolution of means
- evolution of standard deviations
- boxplots (detection of outliers)

Period: 1995-2013 (2012 for financial variables)

Economic activity

Real GDP (absolute size):

- Rising divergence, except in 2009 (due to the declining GDP in Germany and France)

GDP growth:

- no clear trend
- rising divergence in 2009 and 2011 due to Greece and Estonia

GDP per capita growth

- Divergence until 2007, divergence since 2008 (higher decline of GPD per capita in more developed EMU countries)

Potential GDP growth:

- Convergence since 1997 (lower potential GDP growth in Ireland), divergence since 2009

Output gap:

- Rising divergence since 1998 (when all data are available)
- Convergence between 2007 and 2010
- Divergence since 2011.
  - Outliers: Estonia (2009-2010), Spain (2011), Greece (2011-2013)

Labour market

Employment:

- Convergence since 1999
- Divergence since 2009, partially explained by outliers:
  - 2009: Estonia (-), Luxembourg (+)
  - 2011: Greece (-), Estonia(+)
  - 2012: Greece (-), Luxembourg (+)

Unemployment rate:

- Convergence until 2008 (with declining unemployment) and divergence since 2009 (with rising unemployment)
- Since 2008, only one outlier (Greece)

Rate of growth of real wages:

- Divergence increases between 2008 and 2010 (with declining wages), declines in 2011 and rises again in 2012-2013 (when wages decline started to moderate) [1013 outliers: Luxembourg (+) and Greece-Cyprus(-)

Real unit labor costs:

- Divergence increases in 2007-2008, in 2009 converge, and there is no change since 2010

Income distribution
Adjusted wage share:

- Convergence until 2007, divergence since 2009 (declining share)

GINI coefficient:

- Convergence until 2010, divergence since 2011 (rising Gini coefficient)

Inflation
CPI: Convergence

Balance on current account transactions
Divergence from 1999 to 2007, divergence since 2008 (declining deficits)

Public finances:
Public budget balance

- Convergence from 2000 to 2007 (declining deficits)
- Divergence from 2008 to 2010 (rising deficits) (mainly due to 1 outlier: Ireland)
- Convergence 2001-2012 (declining deficits)
- Divergence in 2013: due to two outliers (Greece and Slovenia)

Public debt:

- Convergence until 2004
- Divergence since 2005
- Rising public debt since 2007

Financial balance sheets of total economy

Financial assets (Luxembourg not included)

- Rising divergence
- Rising size of financial assets
- Outlier since 2008: Ireland (+)

Financial liabilities (Luxembourg not included)

- Rising divergence
- Rising size of financial assets
- Outlier since 2008: Ireland (+)

Net financial assets

- Rising divergence since 2002
- Net financial liabilities rose in 2003-2009, fell since 2010

Data show that before the crisis there was a convergence process in the macroeconomic (and financial) performance of euro economies.

After the onset of the crisis, there is strong diverging process.

Main question: does this divergence process have a cyclical or structural nature?

Objective of the analysis: to analyse the coherence (macroeconomic performance heterogeneity) of the Eurozone

We have analysed the evolution of the standard deviation of a number (14) of macroeconomic variables (σ-convergence)

The period analysed is 1995-2013

Countries analysed: 17 euro countries (Latvia and Lithuania excluded)

Unconditional σ-convergence:

$$StdDev_t = \beta_0 + \beta_1 trend + u_t$$

Conditional σ-convergence:

$$StdDev_t = \beta_0 + \beta_1 trend + X_t + u_t$$

(β_1<0: convergence; β_1>0: divergence)

Variables included in the model:

- Dummy for Recessions (0=boom; 1=recession: 1995-97, 2003, 2009-13). Data of Output Gap obtained in AMECO database
- Dummy for Current financial and economic Crisis (0=1995-2008; 1=2009-2013)

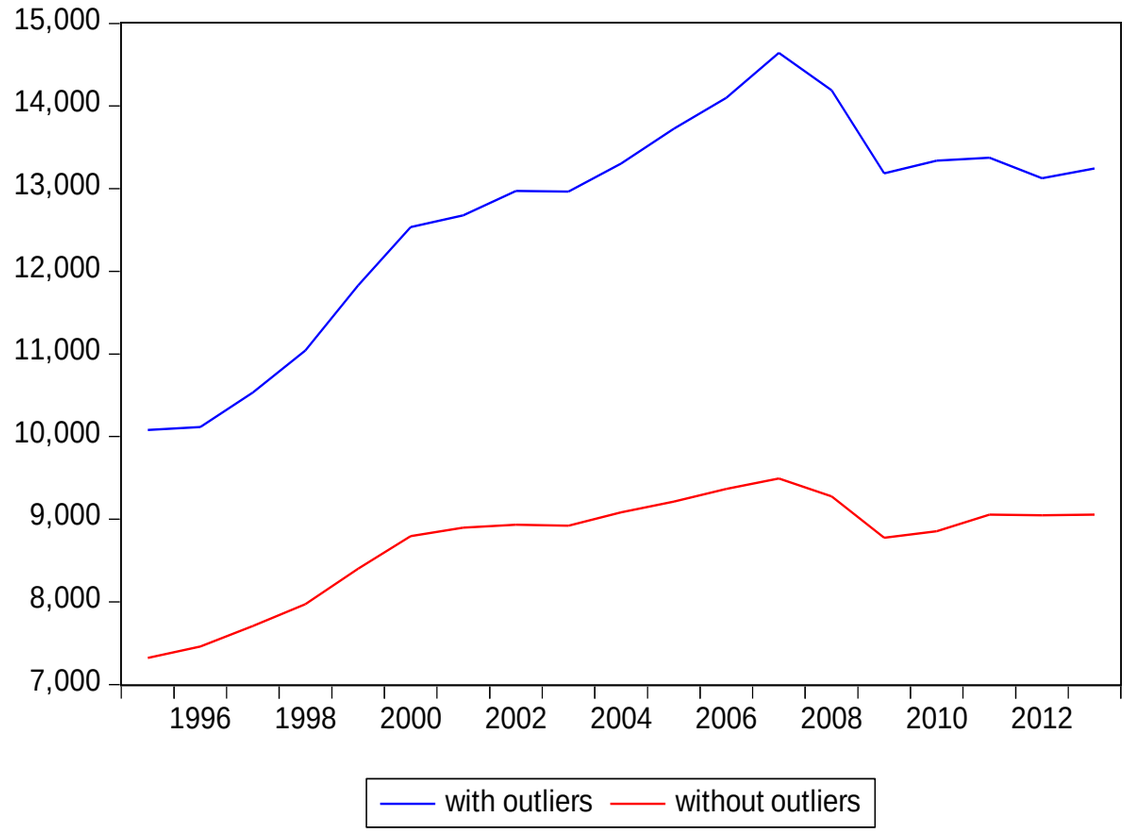
Analyses have been made:

- including all countries-years
- excluding extreme values: countries-years considered as outliers (determined by box-plots)

Is convergence process affected by business cycle-recessions, the current crisis or extreme values?

Real GDP per capita

Outliers: Luxembourg (1995-2013)
There is a trend to higher divergence (with and without outliers), conditional to crisis and recessions
Convergence takes place during recessions
The current crisis is leading to a convergence process



REAL GDP PER CAPITA
Dependent variable: Standard deviation of real GDP per capita
OLS

	Model 1 With Outliers	Model 2 Without Outliers	Model 3 With Outliers	Model 4 Without Outliers	Model 5 With Outliers	Model 6 Without Outliers	Model 7 Model With Outliers	Model 8 Without Outliers
C	20749 (0.409)	8792 (0.000)	10250 (0.000)	9383 (0.000)	11391 (0.000)	8147 (0.000)	10643 (0.000)	7834 (0.000)
Trend	-283.2 (0.719)	19.172 0.729	342.98 (0.000)	21.350 (0.841)	213.86 (0.000)	99.373 (0.000)	307.28 (0.000)	138.56 (0.000)
Dcrisis			-2484 (0.000)	-567.159 (0.002)			-1741.58 (0.002)	-730.59 (0.008)
Drecession					-1335 (0.000)	-686 (0.000)	-565.19 (0.034)	-363.19 (0.020)
AR(1)	0.919 (0.000)	1.152 (0.000)		0.855 (0.000)				
AR(2)		-0.384 (0.117)						
Mean dependent variable	12828	8873	12683	8794	12683	8717	12683	8717
R^2	0.910	0.896	0.917	0.954	0.876	0.877	0.935	0.923
F-statistic	76.325 (0.000)	37.375 (0.000)	88.665 (0.000)	97.071 (0.000)	56.770 (0.000)	57.160 (0.000)	72.885 (0.000)	60.043 (0.000)
D-W	1.498	1.806	1.148	1.517	1.314	1.493	1.451	1.359
Jarque-Bera	3.002 0.222	1.875 (0.395)	0.952 (0.621)	0.061 (0.969)	1.332 (0.513)	8.661 (0.013)	0.930 (0.627)	0.049 (0.975)
Breusch-Pagan-Godfrey	0.206 0.655	0.990 (0.335)	2.545 (0.109)	0.734 (0.496)	0.071 (0.931)	0.348 (0.710)	1.846 (0.178)	0.721 (0.504)
Breusch-Godfrey LM	1.099 (0.362)	2.827 (0.102)	1.356 (0.289)	1.011 (0.392)	0.876 (0.438)	0.524 (0.602)	0.349 (0.711)	0.074 (0.526)

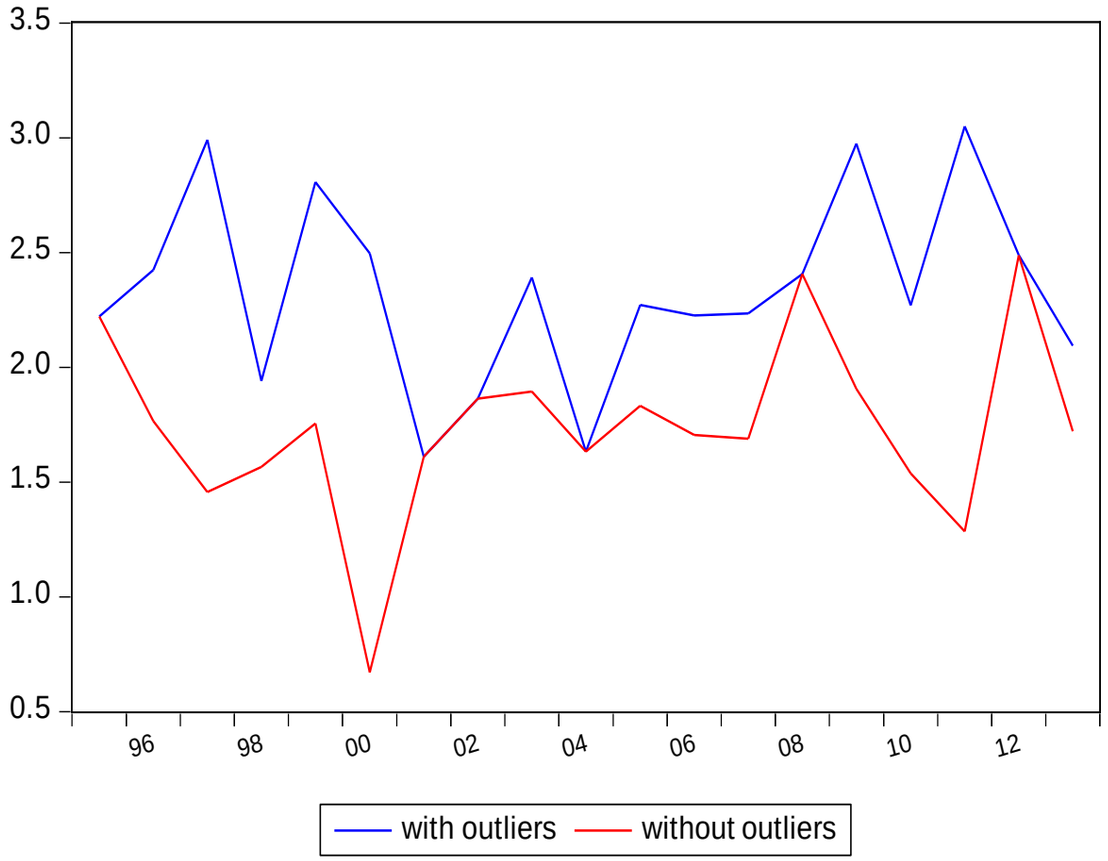
p-values in parenthesis

Real GDP rate of growth

Outliers: IE(96, 98, 99, 00), EE (97, 00, 03, 05, 06, 09,11), Lux (99,00), SK (00, 07), GR (10,11), CY (13)

