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TEL. (+43 1) 798 26 01-0
FAX (+43 1) 798 93 86

ÖSTERREICHISCHES INSTITUT FÜR WIRTSCHAFTSFORSCHUNG
AUSTRIAN INSTITUTE OF ECONOMIC RESEARCH

WIEN 3, ARSENAL, OBJEKT 20 • A-1103 WIEN, POSTFACH 91
P.O. BOX 91, A-1103 VIENNA – AUSTRIA • http://www.wifo.ac.at

The interaction between income distribution and the Great Recession

Stylized Facts on the Cross Country nexus

NERO-Meeting OECD

Paris, 18th June 2012

Karl Aiginger

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The hypothesis and the research question

The hypothesis:

- Income distribution became less equal in the years preceding Great Depression as well as Great Recession

$\Rightarrow$ Increasing inequality one cause of crises

The research questions:

Did countries with larger shifts in the distribution suffer a deeper/longer output loss in 2007/2010?

Thus with less equality (level)?

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Related own papers

- The Great Recession versus the Great Depression, Economics: E-Journal, Vol. 4, 2010
- "Why Growth Performance Differed across Countries", Review of Economics and Finance, No.4 /2011
- Strengthening the Resilience of an Economy. Intereconomics, October 2009
- Why labor market response differed in the Great Recession, WIFO Working Paper 396/2011 (jointly with Horvath, Th. and Mahringer, H.)

How distribution effects stability: Three hypotheses

- Decreasing wage shares reduce growth, if the "gap" is not invested (underinvestment)
- Polarization reduces consumption because of lower consumption ratios for rich people (underconsumption)
- Inequality fosters volatility:
  - investment and luxury goods more volatile *

Policy reactions to rising inequality may mitigate problems in the short run, but aggravate them in the long run

- Expansionary monetary policy
- Cheap credits to low income people
- High government deficits
- Export strategies

Caveats

Inequality may not cause crises, but be "co-determined" by third causes

- Policy shift, globalization, technology
- Education
- Technology
- Currency issues
- Some hypotheses refer to polarization, some to profit share
- Evidence on past crises (Atkinson, Bordo, Acemoglu) *

⇒ **No cross section investigations so far relating to Great Recession 2007/10**

The deepness of the Great Recession (output performance)

Four sub-indicators using GDP data:

- **GDP change in 2009**
- **Cumulated change of GDP 2008/09/10**
- **Decrease in quarterly GDP from peak to trough**
- **“Trend” change 08/09/10 vs. 2000-2007**

$\Rightarrow$ Single indicator: First Principle Component maximizing the information value

Top and low performers in output 2007/10

- **Top 10:**

  China, India, Poland, Australia, Korea, Switzerland, Canada, New Zealand, Norway, Belgium

- **Low 10:**

  Greece, Hungary, Finland, Romania, Slovenia, Iceland, Ireland, Lithuania, Estonia, Latvia

Method: Principle Component Analysis (*Aiginger*, 2011)

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Level of inequality (and pre-crisis change)

Five indicators (three personal, two functional)

- Gini of household incomes 2005 (and 2005 vs. mid 80s)
- Poverty rate mid 2000s (and vs. mid 90s)
- Interquintile ratio mid 2000s (and vs. mid 90s)
- Wage/income ratio 2007 (and 2007 vs. 1995)
- Wage/income ratio adjusted for number of employees

Single indicator: PC for pre-crisis level (PC-DISTR-level)

Single indicator: PC for pre-crisis change (PC-DISTR-change)

