

# Household income dynamics through the Great Recession

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## The Great Recession in EU

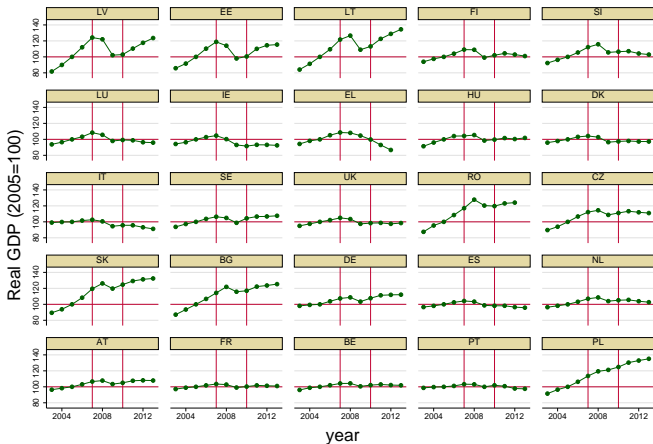
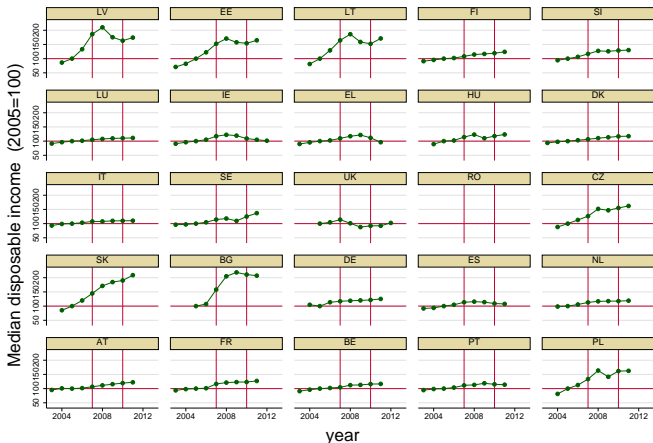


Figure 1: GDP per capita (2005=100)

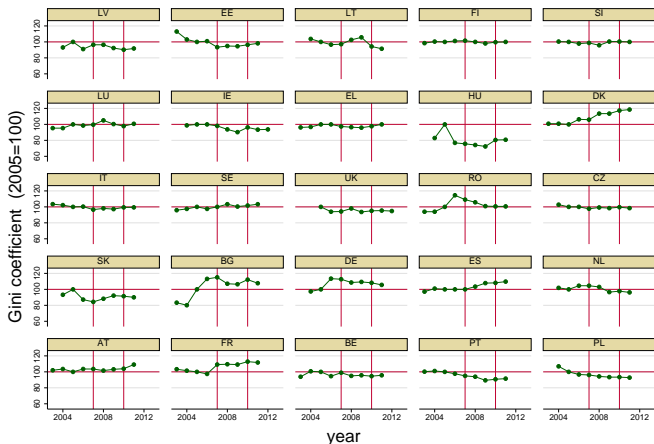
# The Great Recession in EU



Source: Eurostat

Figure 2: Median household disposable income

## The Great Recession in EU



Source: Eurostat

Figure 3: Gini coefficient of household disposable income

# EU-SILC longitudinal

## EU Statistics on Income and Living Conditions

- ▶ Micro-data source for EU social indicators (legally binding in all EU countries)
- ▶ Detailed household income information (register-based or survey-based) (but limited LM information)
- ▶ Annual income concept
- ▶ Panel dimension:
  - ▶ 4-year rotating panel structure: longitudinal component has (up to) 4 years of data
  - ▶ ... for a quarter of the cross-section sample size
  - ▶ heterogeneity in follow-up practices and subsequent attrition (cf. Iacovou & Lynn 2013; Jenkins & Van Kerm, 2014)
  - ▶ 2008–2011 release (income years 2007–2010 for most countries)