Model 8 shows a significant divergence process, when outliers are excluded and we include in the model the existence of recessions and the current crisis

Recessions increase the divergence, but the crisis leads to convergence

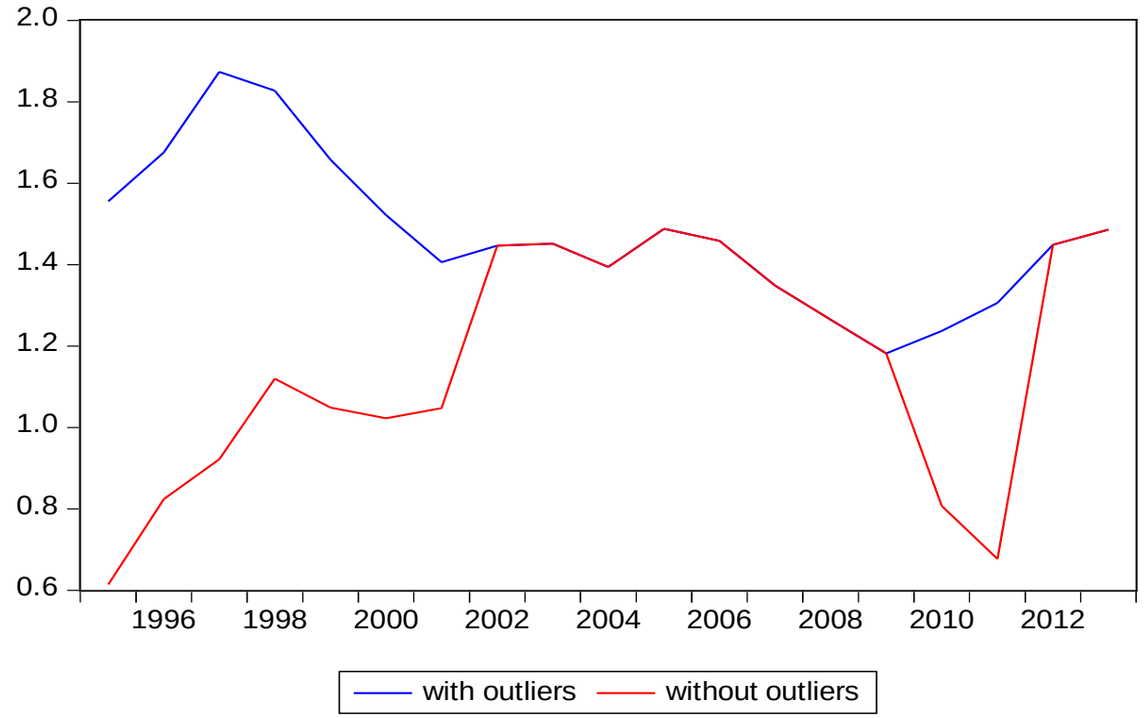


	Model 1 With Outliers	Model 2 Without Outliers	Model 3 With Outliers	Model 4 Without Outliers	Model 5 With Outliers	Model 6 Without Outliers	Model 7 Model With Outliers	Model 8 Without Outliers
C	2.262 (0.000)	1.619 (0.000)	2.432 (0.000)	1.580 (0.000)	2.137 (0.000)	1.583 (0.000)	2.212 (0.000)	1.026 (0.000)
Trend	0.008 (0.650)	0.013 (0.447)	-0.027 (0.297)	0.021 (0.437)	0.001 (0.935)	0.001 (0.534)	-0.007 (0.803)	0.072 (0.001)
Dcrisis			0.589 (0.086)	-0.134 (0.692)			0.174 (0.730)	-1.069 (0.000)
Drecession					0.393 (0.045)	0.111 (0.568)	0.316 (0.289)	0.689 (0.000)
AR(1)								-0.613 (0.009)
AR(2)								-0.786 (0.002)
Mean dependent variable	2.336	1.737	2.336	1.737	2.336	1.737	2.336	1.706
R^2	0.012	0.034	0.182	0.044	0.237	0.054	0.243	0.678
F-statistic	0.212 (0.650)	0.064 (0.447)	1.787 (0.199)	0.368 (0.697)	2.489 (0.114)	0.460 (0.639)	1.609 (0.229)	4.633 (0.016)
D-W	2.052	2.043	2.343	2.024	1.959	2.130	2.046	2.138
Jarque-Bera	0.352 (0.838)	1.581 (0.453)	1.075 (0.584)	1.611 (0.446)	1.069 (0.585)	1.196 (0.549)	1.150 (0.562)	0.891 (0.640)
Breusch-Pagan-Godfrey	0.158 (0.695)	0.002 (0.963)	0.311 (0.736)	0.119 (0.887)	0.075 (0.927)	0.030 (0.969)	1.184 (0.349)	3.917 (0.034)
Breusch-Godfrey LM	0.054 (0.946)	0.571 (0.576)	0.792 (0.471)	0.609 (0.557)	0.067 (0.934)	0.840 (0.452)	0.310 (0.738)	0.187 (0.832)

p-values in parenthesis

Potential GDP rate of growth

Outliers: IE(95-01), SK (10-11), GR (10,11)
With Outliers: Unconditional Convergence. Recessions and current crisis are not significant.
Without Outliers: Divergence. Recessions and Crisis lead to convergence



POTENTIAL GDP GROWTH
Dependent variable: Standard deviation of potential GDP rate of growth
OLS

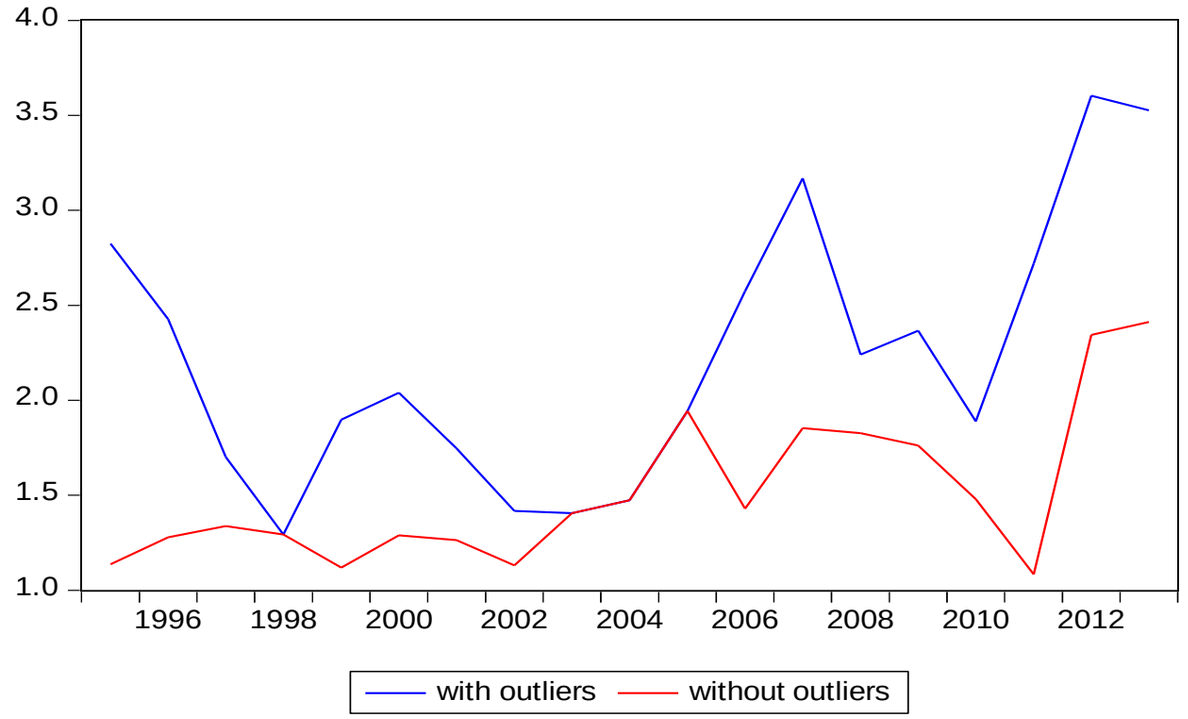
	Model 1 With Outliers	Model 2 Without Outliers	Model 3 With Outliers #	Model 4 Without Outliers #	Model 5 With Outliers #	Model 6 Without Outliers #	Model 7 Model With Outliers #	Model 8 Without Outliers #
C	1.697 (0.000)	1.158 (0.002)	1.700 (0.000)	0.797 (0.000)	1.697 (0.000)	1.059 (0.000)	1.675 (0.000)	0.804 (0.000)
Trend	-0.025 (0.000)	0.008 (0.758)	-0.025 (0.006)	0.058 (0.000)	-0.027 (0.000)	0.255 (0.018)	-0.024 (0.006)	0.057 (0.002)
Dcrisis			0.005 (0.942)	-0.605 (0.006)			-0.050 (0.570)	-0.593 (0.045)
Drecession					0.042 0.216	-0.272 (0.021)	0.052 (0.178)	-0.009 (0.9371)
AR(1)	1.148 (0.000)	0.547 (0.084)	1.141 (0.000)		1.107 (0.000)		1.160 (0.000)	
AR(2)	-0.793 (0.001)		-0.793 (0.002)		-0.813 (0.000)		-0.821 (0.001)	
Mean dependent variable	1.458	1.160	1.458	1.160	1.458	1.160	1.458	1.160
R^2	0.875	0.386	0.875	0.530	0.890	0.382	0.894	0.530
F-statistic	30.510 (0.000)	4.726 (0.025)	21.131 (0.000)	9.050 (0.002)	24.520 (0.000)	4.962 (0.021)	18.588 (0.000)	5.659 (0.008)
Wald F-statistics		0.074 (0.788)			11.317 (0.001)		5.540 (0.014)	
D-W	2.205	1.693	2.223	1.686	2.366	1.269	2.199	1.680
Jarque-Bera	1.392 (0.498)	0.513 (0.773)	1.373 (0.503)	1.032 (0.596)	0.716 (0.698)	0.324 (0.850)	0.543 (0.761)	1.015 (0.601)
Breusch-Pagan-Godfrey	0.068 (0.797)	0.752 (0.398)	0.057 (0.944)	5.867 (0.012)	3.357 (0.060)	3.357 (0.060)	5.325 (0.013)	3.871 (0.031)
Breusch-Godfrey LM	0.657 (0.537)	1.561 (0.246)	0.667 0.534	2.116 (0.157)	2.045 (0.166)	2.045 (0.166)	0.331 (0.726)	2.301 (0.139)

p-values in parenthesis
White Heteroskedasticity-consistent standard errors and covariance

Output gap

Outliers: EE(95, 96, 99, 06, 07, 09, 10), SK (97, 00, 01, 02, 03, 07), PT (99), LUX (00), SP (11), GR (11, 12, 13)

