Fiscal Consolidation and Income Distribution (WP5 - Task 2)

Francisco J. Goerlich Gisbert

University of Valencia & Instituto Valenciano de Investigaciones Económicas (*Ivie*)

Laura Hernández

Instituto Valenciano de Investigaciones Económicas (*Ivie*)

– Preliminary and incomplete. Please do not quote or cite –

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Motivation

- The ongoing ‘austerity’ debate across Europe has focused mainly on long term growth: timing and strength of the fiscal consolidation.
- We had a presentation on this in London, and there are also related work within this WP.

- But the short run effects austerity on income distribution have been much less studied.
- So this work can be considered as a complement of all papers that look at the relation between ‘austerity’ policies and long run growth.

Motivation

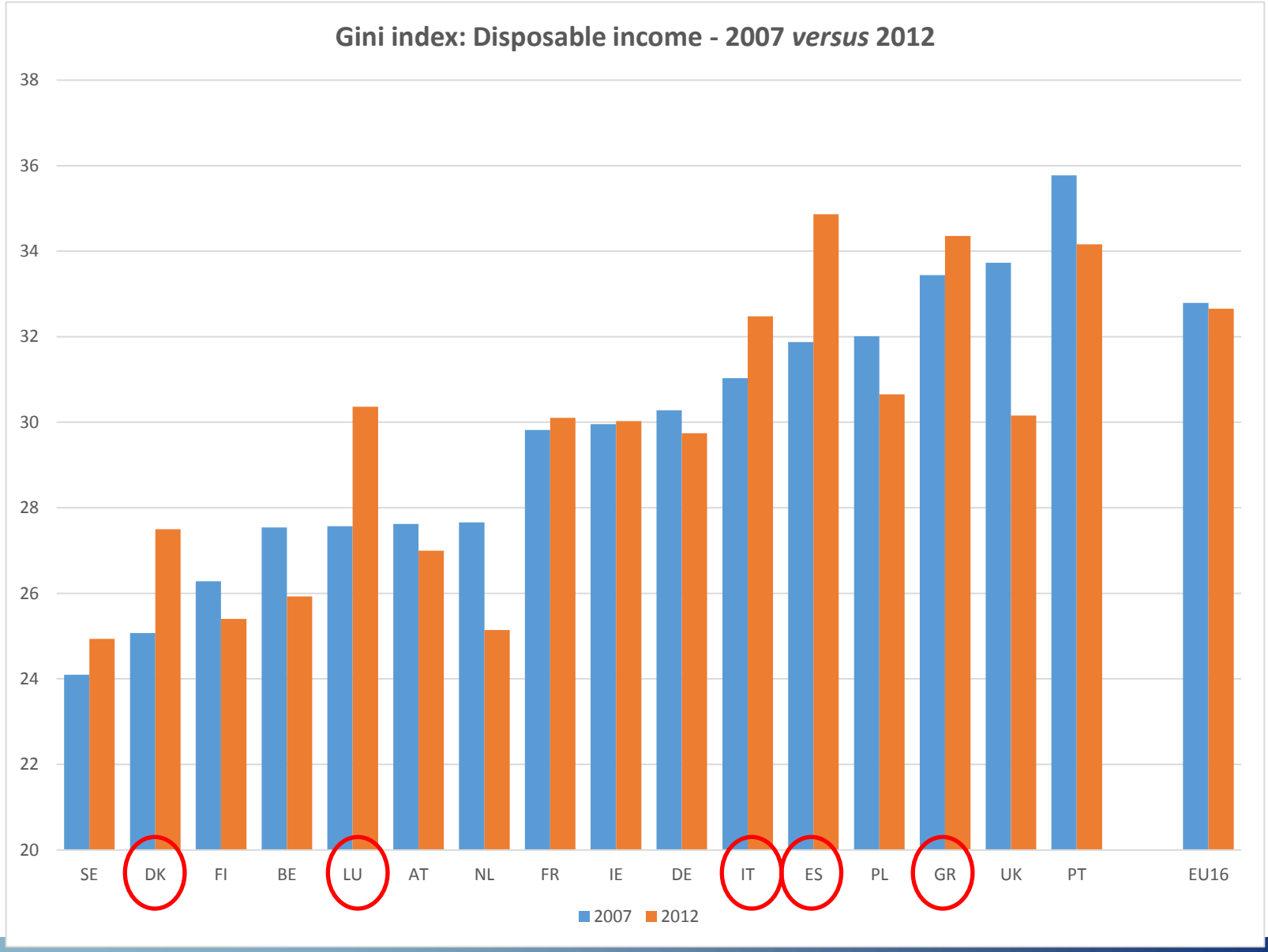
- **Research question**: Examining the effect of cuts in public expenditure on income distribution in several EU countries from a microeconomic point of view.