## Magnitude and progressivity of income changes

- ▶ Change in person  $i$ 's income:  $\delta(x_i, y_i) = s \times (y_i - x_i)$
- ▶ Summarize overall *magnitude of growth* and incorporate *sensitivity to its progressivity* (a.k.a. pro-poorness) (Jenkins & Van Kerm 2006, 2011, Grimm 2007, Bourguignon 2011, Peragine et al. 2011, Palmisano & Van de gaer 2013)

- ▶ Social Evaluation Function ('progressivity adjusted growth'):

$$W(H) = \int_{z_-}^{z_+} \int_{z_-}^{z_+} \omega(r_x) \delta(x, y) dH(x, y)$$

(Chakravarty, 1984, Van Kerm 2009, Jenkins & Van Kerm 2011)

- ▶  $\omega(r_x) > 0$  is a 'social weight' associated with *rank* of individuals at initial period
  - ▶ Preference for growth among low income people:  $\omega'(r_x) \leq 0$
  - ▶ With  $\int \omega(p) dp = 1$ ,  $W(H)$  is a *weighted average of individual income growth*

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## Return-to-progressivity measures

- ▶ Indices of 'return-to-progressivity':
  - ▶ Gain from progressivity on top of average growth:

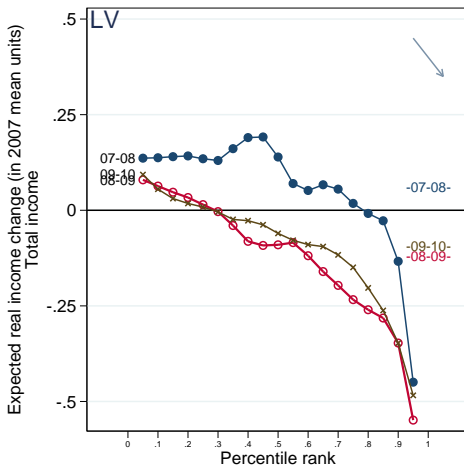
$$RTP^v = W^v - \bar{\delta}$$

# Income growth profiles

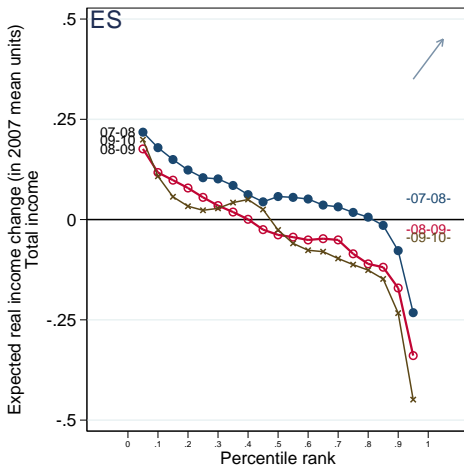
▶ trends in margin

▶ skip

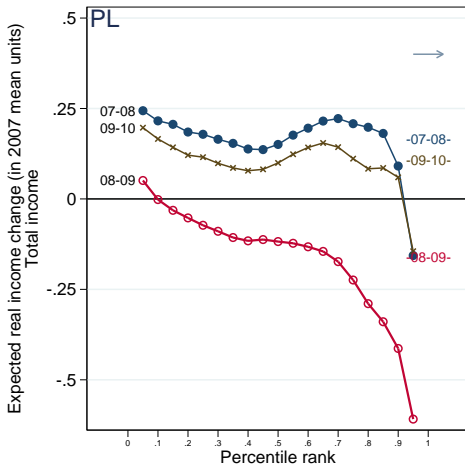