The disappointing first results

No correlation between

Output performance and <u>level</u> of distribution

R = 0.08, 0.05, 0.07, -0.06, -0.06, **0.08**

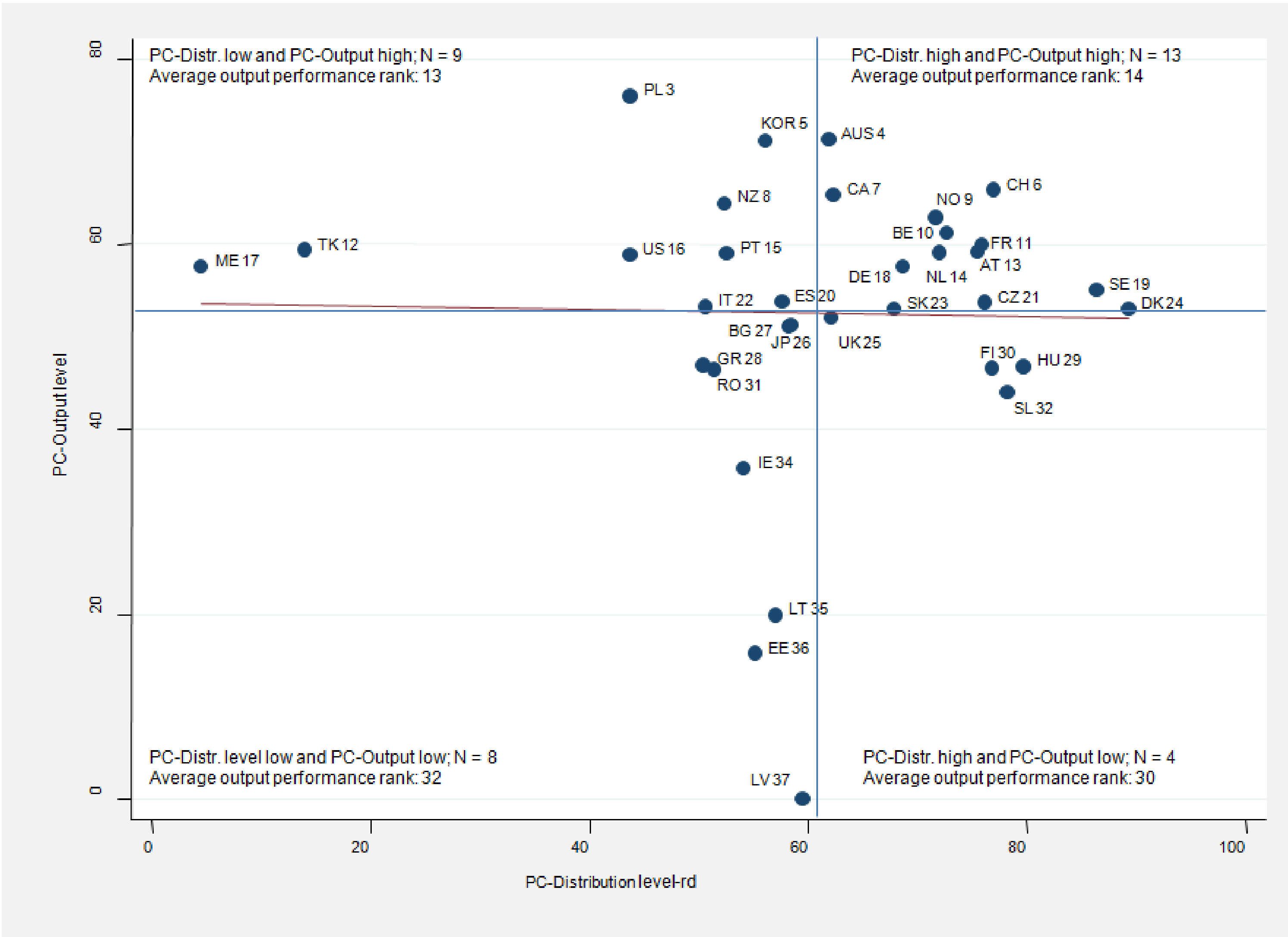
Output performance and <u>change</u> in distribution

R = -0.33*, 0.06, -0.01, -0.01, -0.01, -**0.05**

Neither with overall indicator (bold)