- **Coverage and data**: EU-SILC and public expenditure from COFOG and ESSPROS. Countries: EU15 + Poland. Temporal coverage: 2004-2013.

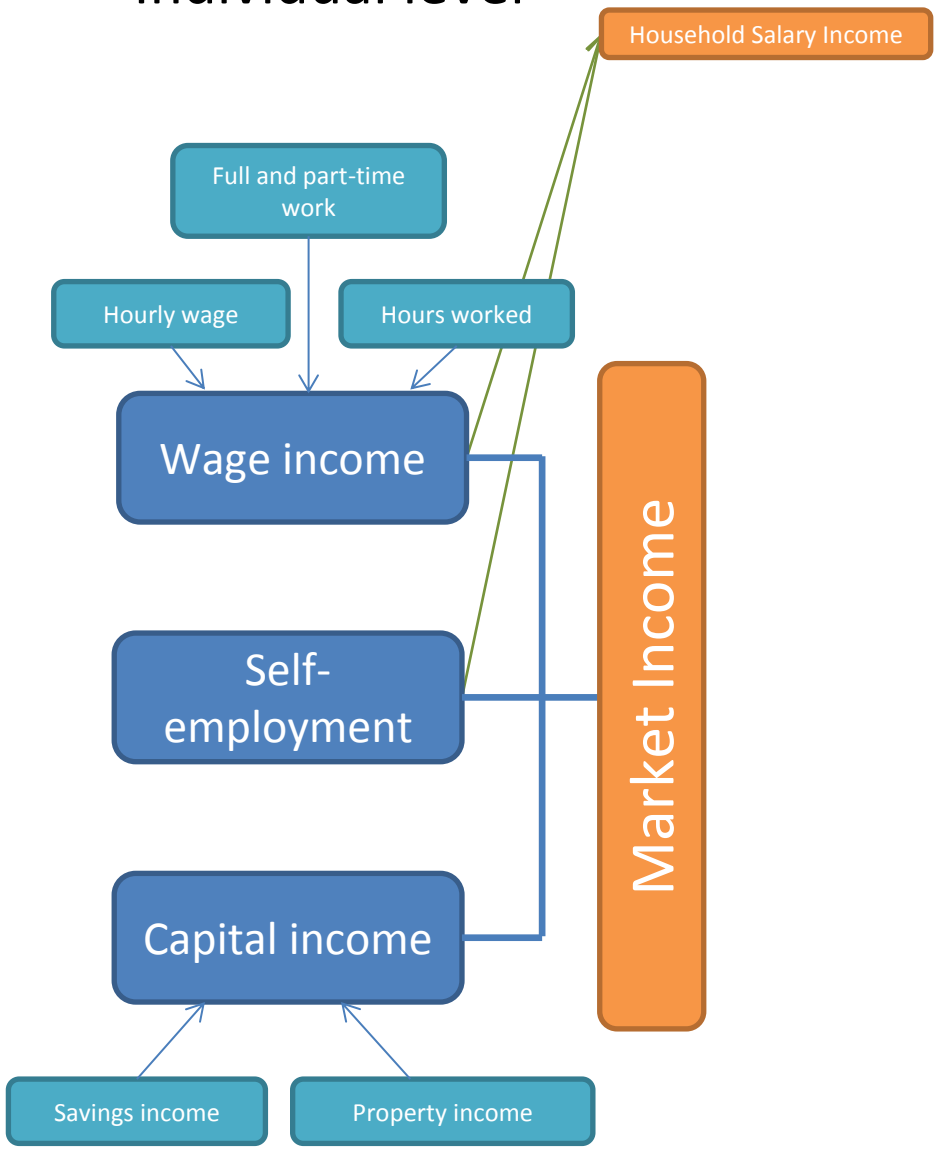
Motivation

- We know that inequality has grown by a huge amount in some EU countries, specially in those that have been hit harder by the crisis (Greece, Spain, Portugal, Ireland), but also, to a less extent, in other European countries.

- A close look at the data (EU-SILC) allow us to see that the experience in Europe is quite diverse, at least if we focus on **disposable income**.


Gini index: Disposable income - 2007 versus 2012
38
36
34
32
30
28
26
24
22
20
SE
DK
FI
BE
LU
AT
NL
FR
IE
DE
IT
ES
PL
GR
UK
PT
EU16
2007
2012

Individual level



Motivation

- The increase in inequality is much more evident if we look at market income (which is mainly labour income).