## Income growth profiles



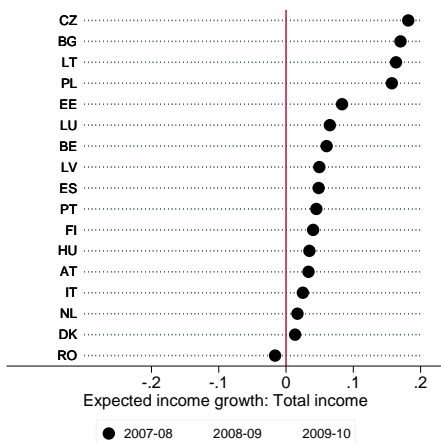
## Income growth profiles



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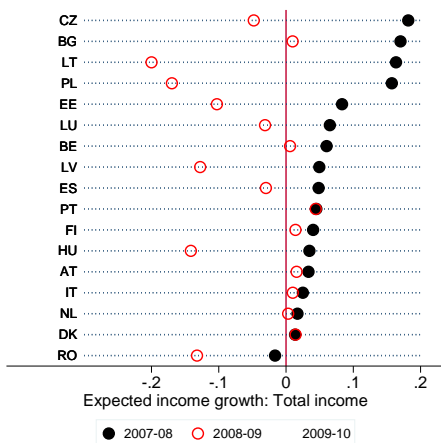


## The size of income variations



Generally clear negative impact of GR on hh income variations!

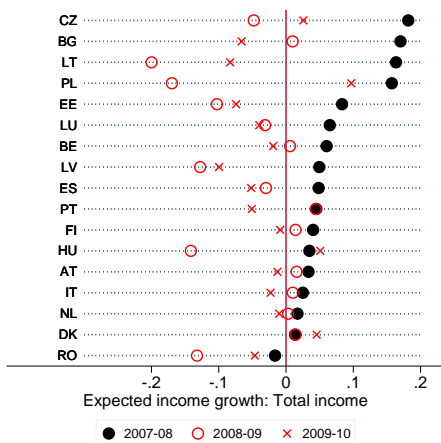
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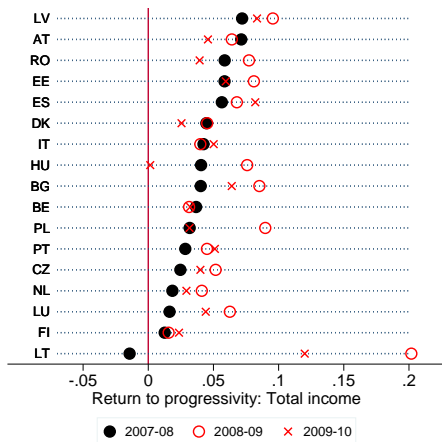


## The size of income variations



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# The progressivity (pro-poorness) of income variations



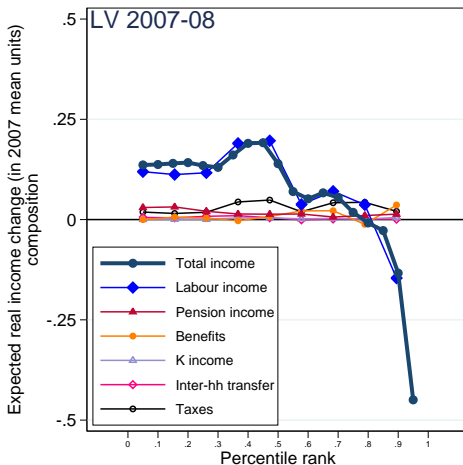
Progressive change throughout—more so in 2008–09 than 2007–08, but 2009–10 unclear!

## Contribution of income components

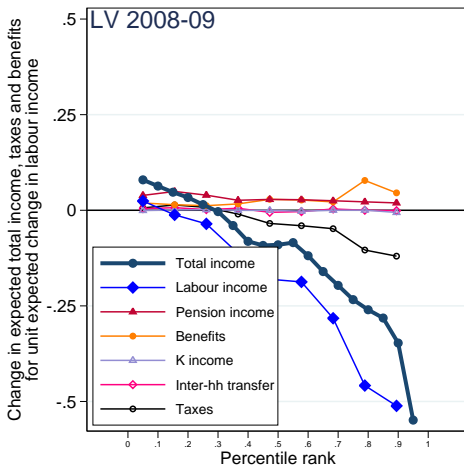
Linearity in  $W(H)$  makes it easy to identify contribution of changes in sources to change in total income: (gross labour income (of all members), private transfers, pensions, benefits, capital income, (minus) taxes paid

- ▶  $W(H) = \sum_{k=1}^K \int_0^1 \omega(p) m^k(p) dp$   
where  $m^k(p)$  is an 'income growth profile' for a particular source  $k$  (say, benefits) and  $p$  is rank in initial distribution of *total* income
- ▶ Contribution to progressivity:
  - ▶  $RTP = \sum_{k=1}^K RTP^k$