Nor with any single indicator (with the exception of Gini change)

The relation between output performance and level of distribution



The top performers in output and their position in equality level 2005

High performers in crisis, high equality 2005

Switzerland (6; 6)

Norway (9; 13), Belgium (10; 11)

High performers in crisis, low equality 2005

Poland (3; 34), Korea (5; 25), New Zealand (8; 30)

China (1; 27), India (2; 20) *

⇒ **Average rank of 10 top performers in output 20**

Remark: blue = rank in PC Output
red = rank in equality level

The low performers in output and their position in equality level 2005

Low performers in crisis, low equality 2005 (level)

Lithuania (35; 24), Latvia (37; 19), Estonia (36; 26), Greece (28; 33), Ireland (34; 28), Romania (31; 31)

Low performers in crisis, high equality 2005

Iceland (33; 1), Slovenia (32; 5), Finland (30; 7), Hungary (29; 4) *

⇒ **Average rank of 10 low performers in output is 18**

Remark: blue = rank in PC Output
red = rank in equality level

Performance of countries with "improving" distribution (ranks)

	PC-Distribution change	PC-Output	PC-Distribution level
	Rank	Rank	Rank
Iceland	1	33	1
Turkey	2	12	36
Greece	3	28	33
Portugal	4	15	29
Spain	5	20	23
Denmark	6	24	2
Italy	7	22	32
Switzerland	8	6	6
Belgium	9	10	11
Korea	10	5	25
Top 10		*18*	*20*

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Performance of countries with increasing inequality (ranks)

	PC-Distribution change	PC-Output	PC-Distribution level
Slovenia	28	32	5
Slovakia	29	23	15
Canada	30	7	16
Poland	31	3	34
Latvia	32	37	19
Estonia	33	36	26
Austria	34	13	10
Norway	35	9	13
Finland	36	30	7
Germany	37	18	14
Low 10		*21*	*16*

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Stylized Facts: Correlation output performance vs. distribution

	Values		
	Level	Change	
PC distribution	0.08	-0.05	
Gini	0.08	-0.33	xx
Poverty rate	0.05	0.06	
Interquintile ratio	0.07	-0.01	
Wage share[1])	-0.06	-0.01	
Wage share adjusted[1])	-0.06	-0.01	
Wage rate long[1])		-0.30	x
Wage rate long adjusted[1])		-0.34	xx

1) Remark: Minus implies that output performance better for lower wage share (more inequality)
x: t-statistic at 5% level. - xx t-statistic at 10% level.

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The only hope: Gini change between mid 2000s/mid 80ties

Correlation: 0.34 - significant at 5% level

- *Several top performers had decreasing Ginis*

  Australia (4, 9) - Korea (5, 4) – Switzerland (6, 3) – Canada (7, 16) - Belgium (10, 8)