There is a significant divergence
Crisis and Recessions are not significant



OUTPUT GAP
Dependent variable: Standard deviation of Output Gap
OLS

	Model 1 With Outliers	Model 2 Without Outliers #	Model 3 With Outliers	Model 4 Without Outliers #	Model 5 With Outliers #	Model 6 Without Outliers #	Model 7 Model With Outliers	Model 8 Without Outliers #
C	0.832 (0.243)	1.083 (0.000)	0.795 (0.323)	1.043 (0.000)	0.838 (0.260)	1.077 (0.000)	0.783 (0.344)	0.912 (0.000)
Trend	0.131 (0.032)	0.048 (0.005)	0.136 (0.081)	0.056 (0.000)	0.130 (0.051)	0.048 (0.003)	0.137 (0.090)	0.068 (0.000)
Dcrisis			-0.058 (0.914)	-0.136 (0.575)			-0.108 (0.873)	-0.383 (0.232)
Drecession					0.016 (0.954)	0.018 (0.836)	0.047 (0.895)	0.158 (0.217)
AR(1)					0.018 (0.016)		0.542 (0.019)	
Mean dependent variable	2.190	1.519	2.190	1.519	2.190	1.519	2.190	1.519
R^2	0.639	0.468	0.639	0.478	0.639	0.468	0.640	0.501
F-statistic	13.309 (0.000)	14.964 (0.000)	8.292 (0.002)	7.331 (0.005)	8.284 (0.002)	7.057 (0.006)	5.787 (0.006)	5.037 (0.013)
Wald F-statistics		10.111 (0.005)		11.987 (0.000)		8.771 (0.002)		9.267 (0.001)
D-W	1.793	1.716	1.836	1.776	1.774	1.741	1.816	1.806
Jarque-Bera	0.746 (0.688)	2.229 (0.327)	0.736 (0.691)	1.044 (0.593)	0.747 (0.688)	2.570 (0.276)	0.733 (0.692)	1.547 (0.461)
Breusch-Pagan-Godfrey	2.100 0.166	7.338 (0.014)	1.175 (0.305)	5.795 (0.012)	1.126 (0.350)	4.382 (0.030)	0.761 (0.534)	3.574 (0.039)
Breusch-Godfrey LM	0.574 (0.576)	1.363 (0.285)	0.504 (0.616)	1.414 (0.275)	0.568 (0.580)	1.316 (0.299)	0.476 (0.630)	2.261 (0.143)

p-values in parenthesis

White Heteroskedasticity-consistent standard errors and covariance

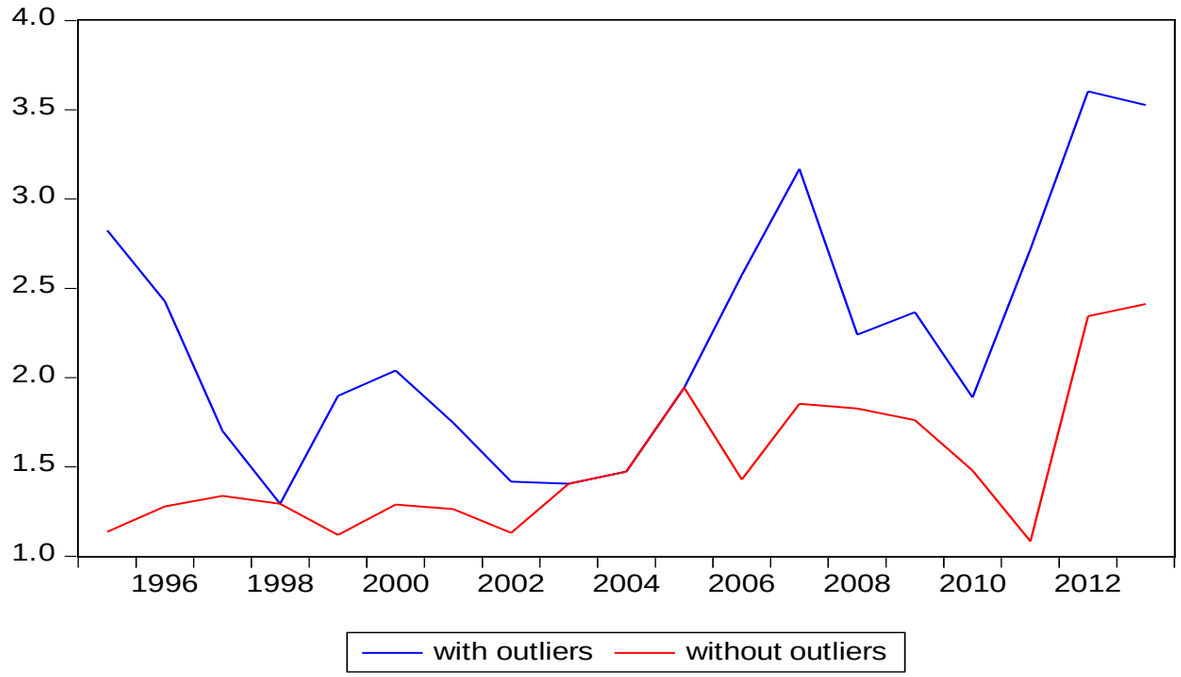
Unemployment rate

Outliers: Spain (95-97), Slovakia (00-05), Greece (13)

Convergence process when current crisis is included (conditional convergence)

Current crisis leads to a strong divergence process

Results do not depend on the inclusion of outliers



UNEMPLOYMENT RATE
Dependent variable: Standard deviation of unemployment rate
OLS

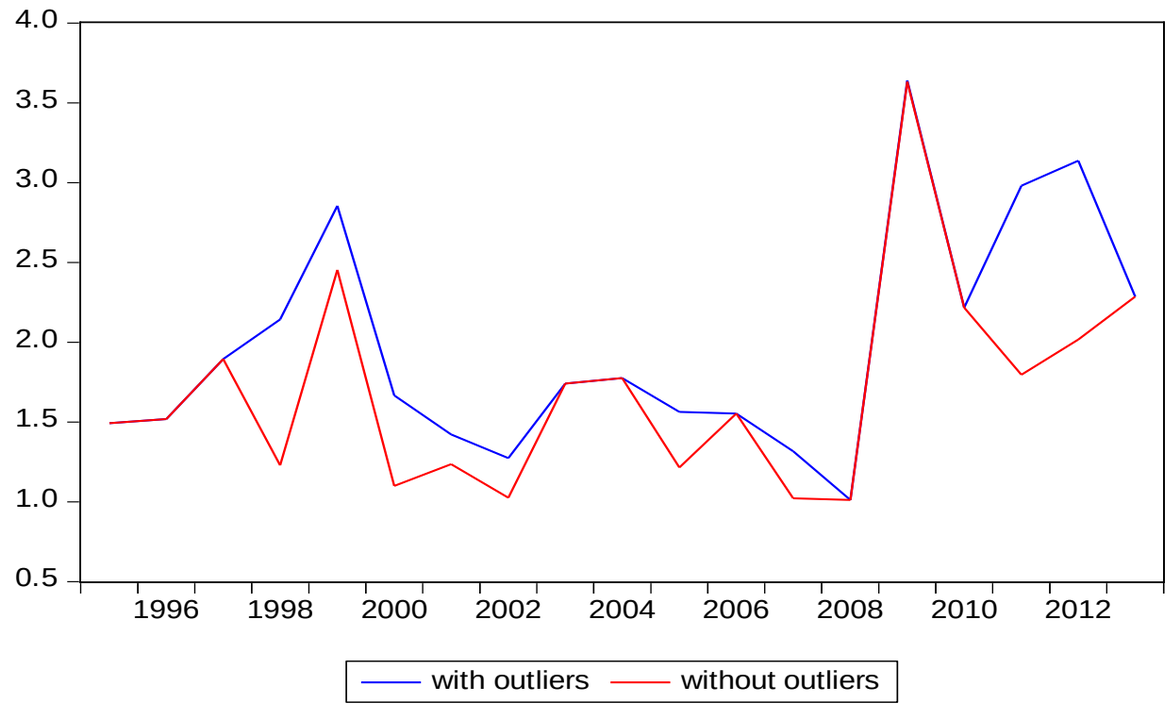
	Model 1 With Outliers #	Model 2 Without Outliers #	Model 3 With Outliers #	Model 4 Without Outliers #	Model 5 With Outliers #	Model 6 Without Outliers	Model 7 Model With Outliers #	Model 8 Without Outliers #
C	3.789 (0.000)	2.782 (0.001)	4.673 (0.000)	3.668 (0.000)	3.340 (0.000)	-2.236 (0.818)	4.554 (0.000)	3.926 (0.000)
Trend	0.029 (0.719)	0.077 (0.281)	-0.158 (0.001)	-0.110 (0.001)	0.004 (0.937)	0.388 (0.395)	-0.147 (0.017)	-0.134 (0.007)
Dcrisis			3.052 (0.001)	3.060 (0.000)			2.827 (0.010)	3.546 (0.001)
Drecession					1.421 (0.025)	0.075 (0.829)	0.170 (0.650)	-0.370 (0.291)
AR(1)						0.870 (0.000)		
Mean dependent variable	4.054	3.478	4.054	3.478	4.054	3.462	4.054	3.478
R^2	0.019	0.138	0.575	0.724	0.377	0.777	0.577	0.734
F-statistic	0.332 (0.571	2.736 (0.116)	10.838 (0.001)	21.020 (0.000)	4.854 (0.022)	16.267 (0.000)	6.834 (0.004)	13.866 (0.000)
Wald F-statistics	0.133 (0.719)	1.235 (0.281)	11.387 (0.000)	13.487 (0.000)	3.125 (0.071)		8.868 (0.001)	8.665 (0.001)
D-W	0.262	0.320	0.645	1.068	0.664	1.681	0.645	1.129
Jarque-Bera	0.128 (0.937)	0.794 (0.672)	0.969 (0.615)	0.986 (0.610)	0.832 (0.659)	1.431 (0.488)	0.771 (0.679)	2.623 (0.269)
Breusch-Pagan-Godfrey	7.566 (0.013)	6.445 (0.021)	8.127 (0.003)	5.255 (0.017)	3.337 (0.061)	1.789 (0.201)	5.022 (0.013)	3.991 (0.028)
Breusch-Godfrey LM	23.615 (0.000)	16.145 (0.000)	6.313 (0.011)	2.425 (0.124)	5.256 (0.019)	0.198 (0.823)	6.037 (0.001)	1.860 (0.194)

p-values in parenthesis

HAC standard errors and covariance

Employment growth

Outliers: IE (98, 99, 09), EE (99, 11), SP (00, 02, 05), SK (00, 09), CY (01, 07)), GR (11-12), LUX (12)
Conditional (to crisis and recessions)
Convergence process takes place with outliers (without outliers trend is not significant)
Current crisis leads to a strong divergence process (with and without outliers)



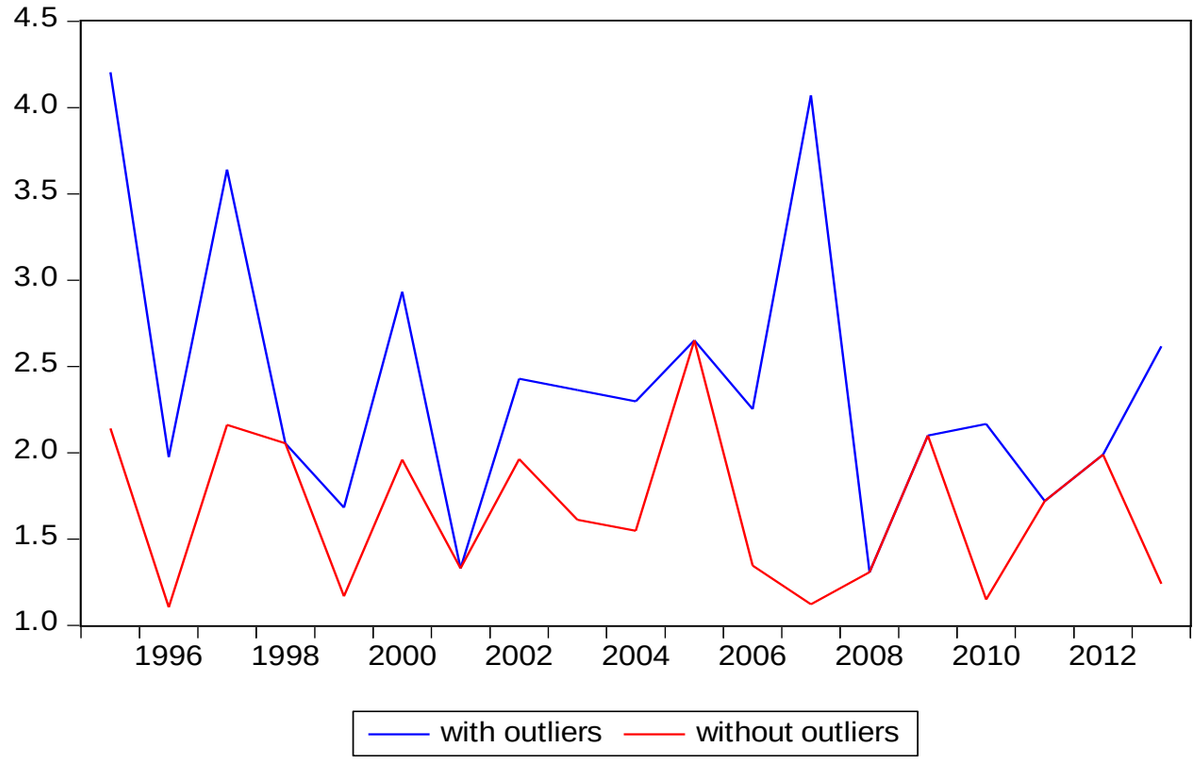
EMPLOYMENT GROWTH
Dependent variable: Employment rate of growth
OLS