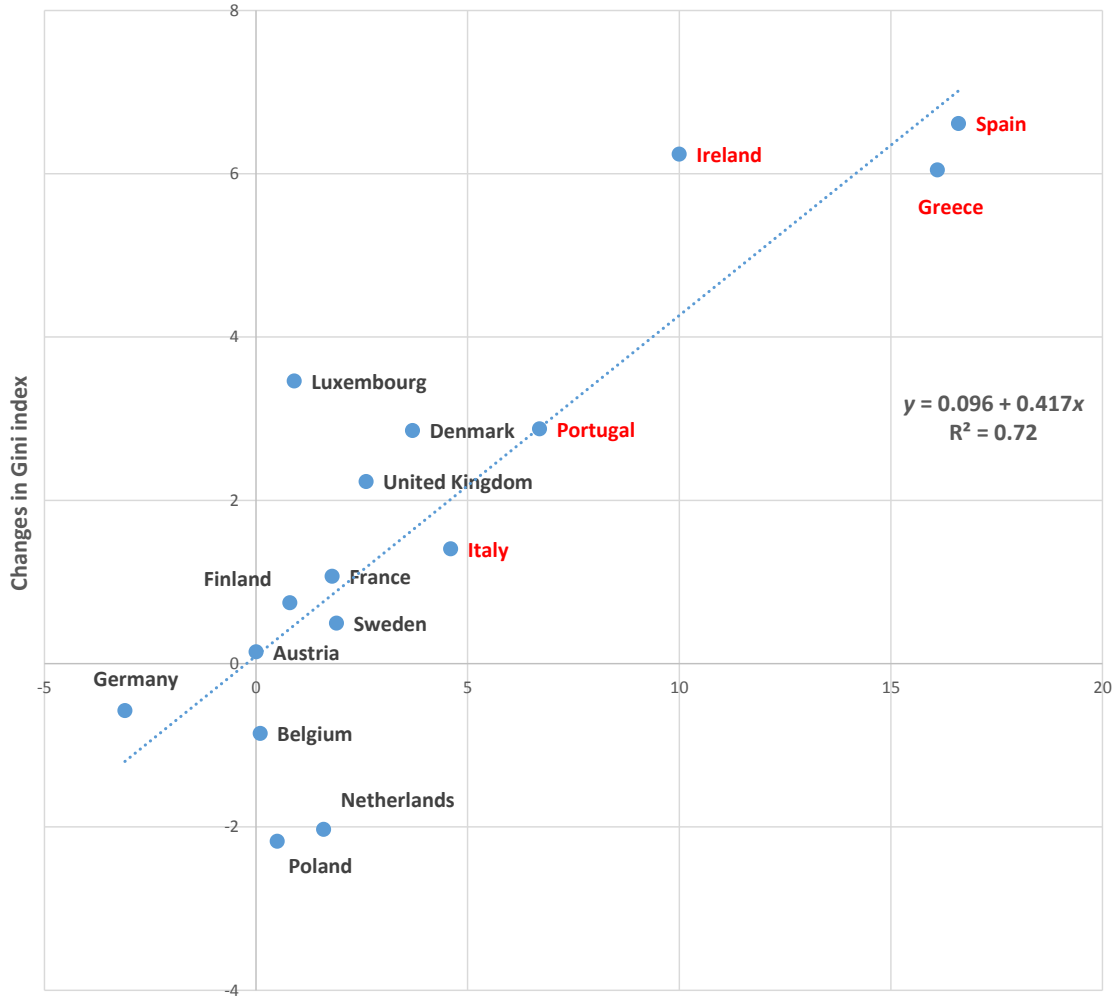

Gini index: Market Income - 2007 versus 2012
60
55
50
45
40
35
30
DK
LU
NL
FI
SE
AT
ES
IT
PL
FR
BE
GR
IE
PT
UK
DE
EU16
2007
2012

Motivation

- Changes in inequality in market income have been driven (almost) entirely by the behaviour in the labour market. In particular, by changes in unemployment.
- Which is specially true for *PIIGS* countries.