- *Several low performers had increasing inequality:*

  Latvia (37, 37) - Estonia (36, 33) - Lithuania (35, 36) –

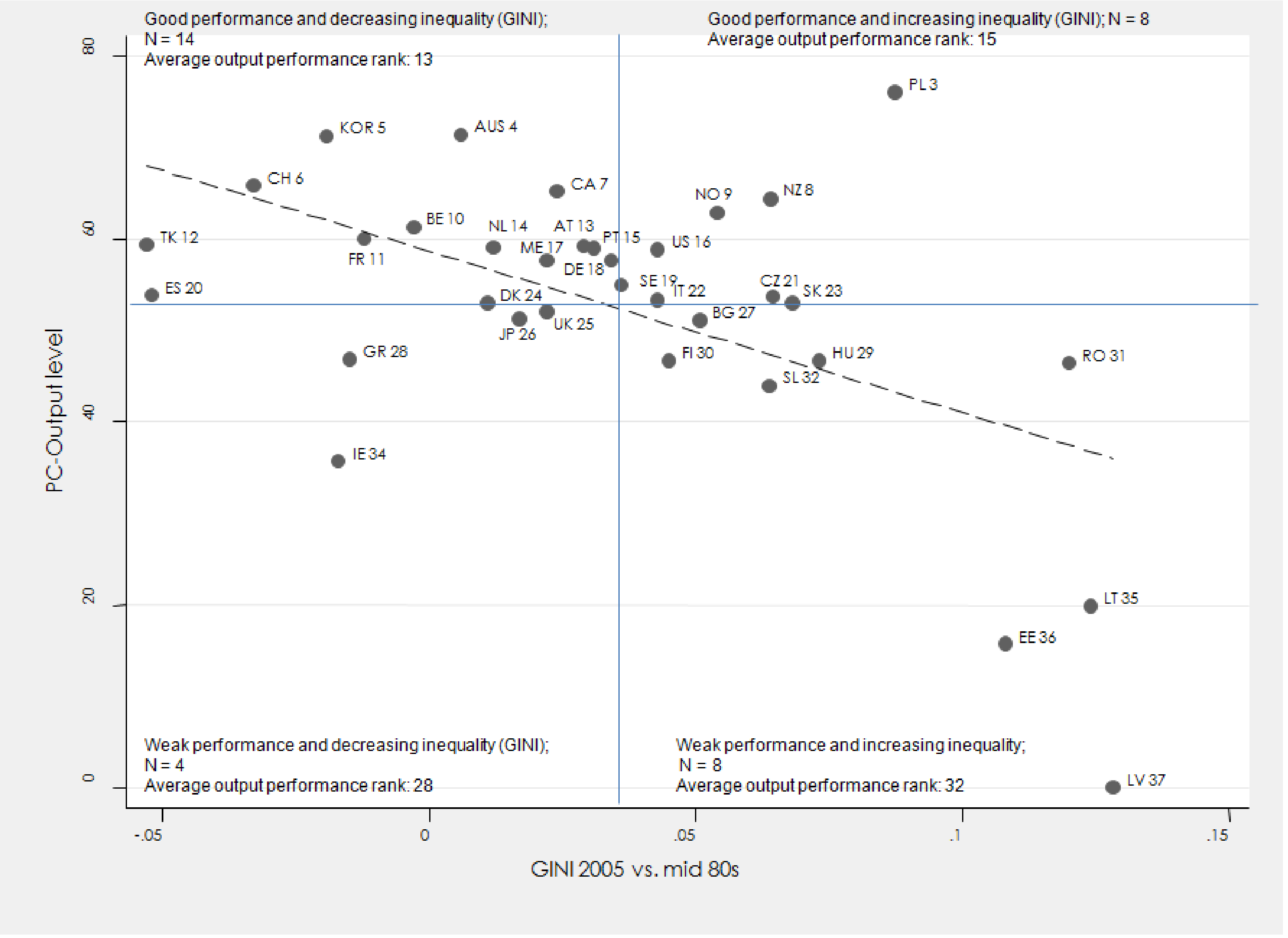
  Slovenia (32, 27) - Romania (31, 35) - Hungary (29, 31)

- *A tentative Interpretation:*

  Anglo Saxon countries group 1

  New member countries group 2

Better output performance/decreasing Gini



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The surprise: Output better in countries with decreasing wage rate

- Change in wage ratio 2005/1995 not significant
- Extending "upcoming period" to 1985-2007