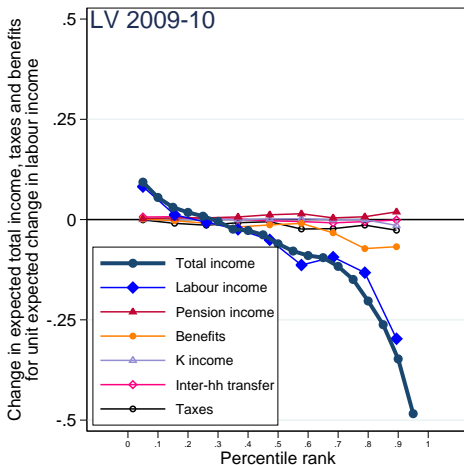
## Income growth profiles by source



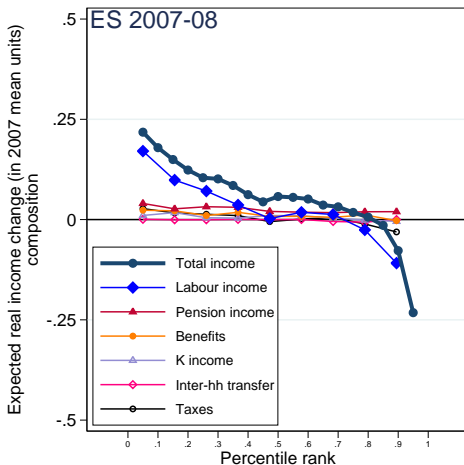
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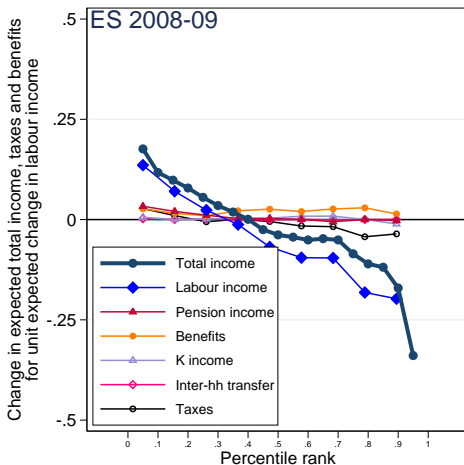
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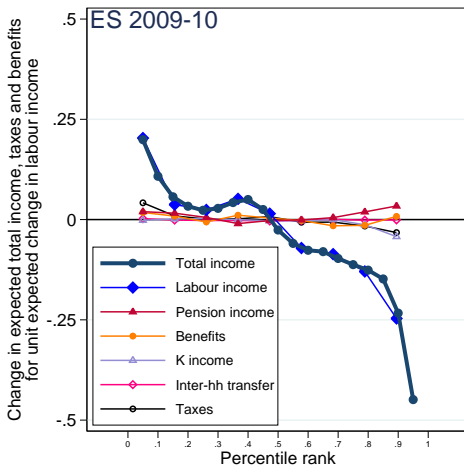


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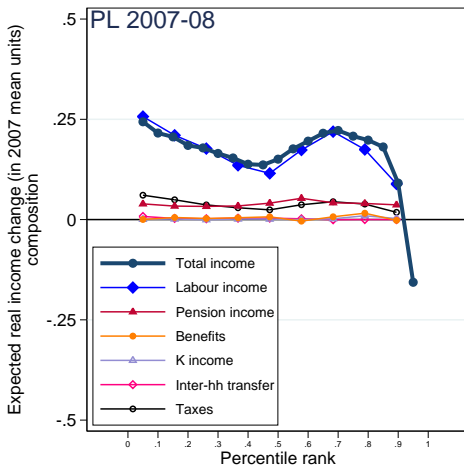