Fiscal Consolidation and Income Distribution

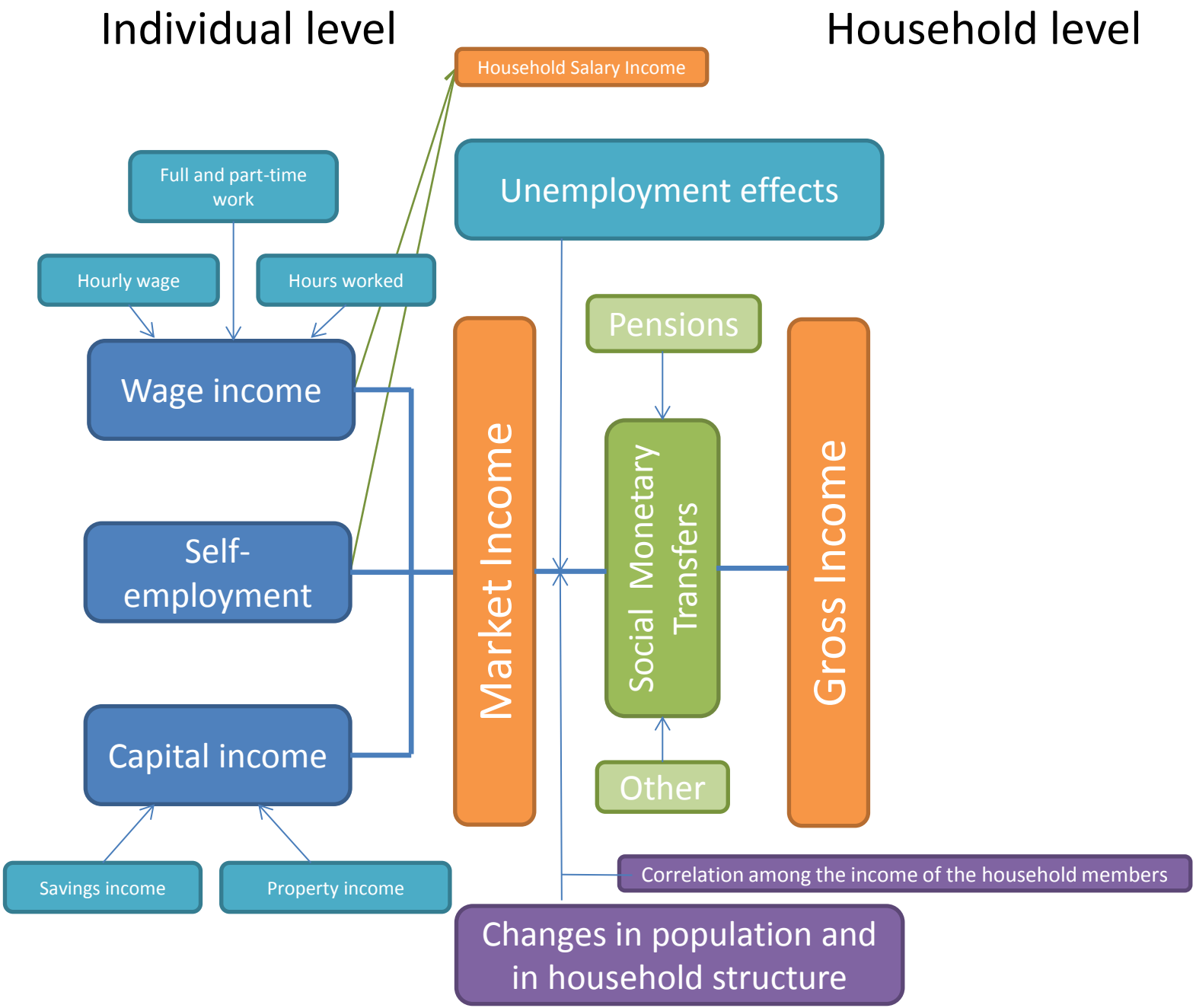
Figure 3 - Changes in inequality in market income (Gini) *versus* changes in unemployment rate - 2007-2012



- From market income to disposable income, there are two major public interventions:

1. **Cash transfers** to individuals/households.