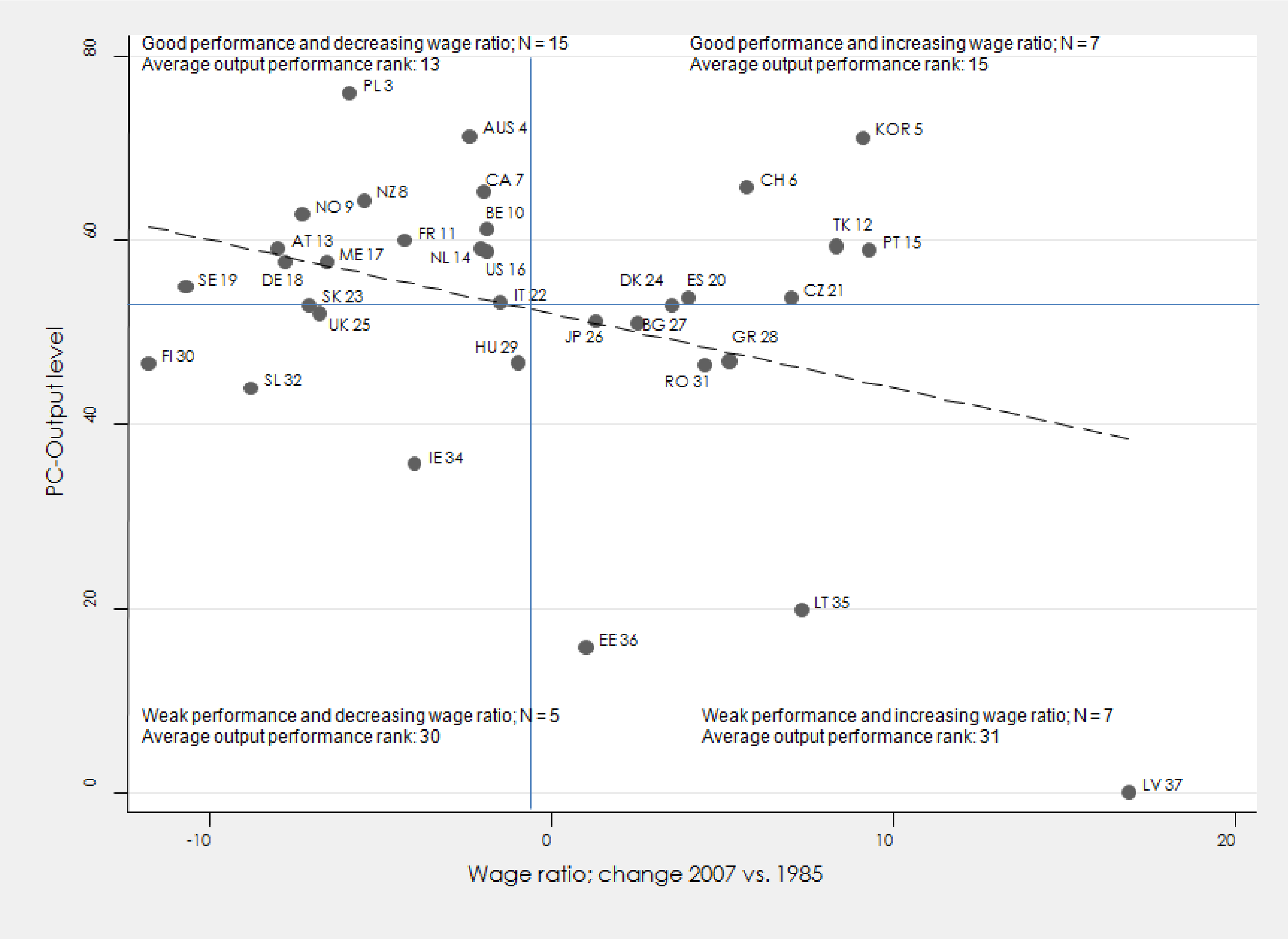
  R= 0.34 signifcant 5 % level (p = 0.04)
- 6 of top 10 have decreasing long run wage ratio

  specifically NO, PL, NZ, AUS, CA, BE

  only 2 of top 10 increasing wage ratio: CH, KOR
- Low performers with increasing wage: GR,RO,LT, EE

Caveat: direction of causality?