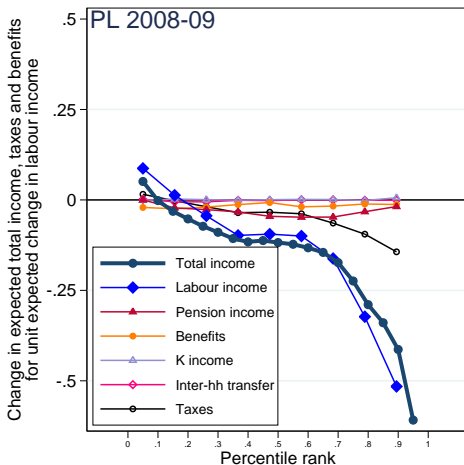
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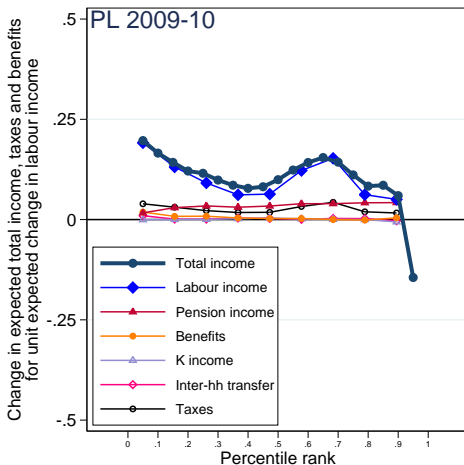
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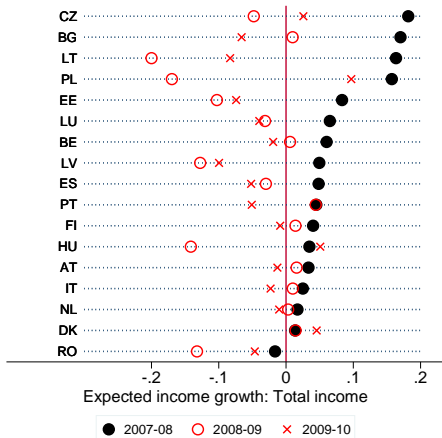
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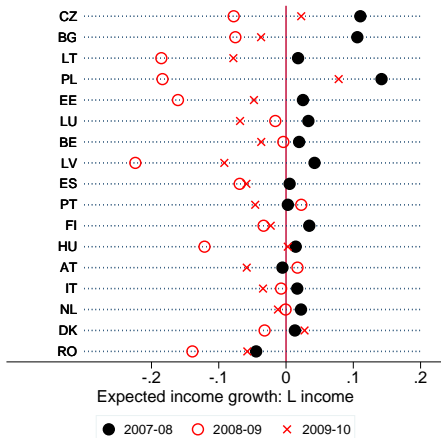


# The size in the change of various sources



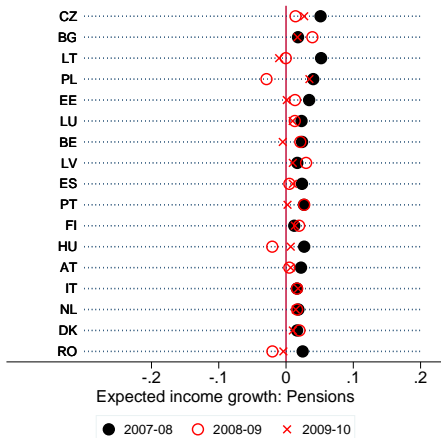
Labour incomes!