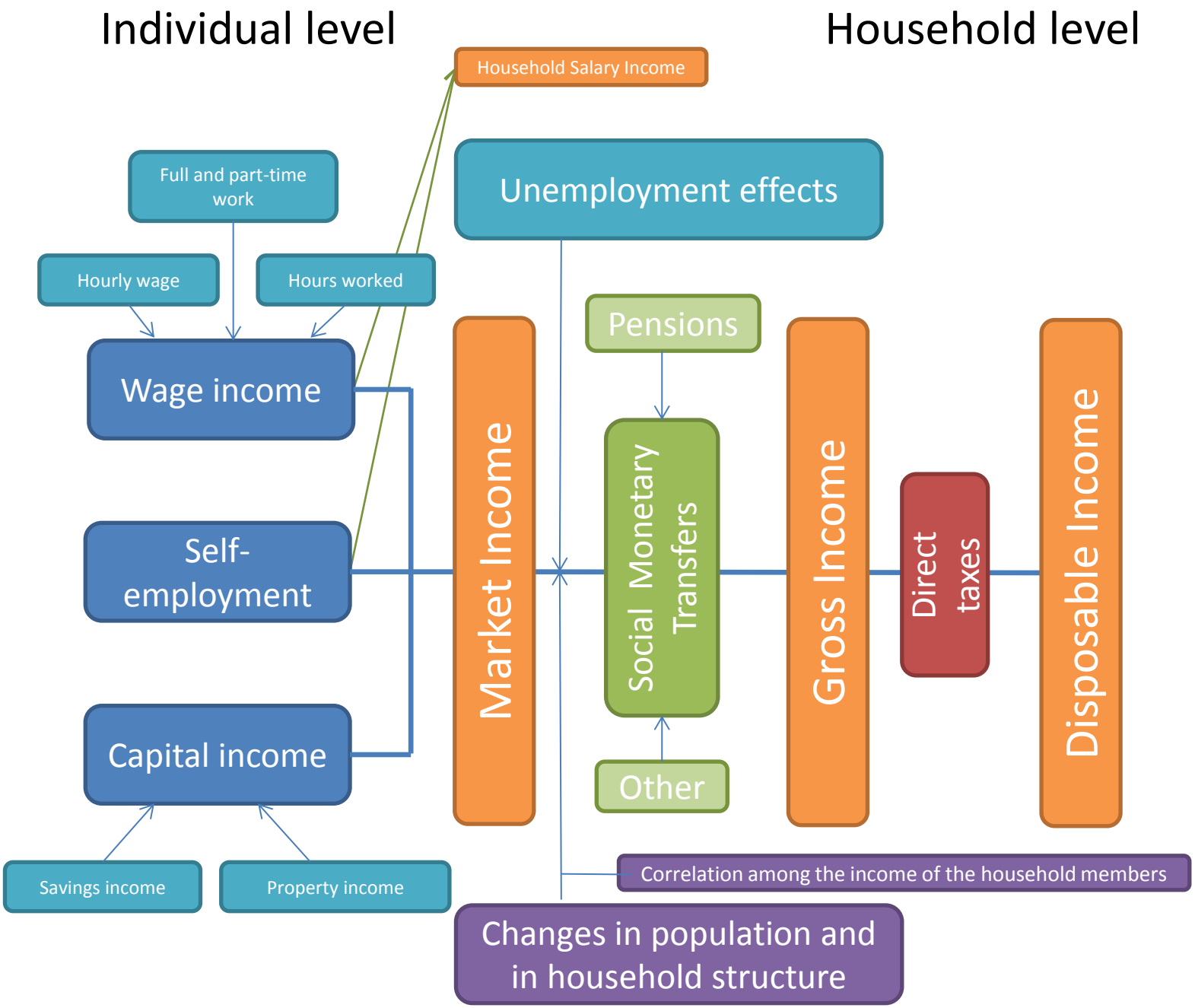
Figure 2. Analytical scheme for household income distribution



- From market income to disposable income, there are two major public interventions:

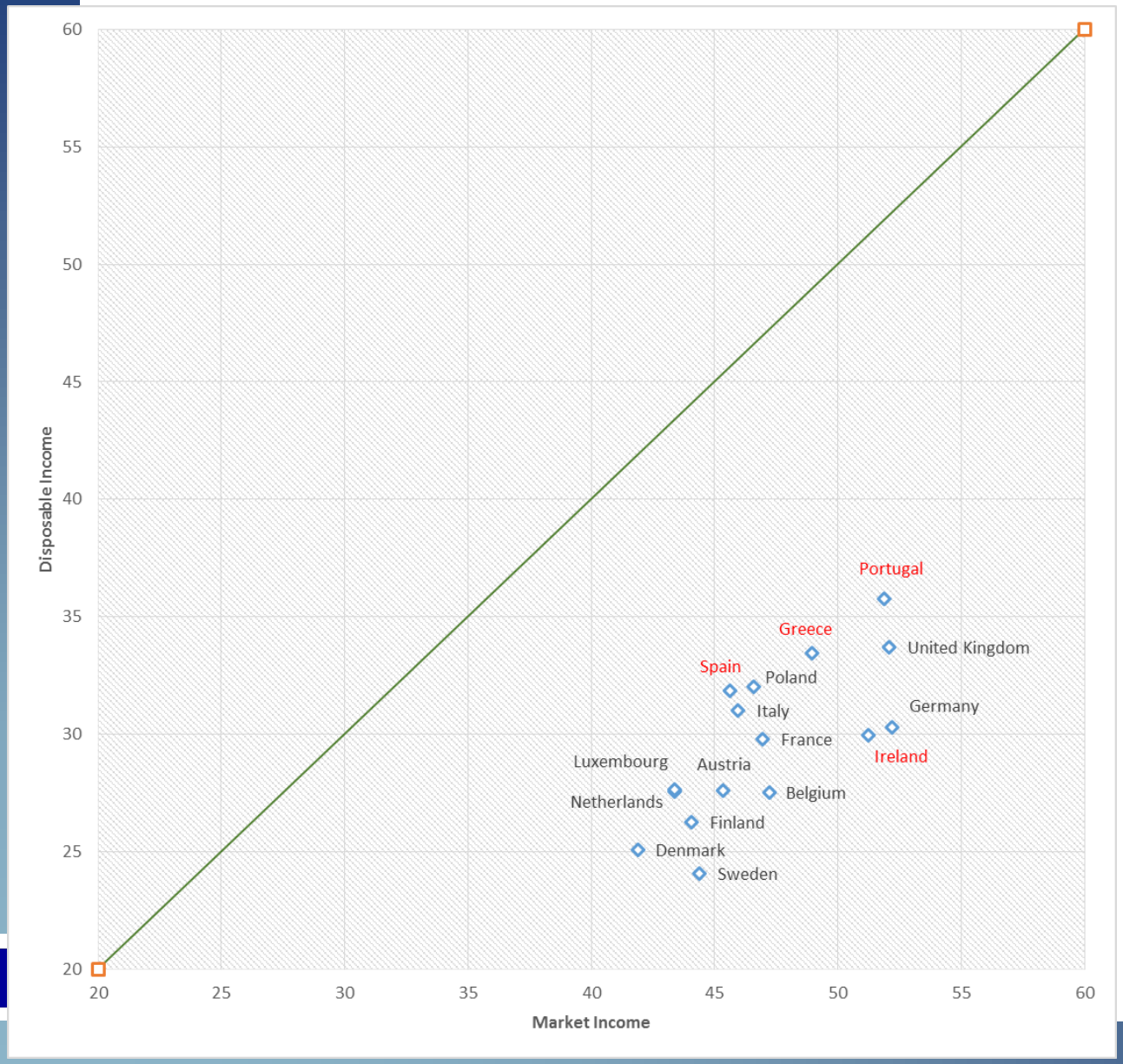
1. **Cash transfers** to individuals/households.
2. **Direct taxes** (personal income tax).

Figure 2. Analytical scheme for household income distribution



- We know that the tax-benefit system is redistributive.
- This is so before the crisis and also during the crisis, the question is if this redistributive effect has been altered as a consequence of fiscal consolidation policies.

- And apparently this has not been the case!