	Model 1 With Outliers	Model 2 Without Outliers	Model 3 With Outliers	Model 4 Without Outliers	Model 5 With Outliers	Model 6 Without Outliers	Model 7 Model With Outliers	Model 8 Without Outliers
C	1.506 (0.000)	1.350 (0.001)	1.993 (0.000)	1.752 (0.000)	1.324 (0.000)	1.146 (0.000)	2.272 (0.000)	1.697 (0.000)
Trend	0.051 (0.083)	0.038 (0.1653)	-0.051 (0.102)	-0.046 (0.156)	0.041 (0.136)	0.026 (0.268)	-0.076 (0.048)	-0.042 (0.3081)
Dcrisis			1.683 (0.000)	1.388 (0.002)			2.208 (0.001)	1.284 (0.058)
Drecession					0.577 (0.065)	0.647 (0.023)	-0.399 0.239	0.078 (0.831)
Mean dependent variable	1.972	1.695	1.972	1.695	1.972	1.695	1.972	1.695
R^2	0.165	0.110	0.636	0.500	0.329	0.361	0.669	0.501
F-statistic	3.371 (0.083)	2.101 (0.165)	13.986 (0.000)	8.008 (0.003)	3.938 (0.040)	4.537 (0.027)	10.114 (0.000)	5.036 (0.013)
D-W	1.667	2.123	2.031	2.375	1.766	2.247	2.344	2.349
Jarque-Bera	0.816 (0.664)	6.708 (0.034)	1.353 (0.508)	4.223 (0.121)	3.073 (0.215)	15.773 (0.000)	0.579 (0.748)	5.074 (0.079)
Breusch-Pagan-Godfrey	1.482 (0.240)	0.586 (0.454)	1.244 (0.314)	1.389 (0.227)	0.040 (0.960)	0.080 (0.922)	1.045 (0.401)	1.572 (0.237)
Breusch-Godfrey LM	0.281 (0.758)	0.210 (0.812)	0.311 (0.737)	0.629 (0.547)	0.089 (0.914)	0.769 (0.482)	1.270 (0.313)	0.645 (0.540)

p-values in parenthesis

Real wages rate of growth

Outliers: EE (95, 97, 00, 03, 04, 06, 07, 13), SK (96, 97, 99, 07, 10), GR (02, 10, 13), CY (13)
No trend detected
Current crisis and recessions are significant when outliers are included: recessions lead to divergence, but current crisis leads to convergence



REAL WAGES GROWTH
Dependent variable: Standard deviation of real wages rate of growth
OLS

	Model 1 With Outliers	Model 2 Without Outliers	Model 3 With Outliers	Model 4 Without Outliers	Model 5 With Outliers	Model 6 Without Outliers	Model 7 Model With Outliers	Model 8 Without Outliers
C	2.775 (0.000)	1.730 (0.000)	2.769 (0.000)	1.765 (0.000)	2.672 (0.000)	1.789 (0.000)	1.921 (0.000)	1.740 (0.000)
Trend	-0.040 (0.243	-0.008 (0.562	-0.039 (0.474)	-0.014 (0.520)	-0.046 (0.198)	-0.018 0.118	0.049 (0.183)	-0.012 (0.542)
Dcrisis			-0.020 (0.995)	0.106 (0.706)			-1.492 (0.024)	-0.113 (0.768)
Drecession					0.327 (0.400)	0.135 (0.351)	0.795 (0.046)	0.198 (0.454)
AR(1)		-0.432 (0.081)		-0.434 (0.093)		-0.536 (0.047)	-0.571 (0.011)	-0.538 (0.055)
AR(2)						-0.443 (0.095)		-0.457 (0.097)
Mean dependent variable	2.409	1.640	2.409	1.640	2.409	1.671	2.309	1.671
R^2	0.079	0.195	0.079	0.204	0.120	0.407	0.445	0.412
F-statistic	1.459 (0.243)	1.825 (0.195)	0.687 (0.517)	1.196 (0.346)	1.092 (0.359)	2.066 (0.148)	2.615 (0.048)	1.545 (0.253)
D-W	2.561	2.169	2.565	2.149	2.572	2.162	2.210	2.184
Jarque-Bera	1.411 (0.493)	0.825 (0.661)	1.381 (0.501)	1.393 (0.498)	2.375 (0.304)	3.899 (0.142)	3.845 (0.146)	2.476 (0.289)
Breusch-Pagan-Godfrey	1.343 (0.262)	0.004 (0.941)	1.094 (0.358)	0.699 (0.512)	0.372 (0.695)	1.171 (0.338)	0.833 (0.497)	1.108 (0.380)
Breusch-Godfrey LM	1.408 (0.275)	1.741 (0.213)	1.455 (0.270)	1.948 (0.185)	1.185 (0.334)	0.053 (0.948)	0.202 (0.819)	0.213 (0.811)

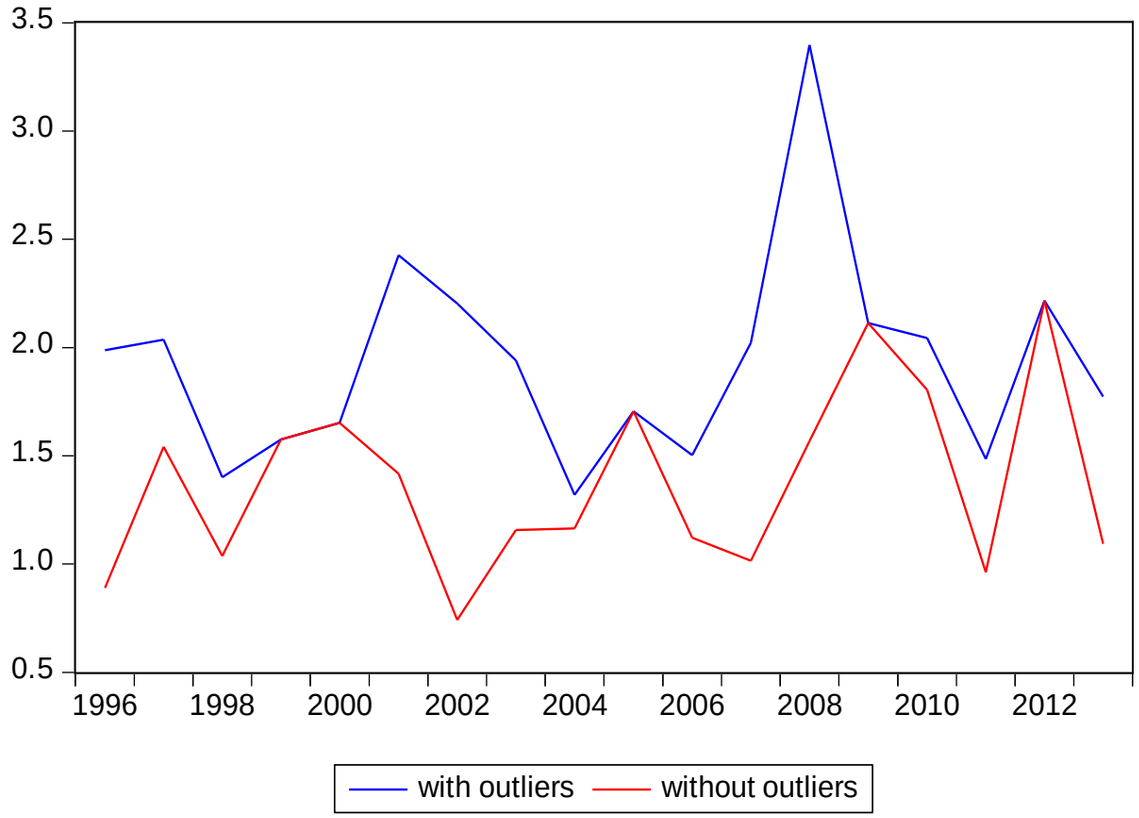
p-values in parenthesis

Real ULCs rate of growth

Outliers: SK (96, 97) SL (96), EE (96, 07, 08, 10, 11), IT (98), LUX (01, 03, 06, 08), MT (01), GR (02, 13), CY (02, 03), IE (02, 04, 07, 08, 11)

No trend detected

Current crisis leads to divergence, but only when recessions are included and outliers excluded



REAL ULCS GROWTH
Dependent variable: Standard deviation of real ULCs rate of growth
OLS

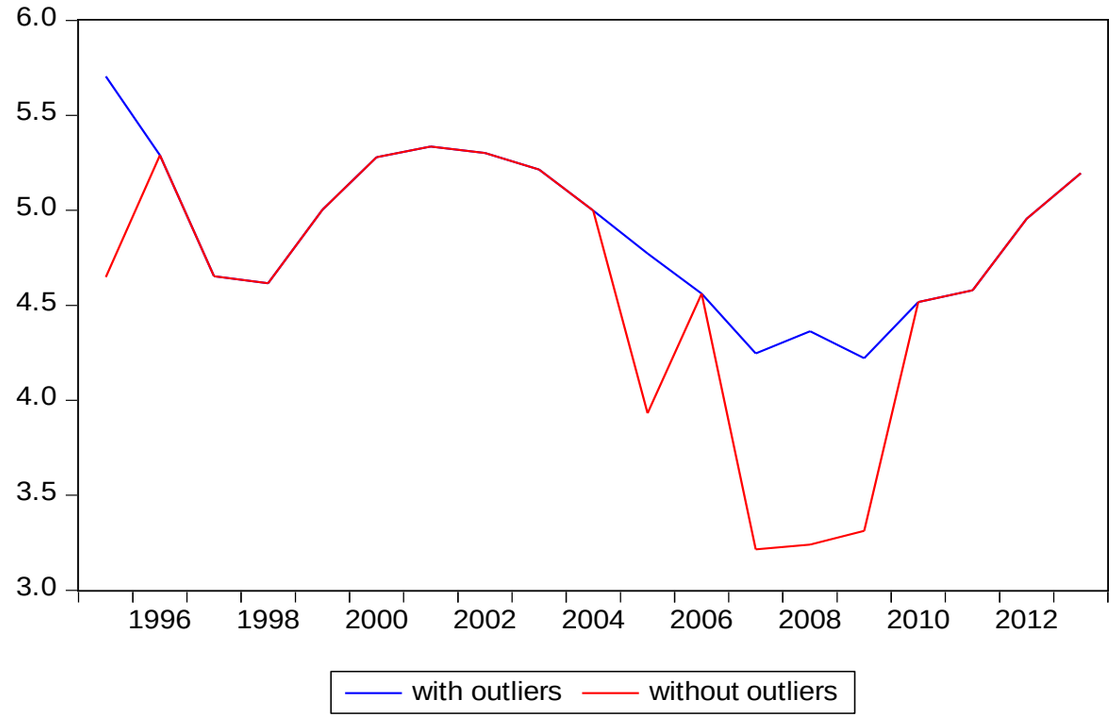
	Model 1 With Outliers	Model 2 Without Outliers #	Model 3 With Outliers #	Model 4 Without Outliers #	Model 5 With Outliers	Model 6 Without Outliers #	Model 7 Model With Outliers	Model 8 Without Outliers
C	1.791 (0.000)	1.159 (0.000)	1.661 (0.000)	1.301 (0.000)	1.795 (0.000)	1.143 (0.000)	1.479 (0.000)	1.535 (0.000)
Trend	0.014 (0.512)	0.022 (0.287)	0.039 (0.431)	-0.003 (0.887)	0.015 (0.529)	0.019 (0.353)	0.055 (0.198)	-0.024 (0.340)
Dcrisis			-0.362 (0.529)	0.394 (0.250)			-0.741 (0.252)	0.849 (0.064)
Drecession					-0.023 (0.926)	0.106 (0.592)	0.306 (0.415)	-0.327 (0.261)
AR(1)								-0.524 (0.085)
Mean dependent variable	1.933	1.376	1.933	1.376	1.933	1.376	1.933	1.404
R^2	0.027	0.083	0.074	0.157	0.027	0.098	0.117	0.330
F-statistic	0.448 (0.512)	1.464 (0.243)	0.607 (0.557)	1.404 (0.276)	0.214 (0.809)	0.821 (0.458)	0.621 (0.612)	1.484 (0.267)
Wald F-statistics		1.212 (0.287)	0.398 (0.678)	0.951 (0.408)		0.578 (0.572)		
D-W	1.724	2.368	1.595	2.467	1.722	2.309	1.535	2.094
Jarque-Bera	9.819 (0.007)	1.229 (0.540)	2.489 (0.288)	1.199 (0.548)	8.817 (0.012)	1.341 (0.511)	3.111 (0.211)	0.726 (0.695)
Breusch-Pagan-Godfrey	0.372 (0.550)	5.734 (0.029)	3.051 (0.077)	4.416 (0.031)	1.420 (0.272)	4.075 (0.038)	2.303 (0.121)	0.998 (0.424)
Breusch-Godfrey LM	0.400 (0.677)	0.679 (0.522)	0.532 (0.599)	1.181 (0.337)	0.377 (0.692)	0.625 (0.550)	0.661 (0.533)	2.441 (0.137)