Increasing wage rate does not increase resilience



A tentative hypothesis:

- Long run polarization decreases resilience
- Wage shares increases do not foster resilience
- Rational for the "surprise"
- Wage increases below productivity, lead to unsustainable current account deficits
- Technological competitiveness enables stable profits and resilience

Robustness checks

- More on correlations
- Outlier elimination (China, India, Iceland)
- Ranks instead of quantitative values
- Adding inequality to “best practice” in regressions
- Specifically to current account 2007 (CA)
  - Inequality level marginally significant (+)
  - Inequality change significant at 5 % (-)
  - Gini change insignificant

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Interactions between determinants of the depth of the crisis

- There is an interaction between inequality and CA
  - Gini change works through current accounts
  - Other components impact additional to CA
- Countries with wage increases larger than productivity loose competitiveness
- Lower wage shares seem to have cushioned crisis

Methodological Caveats 1

- Data quality (wage shares/part time/household/Individuals)
- No causality analysis possible, no panel econometrics
- Long run data seem to be more important than short run
- Dependant variable : one crisis only
- Cross section evidence maybe difficult in world with globalizing trade and finance

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Methodological Caveats 2

- Upcoming period too short (10-20 years)
- Country sample too small (37)
- Output performance insufficiently measured
- Crisis not yet over (Greece 2011, 2012)
- Shifts in distribution not measured adequately (tail risks, uncertainty)

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What could have happened economically

- Lower wage rate and high polarization increases global volatility, not the national economy
- Countries are hit if they have fundamental weaknesses, not only those from distribution
- Countries could counteract increasing volatility by distribution according to different strategies (openness/credits/redistribution/subsidies)
- Distribution is not a single important component but only if it interacts with other
- Current account, credit booms, sovereign debt are weaknesses amplified if distribution changes

Further research is needed

- Testing the influence of different time spans
- Including policy reactions (leverage, deficits etc)
- Share of industrial sector (and its development)
- Socioeconomic systems (liberal, coordinated, emerging countries)
- Investigation of interactions
  - Current accounts, Gini, wage share
  - Liberalization – current accounts

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A very tentative summary

- No easy cross section link between crisis and distribution
- If anything there could be a bifurcation hypothesis
  - Increasing wage share did not stabilize (aggrevate)
  - Decreasing GINIS increased resilience
- Research on crisis and distribution is interesting
  - It is important tofind factors increasing resilience
  - Impact of polarization/decreasing wage shares

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A New Growth Path for Europe
WIFO + 32 partners

Towards a new path of growth for Europe (Welfare, Wealth and Work for Europe)

- **Goal:**
  - More social, ecological, dynamic; consistent with EU 2020 strategy (smart, sustainable, inclusive)
- **Tendered as 7th Framework Program**
  - Winner: WIFO + team of 32 partners, 4 years programme
- **Start: April 2012**

Boards of WWWforEurope

- **Scientific Board:**
  - **Aghion, Amable, Arrow, Banda, Chichilnisky, Corneo, de Grauwe, Eichengreen, Fehr, Fitoussi, Foray, Giddens, Hewings, Nowicka, Sapir, van der Ploeg, Verloo, Walby, von Weizsäcker, Wilkinson.**
- **Policy Board:**
  - **Almgren, Amato, Bayer, Beyrer, Crouch, Dow, Ederer, Elmeskov, Fischler, Görres,, Horvat, Hutschenreiter, Nowotny, Pesendorfer, Radošević, Raidl, Schor, Tumpel-Gugerell .**

Challenges for Europe defined in WWWforEurope

- Globalisation
- Welfare model under pressure
- Demography/Ageing
- New technologies and post industrialism
- Ecological issues/climate change *

- Constraints:
  - deficits and public debts
  - Imbalances in world and within Europe
  - Instability of financial system.

The 5 main "areas" of the WWW project
(New path of growth and social development for Europe)

- European Welfare State
- Ecological and biophysical dimension of new path
- Drivers for change: innovation, industrial policy, innovation policy
- New governance and institutions on the EU level
- Regions in transition

The project in a nutshell