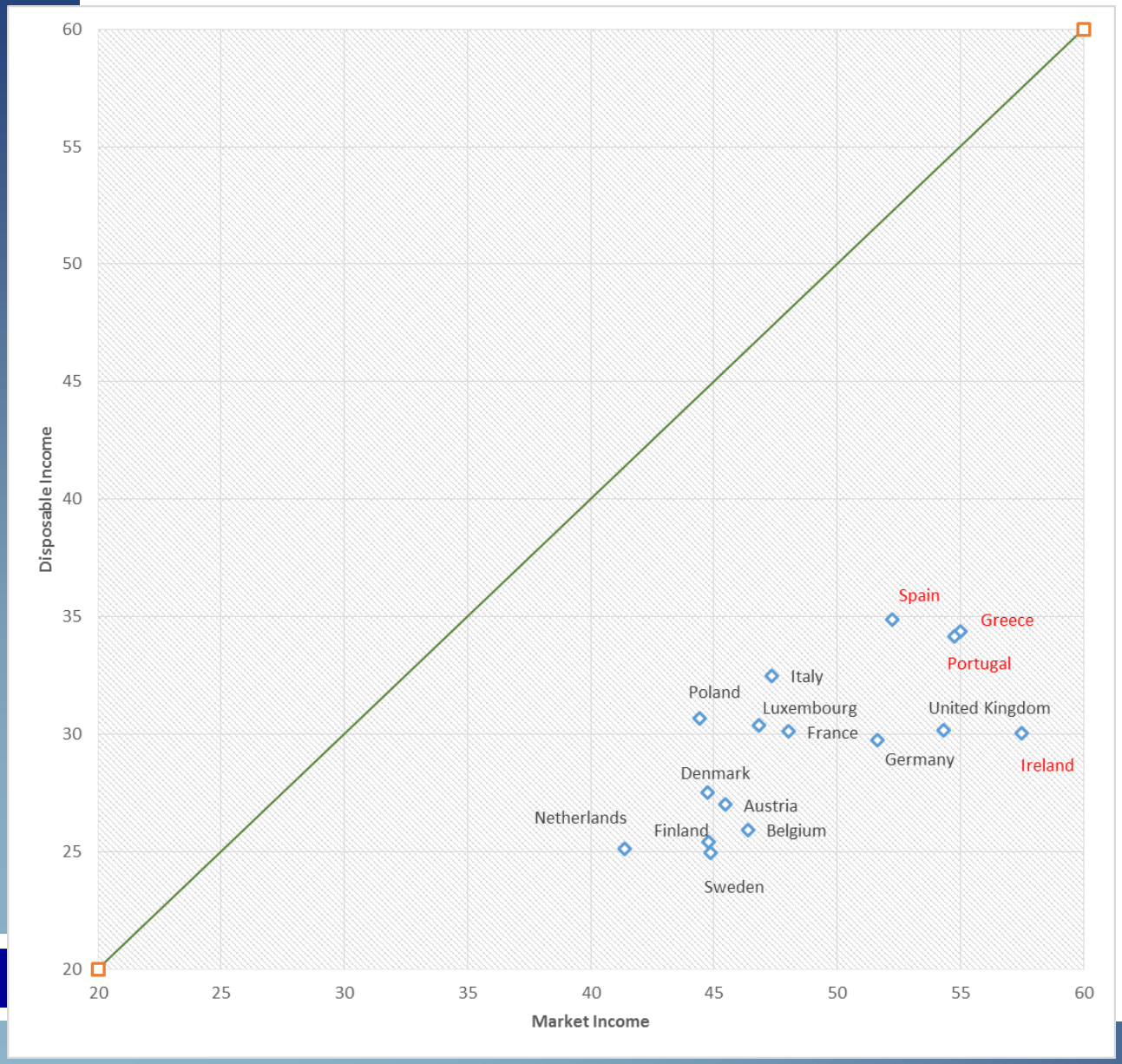


Gini -2007

Disposable income

versus

Market income



Gini -2012

Disposable income

versus

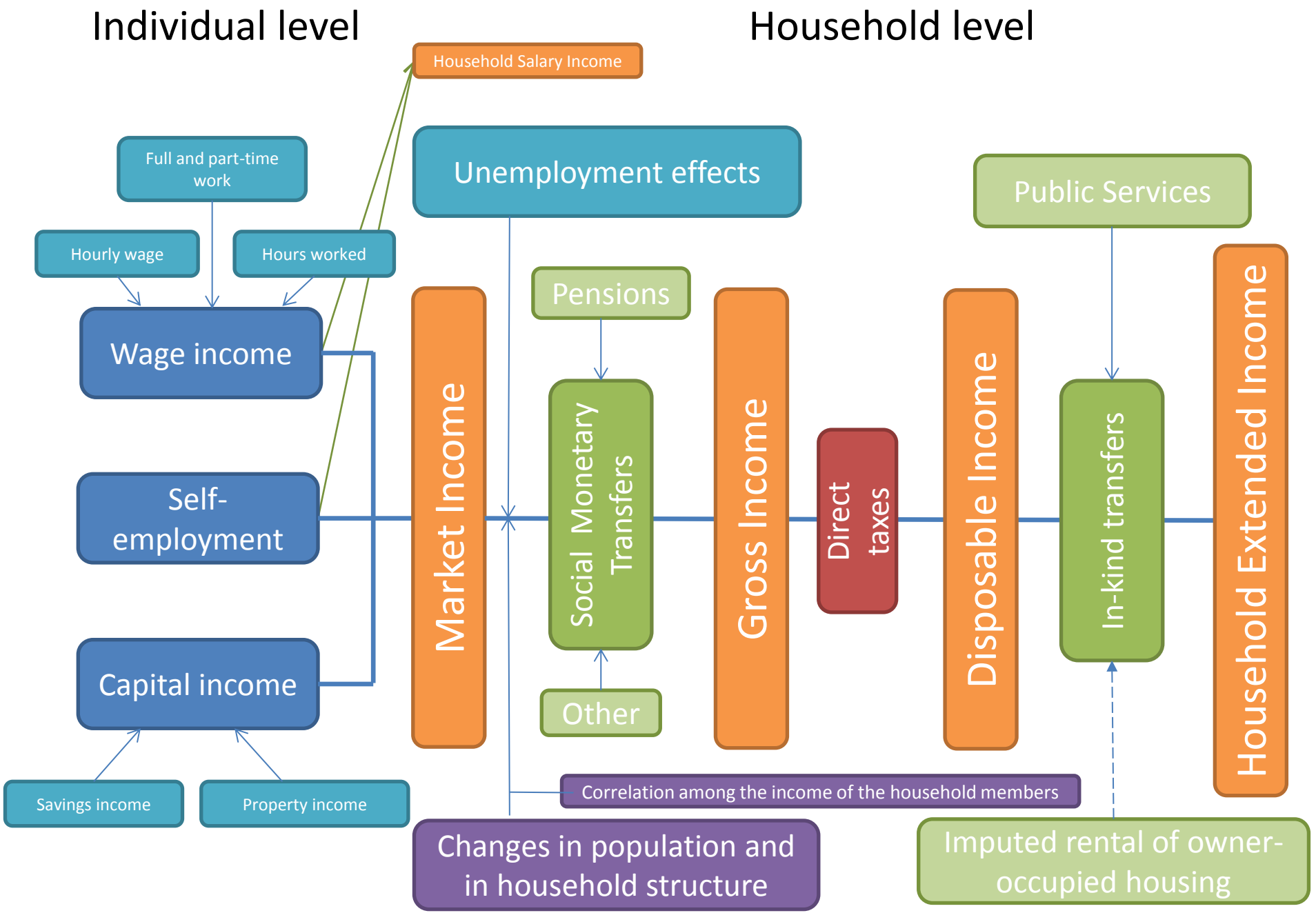
Market income

- While the impact of fiscal consolidation policies on **relative inequality** can be described as moderate or even equality enhancing, this is far from saying that the fiscal adjustment programmes have been a success in overall distributional terms.

- The scale of the reduction in income levels is large, specially from people at the bottom of the distribution, and anchored poverty increases.

- Our concern here is not, however, the redistributive effect of the tax-benefit system, but the third channel by which the public sector affects the income of households: in-kind benefits supplied by the public sector (education, health,…)

Figure 2. Analytical scheme for household income distribution



- In-kind transfers are not directly paid by their users, but they are financed through taxes.
- These are usually not taken into account in the distributional analysis, because incorporating them in household income is not a trivial task.
- However, in-kind transfers have important redistribution effects (even if they are not designed for redistribution), since they are not used proportionately to individual´s income.
- Analyzing the effects of public cuts on the distribution of **extended income**, that includes an **imputation for the in-kind value of the public services**, is the main object of this piece of research.
- The works on this question is scant, and always refers to a period before the crisis.

- The exercise consists of the following **steps**:
  - **(i)** **Services** to include in extended income. Which ones?
    - Education,
    - Health,
    - Elderly Care,
    - Early Childhood Education and Childcare,
    - Social Housing.

- Including all of them is probably too ambitious, but we have almost finished the first two (education and health).

- The exercise consists of the following **steps**:

  (ii) **Valuation**: How should one valuate the benefits households derive from public social services?

- The standard practice is to value the benefit deriving from public services at their **production costs**, which means that its measurement is based on the inputs used to provide these services rather than on the actual output produced.
- In other words, one dollar spent on services is assumed to equal one dollar worth to individuals.