p-values in parenthesis

White Heteroskedasticity-consistent standard errors and covariance

Adjusted Wage Share

Outliers: SK (95, 05, 07, 08, 09)
No trend detected
Current crisis and recessions do not exert any significant effect
Results do not depend on inclusion or exclusion outliers



ADJUSTED WAGE SHARE
Dependent variable: Standard deviation of Adjusted Wage Share
OLS

	Model 1 With Outliers	Model 2 Without Outliers	Model 3 With Outliers	Model 4 Without Outliers	Model 5 With Outliers	Model 6 Without Outliers	Model 7 Model With Outliers	Model 8 Without Outliers
C	5.172 (0.000)	5.014 (0.000)	5.089 (0.000)	5.217 (0.000)	5.179 (0.000)	5.070 (0.000)	5.088 (0.000)	5.180 (0.000)
Trend	-0.030 (0.273)	-0.0.30 (0.687)	-0.011 (0.704)	-0.062 (0.479)	-0.028 (0.335)	-0.043 (0.550)	-0.011 (0.720)	-0.059 (0.513)
Dcrisis			-0.341 (0.109)	0.353 (0.639)			-0.344 (0.161)	0.234 (0.802)
Drecession					-0.065 (0.534)	-0.175 (0.630)	0.003 (0.974)	0.118 (0.795)
AR(1)	1.208 (0.000)	0.630 (0.012)	1.324 (0.000)	0.582 (0.037)	1.228 (0.000)	0.596 (0.022)	1.324 (0.000)	0.577 (0.047)
AR(2)	-0.659 (0.013)		-0.739 (0.005)		-0.673 (0.015)		-0.739 (0.008)	
Mean dependent variable	4.812	4.622	4.812	4.622	4.812	4.622	4.812	4.622
R^2	0.727	0.435	0.778	0.444	0.736	0.444	0.778	0.447
F-statistic	11.594 (0.000)	5.793 (0.013)	10.564 (0.000)	3.735 (0.036)	8.405 (0.001)	3.736 (0.036)	7.748 (0.002)	2.633 (0.082)
D-W	2.330	1.911	1.855	1.966	2.262	1.993	1.855	2.002
Jarque-Bera	1.142 (0.564)	3.181 (0.203)	0.291 (0.864)	2.638 (0.267)	0.868 (0.647)	2.962 (0.227)	0.287 (0.866)	2.756 (0.250)
Breusch-Pagan-Godfrey	0.817 (0.380)	0.532 (0.476)	0.147 (0.863)	1.157 (0.340)	1.821 (0.198)	0.715 (0.505)	0.093 (0.962)	0.736 (0.547)
Breusch-Godfrey LM	1.038 0.386	1.582 (0.242)	0.071 (0.931)	1.849 (0.199=	0.601 (0.566)	2.044 (0.172)	0.067 (0.935)	2.012 (0.180)

p-values in parenthesis

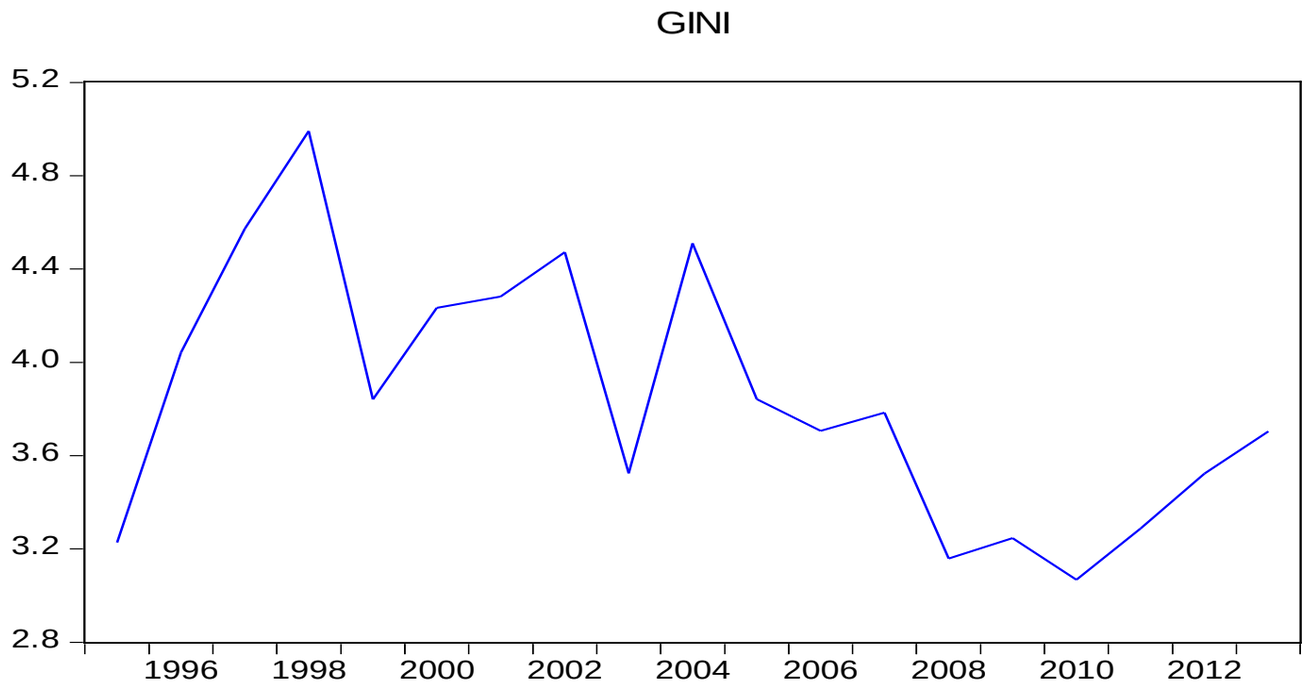
White Heteroskedasticity-consistent standard errors and covariance

Gini Coefficient

No Outliers

Convergence is detected

Convergence accelerates during recessions



GINI COEFFICIENT (NO OUTLIERS)
Dependent variable: Standard deviation of Gini Coefficient
OLS

	Model 1 #	Model 2	Model 3	Model 4
C	4.322 (0.000)	4.224 (0.000)	4.451 (0.000)	4.652 (0.000)
Trend	-0.053 (0.037)	-0.032 (0.309)	-0.046 (0.025)	-0.071 (0.059)
Dcrisis		-0.338 (0.391)		0.469 (0.407)
Drecession			-0.407 (0.064)	-0.614 (0.073)
Mean dependent variable	3.842	3.842	3.842	3.842
R^2	0.297	0.330	0.437	0.463
F-statistic	7.213 (0.015)	3.947 (0.040)	6.214 (0.010)	4.314 (0.022)
Wald F-statistics	5.122 (0.036)			
D-W	1.480	1.591	1.454	1.346
Jarque-Bera	0.289 (0.865)	0.127 (0.938)	0.295 (0.862)	0.373 (0.829)
Breusch-Pagan-Godfrey	4.331 (0.052)	1.901 (0.181)	1.282 (0.304)	1.346 (0.296)
Breusch-Godfrey LM	0.077 (0.925)	0.026 (0.974)	0.298 (0.746)	0.829 (0.458)

p-values in parenthesis

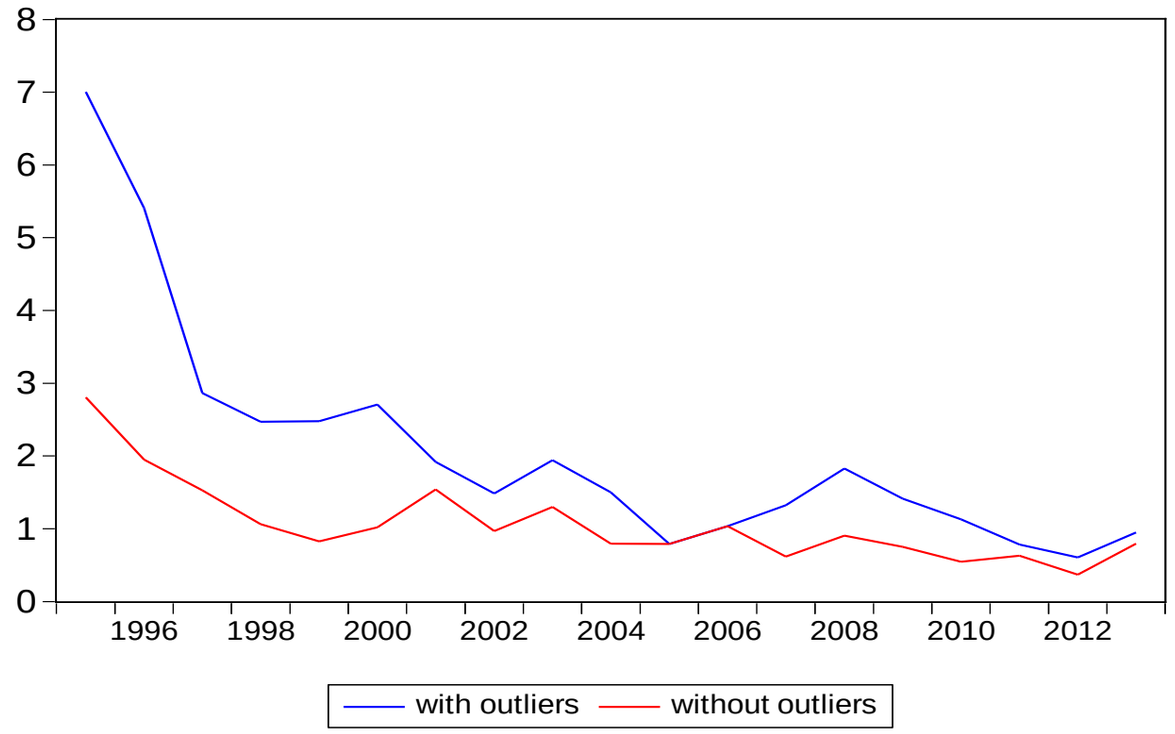
White Heteroskedasticity-consistent standard errors and covariance

Inflation rate (CPI)

Outliers: EE (95-98, 07, 08, 11, 12), SL (95-00), SK (98-04, 12), IE (07, 09, 10), GR (10, 12, 13)