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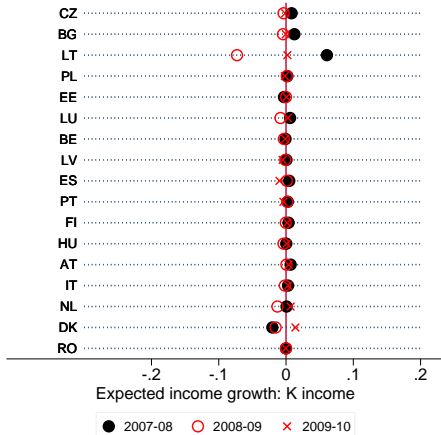
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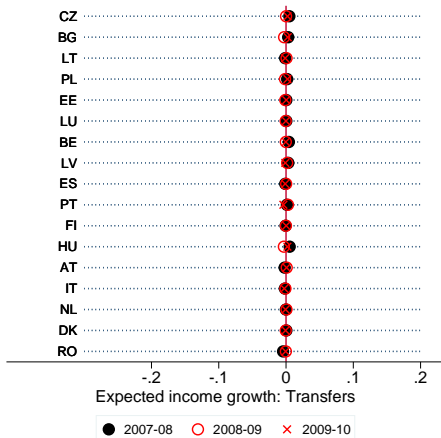
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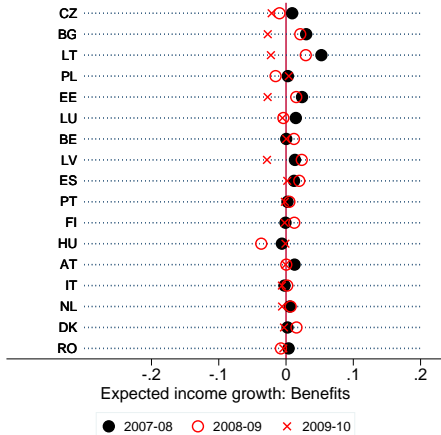


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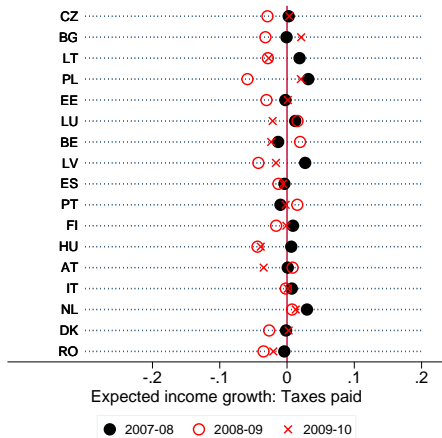
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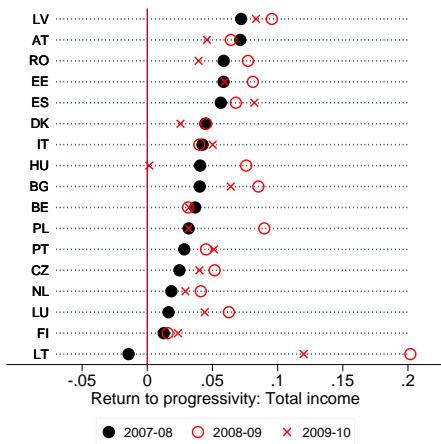
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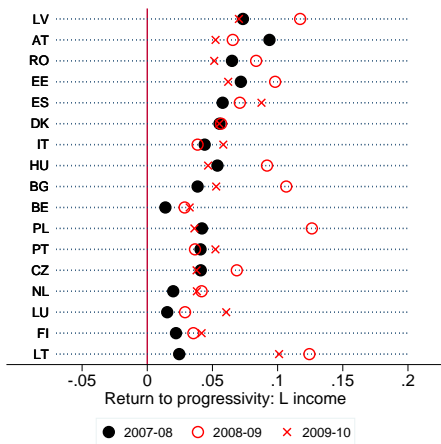


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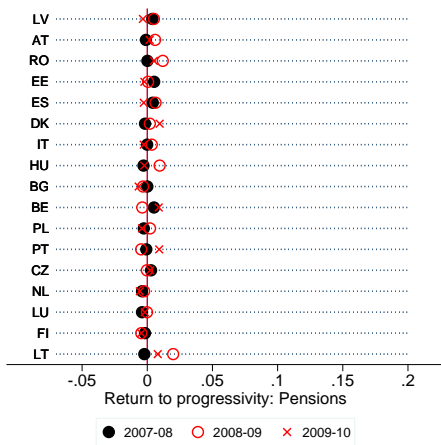
# Contribution to progressivity by sources