Convergence trend is detected

Recessions generate divergence



INFLATION (CPI)
Dependent variable: Standard deviation of Inflation
OLS

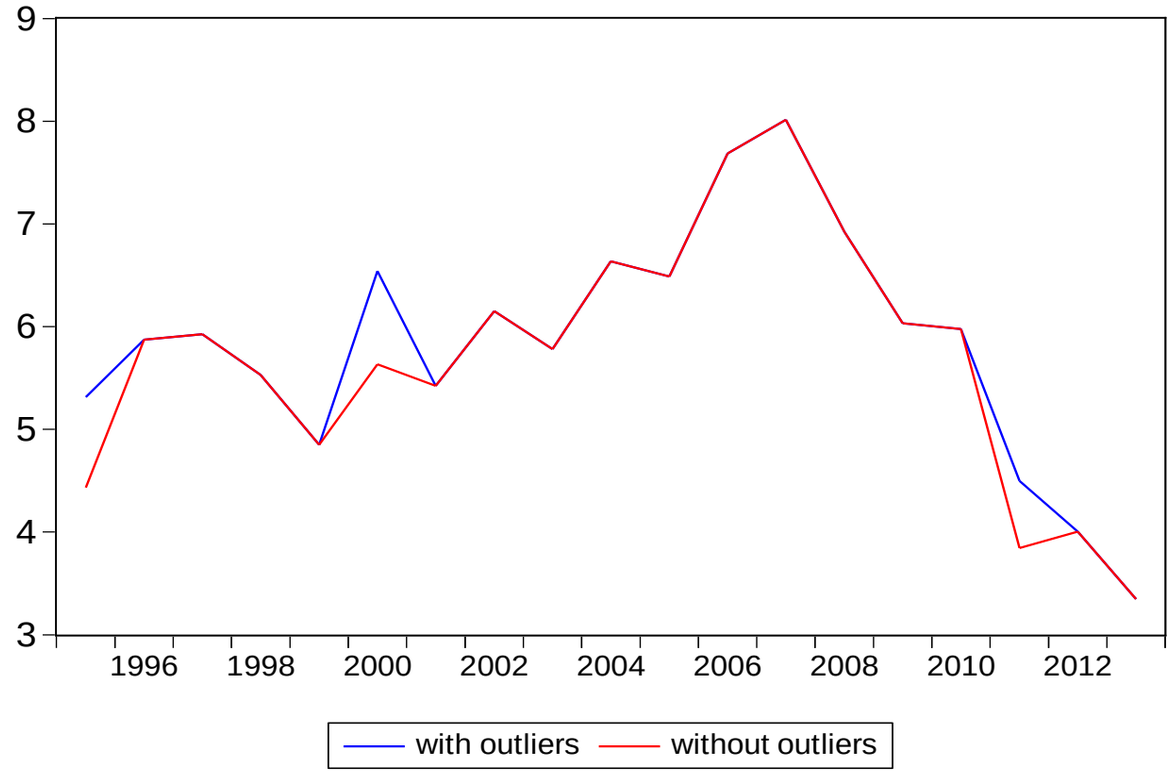
	Model 1 With Outliers #	Model 2 Without Outliers *	Model 3 With Outliers *	Model 4 Without Outliers *	Model 5 With Outliers *	Model 6 Without Outliers	Model 7 Model With Outliers *	Model 8 Without Outliers
C	4.110 (0.000)	1.761 (0.000)	4.548 (0.000)	1.851 (0.000)	3.724 (0.000)	1.632 (0.000)	3.630 (0.000)	1.399 (0.000)
Trend	-0.224 (0.004)	-0.077 (0.002)	-0.317 (0.004)	-0.096 (0.010)	-0.246 (0.000)	-0.084 (0.000)	-0.234 (0.009)	-0.055 (0.043)
Dcrisis			1.513 (0.078)	0.310 (0.250)			-0.219 (0.852)	-0.542 (0.190)
Drecession					1.221 (0.026)	0.408 (0.106)	1.318 (0.125)	0.648 (0.012)
Mean dependent variable	2.085	1.065	2.085	1.065	2.085	1.065	2.085	1.065
R^2	0.610	0.581	0.684	0.606	0.754	0.711	0.755	0.743
F-statistic	26.627 (0.000)	23.634 (0.000)	17.376 (0.000)	12.346 (0.000)	24.567 (0.000)	19.729 (0.000)	15.408 (0.000)	14.506 (0.000)
Wald F-statistics	10.595 (0.004)	13.319 0.001)	11.101 (0.000)	8.572 (0.002)	19.015 (0.000)		12.780 (0.000)	
D-W	0.545	1.064	0.833	1.181	1.189	1.381	1.214	1.551
Jarque-Bera	7.311 (0.025)	4.818 (0.089)	5.099 (0.078)	2.271 (0.321)	2.322 (0.313)	2.233 (0.327)	2.065 (0.356)	3.777 (0.151)
Breusch-Pagan-Godfrey	6.069 (0.024)	5.235 (0.035)	3.348 (0.061)	3.371 (0.060)	5.222 (0.018)	2.359 (0.126)	6.083 (0.006)	2.350 (0.113)
Breusch-Godfrey LM	3.377 (0.061)	0.377 (0.692)	2.390 (0.127)	0.267 (0.7689	1.236 (0.320)	0.239 (0.790)	1.090 (0.364)	1.354 (0.292)

p-values in parenthesis

White Heteroskedasticity-consistent standard errors and covariance
* HAC standard errors and covariance

Balance on current transactions

Outliers: LUX (95, 00), GR (11)
Trend detected conditional to Crisis
Divergence is detected
Current crisis is significant, leading to intense convergence



BALANCE ON CURRENT TRANSACTIONS
Dependent variable: Standard deviation of Balance of current transactions
OLS

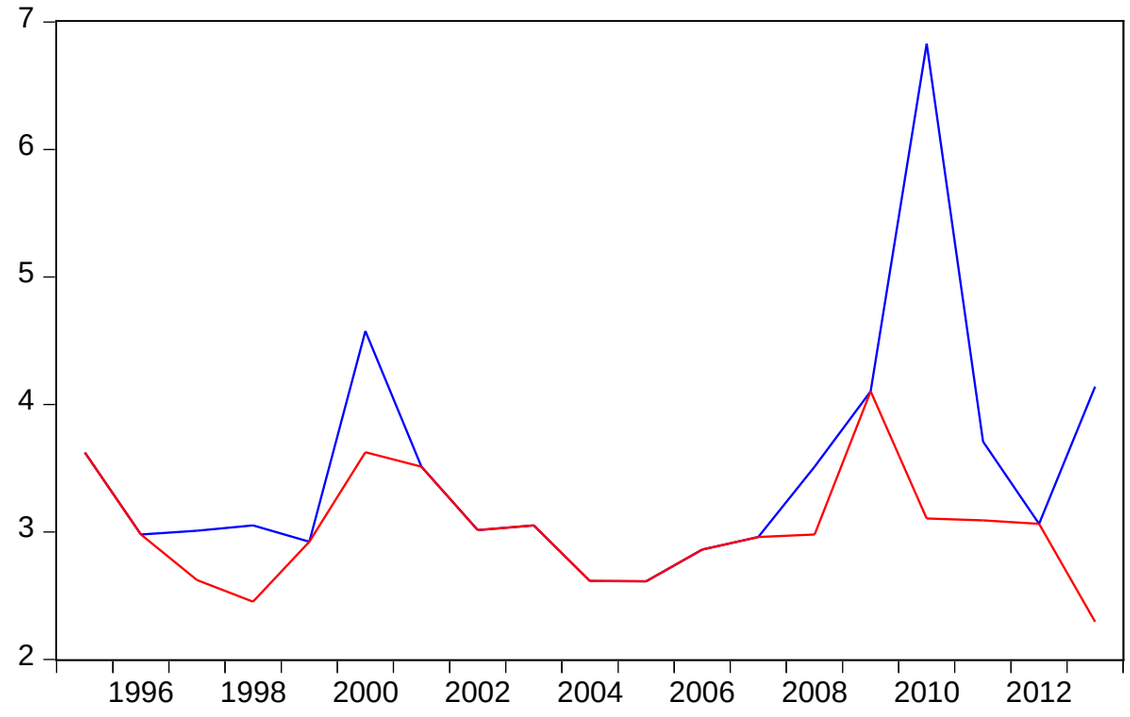
	Model 1 With Outliers *	Model 2 Without Outliers *	Model 3 With Outliers #	Model 4 Without Outliers #	Model 5 With Outliers #	Model 6 Without Outliers	Model 7 Model With Outliers #	Model 8 Without Outliers #
C	6.172 (0.000)	5.933 (0.000)	5.406 (0.000)	5.084 (0.000)	8.887 (0.044)	9.730 (0.125)	5.448 (0.000)	5.098 (0.000)
Trend	-0.036 (0.462)	-0.024 (0.755)	0.125 (0.011)	0.155 (0.006)	-0.244 (0.336)	-0.301 (0.424)	0.121 (0.082)	0.154 (0.025)
Dcrisis			-2.645 (0.003)	-2.931 (0.003)			-2.566 (0.037)	-2.906 (0.022)
Drecession					-0.363 (0.284)	-0.302 (0.532)	-0.060 (0.903)	-0.019 (0.967)
AR(1)					0.796 (0.001)	0.797 (0.001)		
Mean dependent variable	5.841	5.713	5.841	5.713	5.871	5.784	5.841	5.713
R^2	0.032	0.012	0.481	0.500	0.576	0.614	0.481	0.500
F-statistic	0.565 (0.462)	0.217 (0.646)	7.428 (0.005)	8.018 (0.007)	6.339 (0.006)	7.452 (0.003)	4.648 (0.017)	5.012 (0.013)
Wald F-statistics		0.100 (0.754)	6.278 (0.009)	6.647 (0.007)	0.935 (0.415)		4.452 (0.019)	4.257 (0.023)
D-W	0.550	0.496	1.230	1.224	2.202	1.906	1.219	1.221
Jarque-Bera	0.174 (0.916)	0.233 (0.889)	0.165 (0.920)	0.625 (0.731)	0.665 (0.718)	0.254 (0.880)	0.173 (0.916)	0.632 (0.728)
Breusch-Pagan-Godfrey	5.721 (0.028)	5.433 (0.032)	6.320 (0.009)	10.037 (0.001)	2.886 (0.087)	0.211 (0.811)	3.921 (0.029)	6.243 (0.005)
Breusch-Godfrey LM	7.962 (0.004)	7.635 (0.005)	0.837 (0.453)	0.786 (0.474)	0.202 (0.819)	0.272 (0.766)	0.812 (0.465)	0.755 (0.489)

p-values in parenthesis

White Heteroskedasticity-consistent standard errors and covariance
* HAC standard errors and covariance

Public Budget Balance

Outliers: LUX (97), GR (08,13), SL (13), MT (98), SK (00), IE (10, 11)
Trend is not significant
Divergence has increased during the current crisis



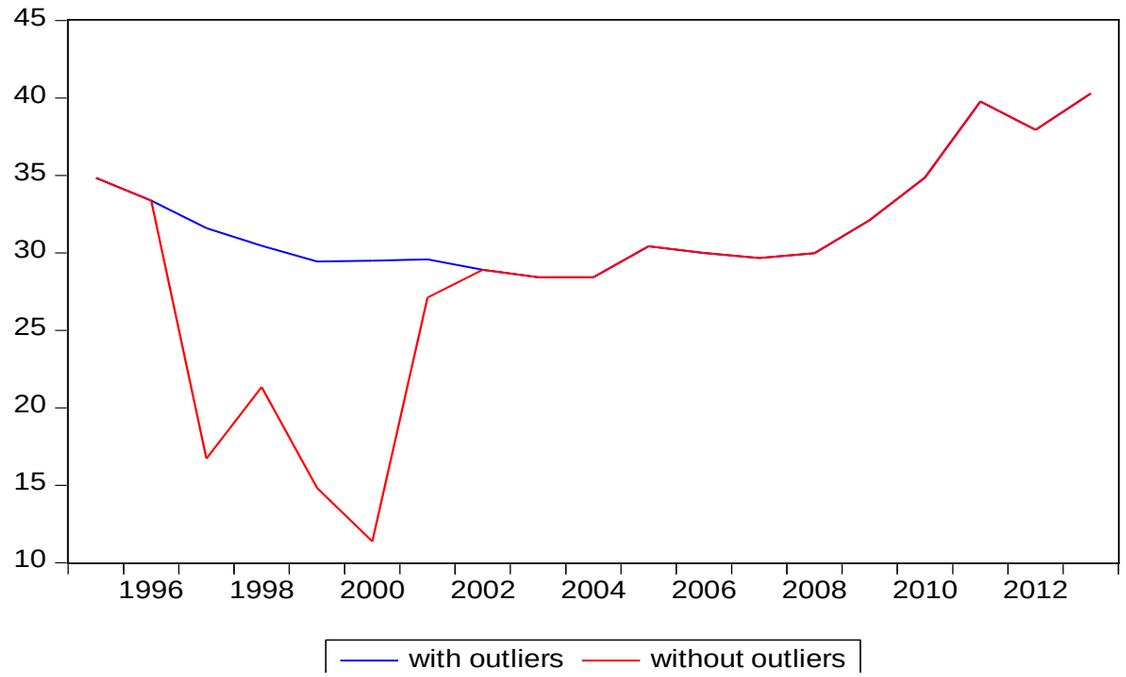
PUBLIC BUDGET BALANCE
Dependent variable: Standard deviation of Public Budget Balance
OLS