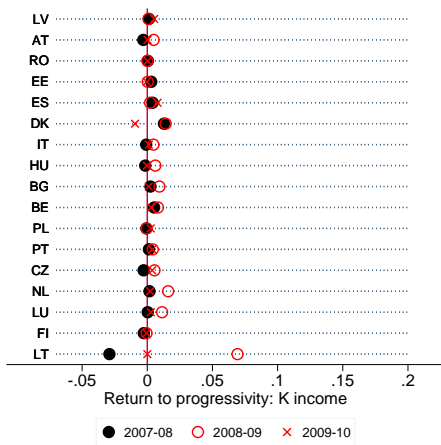
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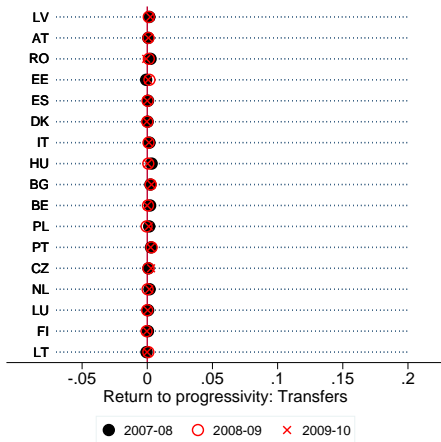
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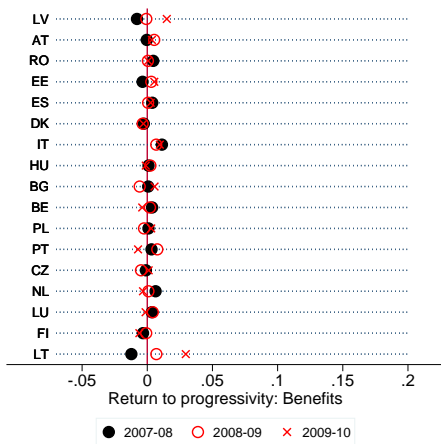


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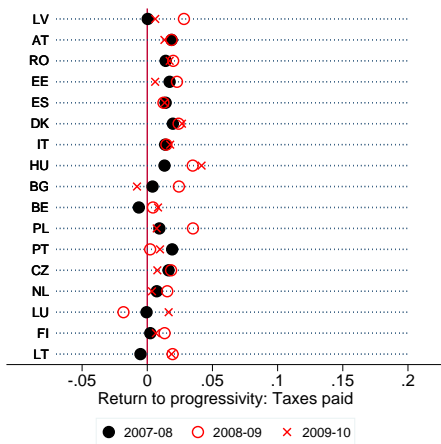




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## Summary

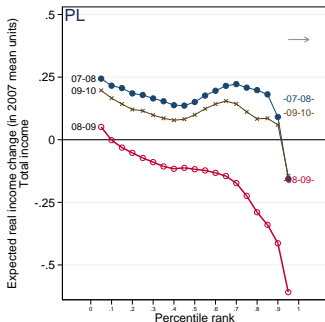
- ▶ Overall results consistent with expectations (surprisingly?)
- ▶ Big fall in (real) income growth in 2008–09 compared to 2007–08 (esp. in ‘new’ MS) , heterogeneous recovery 2009–10
- ▶ Income growth pattern progressive overall (in growth *and* somewhat more so in initial contraction)—but does not imply inequality reduction!
- ▶ Labour income by far most important determinant of income variations (at all initial income levels)
  - ▶ cushioning effect of taxes
  - ▶ effect of benefits seems often short-lived
  - ▶ pensions stable (but not pro-poor)
  - ▶ negligible effect of capital income (at the top)

# Issues

- ▶ Data limitations
  - ▶ small longitudinal samples
  - ▶ attrition, idiosyncrasies in follow up?
  - ▶ measurement error (imputations and register-survey differences)... with single income measurements, small time frame
  - ▶ **yet results seem credible overall**
- ▶ Is there a structure in the patterns across countries?
  - ▶ Nature of GDP shock? Tax-Benefit structure?

# Income growth profiles and $W(H)$

Straightforward graphical instrument



- ▶ Evaluation function  $W(H)$  expressed as

$$W(H) = \int_0^1 \omega(p)m(p)dp$$

- ▶ where  $m(p)$  is an 'income growth profile' (IGP) plotting mean  $\delta$  against initial rank  $p = r_X$

## Attrition

Heterogeneous in size