	Model 1 With Outliers	Model 2 Without Outliers	Model 3 With Outliers	Model 4 Without Outliers	Model 5 With Outliers	Model 6 Without Outliers	Model 7 Model With Outliers	Model 8 Without Outliers
C	2.973 (0.000)	3.074 (0.000)	3.438 (0.000)	3.211 (0.000)	2.792 (0.000)	3.022 (0.000)	3.666 (0.000)	3.281 (0.000)
Trend	0.056 (0.172)	-0.005 (0.774)	-0.042 (0.448)	-0.034 (0.250)	0.046 (0.258)	-0.008 (0.672)	-0.062 (0.369)	-0.040 (0.279)
Dcrisis			1.605 (0.030)	0.471 (0.208)			2.037 (0.076)	0.603 (0.308)
Drecession					0.572 (0.204)	0.166 (0.451)	-0.328 (0.604)	-0.100 (0.765)
Mean dependent variable	3.480	3.025	3.480	3.025	3.480	3.025	3.480	3.025
R^2	0.106	0.004	0.339	0.101	0.194	0.040	0.351	0.106
F-statistic	2.024 (0.172)	0.084 (0.774)	4.107 0.036)	0.903 (0.424)	1.931 (0.177)	0.339 (0.717)	2.708 (0.082)	0.598 (0.625)
D-W	1.593	1.391	2.209	1.169	1.776	1.225	2.320	1.206
Jarque-Bera	26.503 (0.000)	1.601 (0.448)	16.130 (0.000)	0.118 (0.942)	23.055 (0.000)	0.985 (0.610)	14.851 (0.000)	0.077 (0.961)
Breusch-Pagan-Godfrey	1.192 (0.290)	0.104 (0.750)	2.123 (0.152)	1.670 (0.219)	0.761 (0.483)	0.410 (0.669)	1.495 (0.256)	1.378 (0.287)
Breusch-Godfrey LM	0.586 (0.568)	0.936 (0.413)	0.358 (0.704)	1.440 (0.269)	0.348 (0.711)	1.303 (0.302)	0.576 (0.575)	1.158 (0.344)

p-values in parenthesis

Public Debt

Outliers: LUX (97-00), EE (97-00), BE (97-02), IT (97-00) GR (00)
Trend is significant: divergence is conditional to recessions
Divergence increases during recessions and crisis



PUBLIC DEBT
Dependent variable: Standard deviation of Public debt
OLS

	Model 1 With Outliers #	Model 2 Without Outliers #	Model 3 With Outliers #	Model 4 Without Outliers #	Model 5 With Outliers #	Model 6 Without Outliers #	Model 7 Model With Outliers #	Model 8 Without Outliers #
C	3.078 (0.952)	21.059 (0.000)	31.538 (0.000)	22.829 (0.000)	27.632 (0.000)	19.063 (0.000)	30.038 (0.000)	16.818 (0.002)
Trend	1.899 (0.436)	0.878 (0.019)	-0.186 (0.180)	0.503 (0.323)	0.250 (0.026)	0.767 (0.021)	-0.050 (0.766)	1.048 (0.025)
Dcrisis			8.438 (0.001)	6.114 (0.102)			5.606 (0.130)	-5.231 (0.430)
Drecession					4.634 (0.000)	6.319 (0.052)	2.155 (0.245)	8.632 (0.129)
AR(1)	0.871 (0.000)							
Mean dependent variable	31.928	28.966	32.081	28.966	32.081	28.966	32.081	28.966
R^2	0.874	0.382	0.675	0.432	0.630	0.540	0.710	0.556
F-statistic	52.123 (0.000)	10.534 (0.004)	16.631 (0.000)	6.096 (0.010)	16.664 (0.000)	9.427 (0.001)	12.242 (0.000)	6.267 (0.005)
Wald F-statistics	0.639 (0.436)	6.648 (0.019)	8.864 (0.002)	16.247 (0.000)	11.132 (0.000)	14.603 (0.000)	8.068 (0.001)	13.736 (0.000)
D-W	2.358	0.928	1.113	1.029	1.235	1.619	1.296	1.884
Jarque-Bera	1.340 (0.511)	0.652 (0.721)	0.376 (0.828)	0.747 (0.688)	1.855 (0.395)	1.101 (0.576)	1.469 (0.479)	1.043 (0.593)
Breusch-Pagan-Godfrey	6.898 (0.018)	9.673 (0.006)	6.271 (0.009)	6.610 (0.008)	2.953 (0.081)	7.309 (0.005)	3.758 (0.034)	6.245 (0.005)
Breusch-Godfrey LM	0.623 (0.551)	1.980 (0.172)	1.127 (0.351)	1.643 (0.228)	0.834 (0.454)	0.436 (0.654)	0.812 (0.465)	1.084 (0.366)

p-values in parenthesis
White Heteroskedasticity-consistent standard errors and covariance

Conclusions

No trend: wage share, real ULCs growth, real wages growth, public balance budget

Convergence: unemployment, Gini coefficient, inflation

Divergence: real GDP per capita, rate of growth of GDP, output gap, balance on current transactions, public debt

Crisis:

- convergence: GDP per capita, balance on current transactions
- divergence: unemployment, employment growth, public balance budget, public debt

Recessions:

- convergence: GDP per capita, Gini coefficient
- divergence: GDP rate of growth, inflation, public debt

Unclear results (depend on outliers): rate of growth of potential GDP, employment growth, rate of growth of GDP

Determinants of impact of economic and financial crisis

The main objective is to know whether the higher impact of the crisis on Europe is due to particular elements of the EU as a whole, of some groups of EU countries (euro, non-euro, CEE, Baltic States) or to particular features of individual economies

$$GDP_{i,post} = \pi_1 + \pi_2 Trade_{i,pre} + \pi_3 Gov_{i,pre} + \pi_4 Inf_{i,pre} + \pi_5 PubBal_{i,pre} + \pi_6 CA_{i,pre} + \epsilon_i$$

First model:

Is GDP change after the crisis (2008-2013) explained by pre-crisis (2000-2007) values of relevant variables (trade openess, public expenditure, inflation, public budget balance, current account balance?

55 developed and developing countries

Table 2. Pre-crisis disparities and post-crisis output change									
Dependent variable: Accumulated change in GDP in post-crisis period									
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Constant	38.9143 (0.0000)	36.0812 (0.0000)	35.8016 (0.0000)	31.6727 (0.0002)	31.7104 (0.0002)	38.9269 (0.0000)	38.4311 (0.0000)	37.3761 (0.0000)	38.9544 (0.0000)
Trade openness	-0.0281 (0.0713)	-0.0231 (0.1220)	-0.0099 (0.5369)	0.0025 (0.8839)	0.0052 (0.7626)	-0.0289 (0.0684)	-0.0212 (0.2337)	-0.0174 (0.2733)	**-0.0290 (0.0957)**
Government size	**-0.8369 (0.0000)**	**-0.7251 (0.0000)**	**-0.7205 (0.0000)**	**-0.5663 (0.0025)**	**-0.5677 (0.0026)**	**-0.7983 (0.0000)**	**-0.7827 (0.0000)**	**-0.7438 (0.0000)**	**-0.7992 (0.0000)**
Inflation	0.1535 (0.4495)	0.0940 (0.6539)	0.0448 (0.8360)	0.0177 (0.9270)	-0.0098 (0.9614)	0.0736 (0.7235)	0.0711 (0.7183)	0.0166 (0.9404)	0.0704 (0.7443)
Public balance	**-0.8511 (0.0526)**	**-0.9136 (0.0330)**	**-0.8783 (0.0373)**	**-0.9136 (0.0306)**	**-0.9134 (0.0311)**	**-0.8338 (0.0430)**	**-0.8135 (0.0480)**	**-0.8202 (0.0690)**	**-0.8974 (0.0442)**
Current account	**0.8881 (0.0002)**	**0.9350 (0.0002)**	**0.7602 (0.0010)**	**0.6288 (0.0054)**	**0.6209 (0.0059)**	**0.7757 (0.0007)**	**0.6424 (0.0187)**	**0.6876 (0.0106)**	**0.7757 (0.0016)**
EA-12		**-6.5700 (0.0298)**							
EA-19			**-6.6937 (0.0136)**		**-11.0076 (0.0006)**				
EU-28				**-9.6224 (0.0020)**					
EU-28 (other than EA-19)					**-7.2513 (0.0626)**				
GIIPS						**-11.2299 (0.0028)**	**-12.6228 (0.0020)**	**-13.1120 (0.0017)**	
CEE							-3.7291 (0.3164)		
Baltic states								-5.4465 (0.1303)	
EA-19 (no GIIPS no Baltics)								-3.6949 (0.2596)	
Greece									**-25.2607 (0.0000)**
Ireland									**-9.9570 (0.0000)**
Italy									**-6.5534 (0.0114)**
Portugal									**-5.8646 (0.0068)**
Spain									**-9.0407 (0.0000)**
R-squared	0.5827	0.6154	0.6204	0.6327	0.6416	0.6381	0.6455	0.6505	0.6646
Wald F-stat	11.6450	11.2027	12.6519	13.6876	12.6866	11.3822	10.4367	10.8412	8.7189*
Prob.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
White heteroskedasticity-consistent standard errors & covariance; *p-values* in parentheses; *F-stat									

Second model

We analyze the change between the pre-crisis (2003-2007) and the post-crisis (2008-2012) of a number of variables in the euro area

We focus on Euro Area EA-12. We use 2 control groups (non-euro EU countries, and OECD high income countries)

Model: $x_{i,post} - x_{i,pre} = \alpha_1 + \alpha_2 x_{i,pre} + \alpha_3 D_i + \mu_i$

Dummies:

- EA-12
- GIIPS
- Core: AT, BE, FI, FR, DE, LUX, NL
- CEE: BG, CZ, HU, PL RO, SK, SL, EE, LT, LV

	Control group:EU-27											
	Inflation (GDP deflactor)				GDP growth				GDP percapita			
Constant	0.734 (0.012)	1.273 (0.001)	1.177 (0.002)	1.153 (0.000)	-0.122 (0.808)	1.158 (0.176)	1.080 (0.192)	0.956 (0.154)	-1.221 (0.006)	-0.318 (0.661)	-0.276 (0.704)	-0.268 (0.625)
Pre-crisis	**-0.617** **(0.000)**	**-0.669** **(0.000)**	**-0.648** **(0.000)**	**-0.613** **(0.000)**	**-1.015** **(0.000)**	**-1.175** **(0.000)**	**-1.160** **(0.000)**	**-1.271** **(0.000)**	**-0.798** **(0.000)**	**-0.906** **(0.000)**	**-0.914** **(0.000)**	**-1.127** **(0.000)**
EA-12		**-0.782** **(0.087)**				**-1.356** **(0.059)**				-1.070 (0.161)		
GIIPS			**-1.596** **(0.015)**	**-1.677** **(0.009)**			**-2.460** **(0.007)**	**-2.003** **(0.003)**			**-2.093** **(0.024)**	**-1.682** **(0.009)**
Core			-0.120 (0.716)				-0.504 (0.349)				-0.382 (0.585)	
CEE				-0.333 (0.462)				1.017 (0.361)				1.755 (0.199)
R-squared	0.754	0.784	0.838	0.841	0.719	0.762	0.818	0.825	0.708	0.735	0.779	0.805
Wald F-statistic	218.439	84.329	81.591	100.487	72.817	42.742	34.784	37.669	79.379	44.078	30.239	41.132
Prob(WaldF-statistic)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Control group: OECD High-income countries											
	Inflation (GDP deflactor)				GDP growth				GDPpercapita			
Constant	0.110 (0.756)	0.488 (0.266)	0.230 (0.480)		-0.367 (0.496)	0.947 (0.214)	0.840 (0.215)		-1.236 (0.007)	-0.290 (0.622)	-0.225 (0.685)	
Pre-crisis	**-0.339** **(0.054)**	**-0.357** **(0.053)**	-0.258 (0.104)		**-0.817** **(0.000)**	**-0.987** **(0.000)**	**-0.958** **(0.000)**		**-0.677** **(0.003)**	**-0.819** **(0.001)**	**-0.841** **(0.000)**	
EA-12		-0.749 (0.138)				**-1.685** **(0.009)**				**-1.281** **(0.045)**		
GIIPS			**-1.802** **(0.016)**				**-2.832** **(0.001)**				**-2.290** **(0.007)**	
Core			0.034 (0.924)				**-0.824** **(0.058)**				-0.595 (0.290)	
R-squared	0.118	0.195	0.388		0.364	0.531	0.644		0.312	0.429	0.528	
Wald F-statistic	4.085	4.052	5.537		16.520	12.398	11.059		10.731	7.578	6.445	
Prob (WaldF-statistic)	0.054	0.030	0.005		0.000	0.000	0.000		0.003	0.003	0.003	
Whiteheteroskedasticity-consistentstandarderrors&covariance;*p-values*inparentheses												

	Control group: EU-27											
	Long-term unemployment				Unemployment				Employment			
Constant	8.794 (0.014)	6.259 (0.061)	7.162 (0.037)	6.241 (0.055)	4.926 (0.008)	4.554 (0.020)	5.130 (0.001)	4.276 (0.003)	9.097 (0.042)	9.304 (0.042)	11.116 (0.003)	13.614 (0.000)
Pre-crisis	**-0.287** **(0.001)**	**-0.267** **(0.001)**	**-0.288** **(0.001)**	**-0.225** **(0.016)**	**-0.457** **(0.064)**	**-0.442** **(0.078)**	**-0.513** **(0.007)**	**-0.632** **(0.003)**	**-0.176** **(0.032)**	**-0.176** **(0.031)**	**-0.210** **(0.001)**	**-0.240** **(0.000)**
EA-12		**3.850** **(0.087)**				0.571 (0.681)				-0.455 (0.585)		
GIIPS			**7.974** **(0.004)**	**6.316** **(0.022)**			**4.239** **(0.021)**	**6.005** **(0.001)**			**-3.010** **(0.000)**	**-3.984** **(0.000)**
Core			0.760 (0.716)				**-2.158** **(0.010)**				**1.369** **(0.037)**	
CEE				-2.999 (0.342)				**2.378** **(0.050)**				**-1.098** **(0.086)**
R-squared	0.304	0.376	0.487	0.505	0.148	0.154	0.530	0.537	0.184	0.195	0.651	0.624
WaldF-statistic	13.504	7.506	8.003	7.947	3.749	1.973	11.179	9.358	5.156	2.681	16.470	15.792
Prob(WaldF-statistic)	0.001	0.003	0.001	0.001	0.064	0.161	0.000	0.000	0.032	0.089	0.000	0.000

	Control group: OECD High-income countries											
	Long-term unemployment				Unemployment				Employment			
Constant	5.387 (0.012)	5.031 (0.021)	5.397 (0.017)		3.334 (0.017)	2.700 (0.027)	3.053 (0.001)		6.699 (0.093)	10.393 (0.027)	12.099 (0.001)	
Pre-crisis	**-0.194** **(0.004)**	**-0.243** **(0.004)**	**-0.258** **(0.003)**		-0.351 (0.124)	**-0.395** **(0.045)**	**-0.451** **(0.003)**		**-0.125** **(0.064)**	**-0.179** **(0.021)**	**-0.208** **(0.001)**	
EA-12		4.173 (0.142)				2.086 (0.101)				-1.398 (0.191)		
GIIPS			**8.513** **(0.012)**				**5.837** **(0.001)**				**-4.138** **(0.000)**	
Core			1.446 (0.552)				-0.509 (0.392)				0.235 (0.743)	
R-squared	0.258	0.340	0.463		0.128	0.233	0.665		0.144	0.221	0.660	
Wald F-statistic	10.362	5.445	6.101		2.533	3.642	10.456		3.744	3.108	17.516	
Prob (WaldF-statistic)	0.004	0.011	0.003		0.124	0.042	0.000		0.064	0.063	0.000	

White heteroskedasticity-consistent standard errors & covariance; p-value in parentheses

Current account				
	Control group: EU-27			
Constant	0.366 (0.489)	1.438 (0.079)	0.900 (0.319)	0.101 (0.914)
Pre-crisis	**-0.462** **(0.000)**	**-0.397** **(0.001)**	**-0.487** **(0.001)**	**-0.384** **(0.018)**
EA-12 dummy		**-1.937** **(0.081)**		
GIIPS dummy			**-3.054** **(0.033)**	-1.661 (0.375)
Core dummy			-0.177 (0.913)	
CEE dummy				2.226 (0.276)
R-squared	0.522	0.561	0.593	0.618
Wald F-statistic	18.816	10.662	8.190	9.040
Prob (Wald F-statistic)	0.000	0.000	0.001	0.000
	Control group: OECD High-income countries			
Constant	-0.063 (0.860)	0.331 (0.455)	0.332 (0.465)	
Pre-crisis	**-0.193** **(0.000)**	**-0.191** **(0.000)**	**-0.185** **(0.001)**	
EA-12 dummy		-0.885 (0.223)		
GIIPS dummy			-0.742 (0.420)	
Core dummy			-0.992 (0.316)	
R-squared	0.361	0.401	0.402	
Wald F-statistic	16.525	10.273	6.827	
Prob (Wald F-statistic)	0.000	0.001	0.002	

Whiteheteroskedasticity-consistentstandarderrors&covariance.p-valuesinparentheses

	Control group: EU-27							
	Government consolidated gross debt				Cash surplus/deficit (% GDP)			
Constant	12.441 (0.081)	11.517 (0.089)	13.939 (0.015)	15.782 (0.046)	-3.602 (0.000)	-2.872 (0.000)	-3.034 (0.000)	-2.280 (0.002)
Pre-crisis	0.025 (0.836)	-0.091 (0.548)	-0.156 (0.162)	-0.143 (0.249)	**-0.697** **(0.005)**	**-0.674** **(0.002)**	**-0.766** **(0.000)**	**-0.754** **(0.000)**
EA-12 dummy		**13.427** **(0.085)**				-1.506 (0.261)		
GIIPS dummy			**28.973** **(0.005)**	**26.209** **(0.004)**			**-4.763** **(0.032)**	**-5.496** **(0.018)**
Core dummy			4.953 (0.294)				0.920 (0.296)	
CEE dummy				-1.743 (0.780)				-0.909 (0.310)
R-squared	0.002	0.167	0.464	0.448	0.335	0.372	0.606	0.607
Wald F-statistic	0.044	1.906	3.498	3.425	9.716	5.913	8.249	9.074
Prob (Wald F-statistic)	0.836	0.172	0.034	0.036	0.005	0.008	0.001	0.000
	Control group: OECD High-income countries							
	Government consolidated gross debt				Cash surplus/deficit (% GDP)			
Constant	9.052 (0.201)	4.951 (0.484)	6.633 (0.359)		-3.204 (0.000)	-2.768 (0.003)	-2.717 (0.004)	
Pre-crisis	0.107 (0.203)	0.108 (0.235)	0.081 (0.405)		-0.060 (0.752)	-0.092 (0.655)	-0.148 (0.537)	
EA-12 dummy		8.040 (0.238)				-0.948 (0.561)		
GIIPS dummy			**20.265** **(0.054)**				-3.847 (0.165)	
Core dummy			-0.729 (0.886)				0.927 (0.365)	
R-squared	0.052	0.113	0.315		0.004	0.020	0.213	
Wald F-statistic	1.720	1.916	2.911		0.103	0.213	1.415	
Prob(Wald F-statistic)	0.203	0.172	0.060		0.752	0.810	0.265	

Whiteheteroskedasticity-consistentstandarderrors&covariance.p-valuesinparentheses

	Control group: EU-27							
	Gini index				Palma ratio			
Constant	0.040 (0.055)	0.039 (0.071)	0.053 (0.130)	0.058 (0.060)	0.206 (0.021)	0.202 (0.031)	0.233 (0.119)	0.295 (0.021)
Pre-crisis	**-0.153** **(0.048)**	**-0.158** **(0.067)**	-0.204 (0.128)	**-0.203** **(0.080)**	**-0.220** **(0.018)**	**-0.231** **(0.034)**	-0.259 (0.116)	**-0.268** **(0.046)**
EA-12 dummy		0.004 (0.536)				0.031 (0.504)		
GIIPS dummy			0.008 (0.511)	0.003 (0.814)			0.046 (0.582)	-0.005 (0.946)
Core dummy			0.001 (0.843)				0.017 (0.551)	
CEE dummy				-0.010 (0.136)				**-0.086** **(0.074)**
R-squared	0.253	0.283	0.314	0.438	0.360	0.395	0.404	0.580
Wald F-statistic	4.840	2.170	1.382	3.473	7.731	3.383	2.042	5.817
Prob (Wald F-statistic)	0.048	0.161	0.304	0.059	0.018	0.075	0.178	0.017
	Control group: OECD High-income countries							
	Gini index				Palma ratio			
Constant	0.015 (0.557)	0.016 (0.552)	0.010 (0.777)		0.203 (0.061)	0.200 (0.076)	0.227 (0.241)	
Pre-crisis	-0.065 (0.482)	-0.066 (0.488)	-0.046 (0.710)		**-0.210** **(0.051)**	**-0.214** **(0.075)**	-0.238 (0.228)	
EA-12 dummy		-0.001 (0.922)				0.013 (0.778)		
GIIPS dummy			-0.002 (0.840)				0.023 (0.787)	
Core dummy			0.001 (0.842)				0.003 (0.933)	
R-squared	0.048	0.049	0.056		0.299	0.306	0.310	
Wald F-statistic	0.523	0.270	0.227		4.814	2.170	1.453	
Prob (Wald F-statistic)	0.482	0.768	0.875		0.051	0.165	0.291	

Whiteheteroskedasticity-consistentstandarderrors&covariance.p-valuesinparentheses

Conclusions

Analyses have shown that the impact of the economic and financial crisis has been more intense in euro that in no-euro European Union countries

Within euro area, the impact of the crisis has been more severe in PIIGS and new member states (peripheral countries) that in the core countries

The higher impact of the crisis in the euro zone (in relation to other developed and developing economies and other non-euro EU countries) implies that there are common (structural problems of competiveness) and individual-endemic problems (endemic of some economies)

The crisis has led to a rising divergence in the euro area, exacerbating previous differences in the economic performance of euro countries. If this divergence not only has a cyclical nature (but also a structural-permanent one), coherence of the eurozone can diminish, making the working (survival?) of the (current?) euro area more problematic.

- Since the creation of the Monetary Union, there is no significant convergence in the macroeconomic performance of EMU countries
- Both recessions and current crisis generate a relevant and significant impact on the convergence-divergence process
- Results are not affected by inclusion-exclusion of outliers
- The Great Recession has increased the divergence in many macroeconomic outcome,generating the risk of higher heterogeneity if the crisis becomes chronic-endemic or makes structural the bad performance (low growth – secular stagnation) recorded in many countries