- This is **the only real practical choice**, given the present state of National Accounts. So we will follow it.

- The exercise consists of the following **steps**:

  (ii) **Valuation**: How should one valuate the benefits households derive from public social services?

- Keep in mind two limitations:
  - Production costs do not necessarily agree with the subjective valuation of these services by the consumers.
  - This approach neglects differences within and across countries in the quality and efficiency in the provision of these services.

Data: COFOG and ESSPROS

- The exercise consists of the following **steps**:

  (iii) Imputation: How should one allocate these benefits to individuals.

- The literature has discussed two approaches, depending on the type of service:
  - '**actual consumption approach**': allocates the value of public services to individuals using these services. Beneficiaries need to be identified.
  - '**insurance value approach**': allocates an 'insurance value' of coverage to each person based on specific characteristics. It is based on the notion that what the government provides is equivalent to funding an insurance policy where the value of the premium is the same for everybody sharing the same characteristics.

- The exercise consists of the following **steps**:

  (iii) Imputation: How should one allocate these benefits to individuals.

- Each method will depend on the particular service:
  - Education → actual consumption approach
  - Health → insurance value approach
  - Elderly Care → insurance value approach
  - Early Childhood Education and Childcare → actual consumption approach
  - Social Housing → actual consumption approach

- The exercise consists of the following **steps**:

  (iv) Distribution of extended income.

- The imputation will be done at the individual level, and then aggregated at household level.
- The distribution will be analyzed in terms of consumption units (OECD equivalence scale).
- The same equivalence scale will be applied to cash income than to the imputed valuation of public services (extended income).

- The exercise consists of the following **steps**:

  (iv) Distribution of extended income.

- Three aspects need to be considered at this stage:

  (a) levels, i.e. by how much extended household disposable income exceeds initial disposable income?,

  (b) distributional effects, i.e. are publicly provided services equalizing?, and

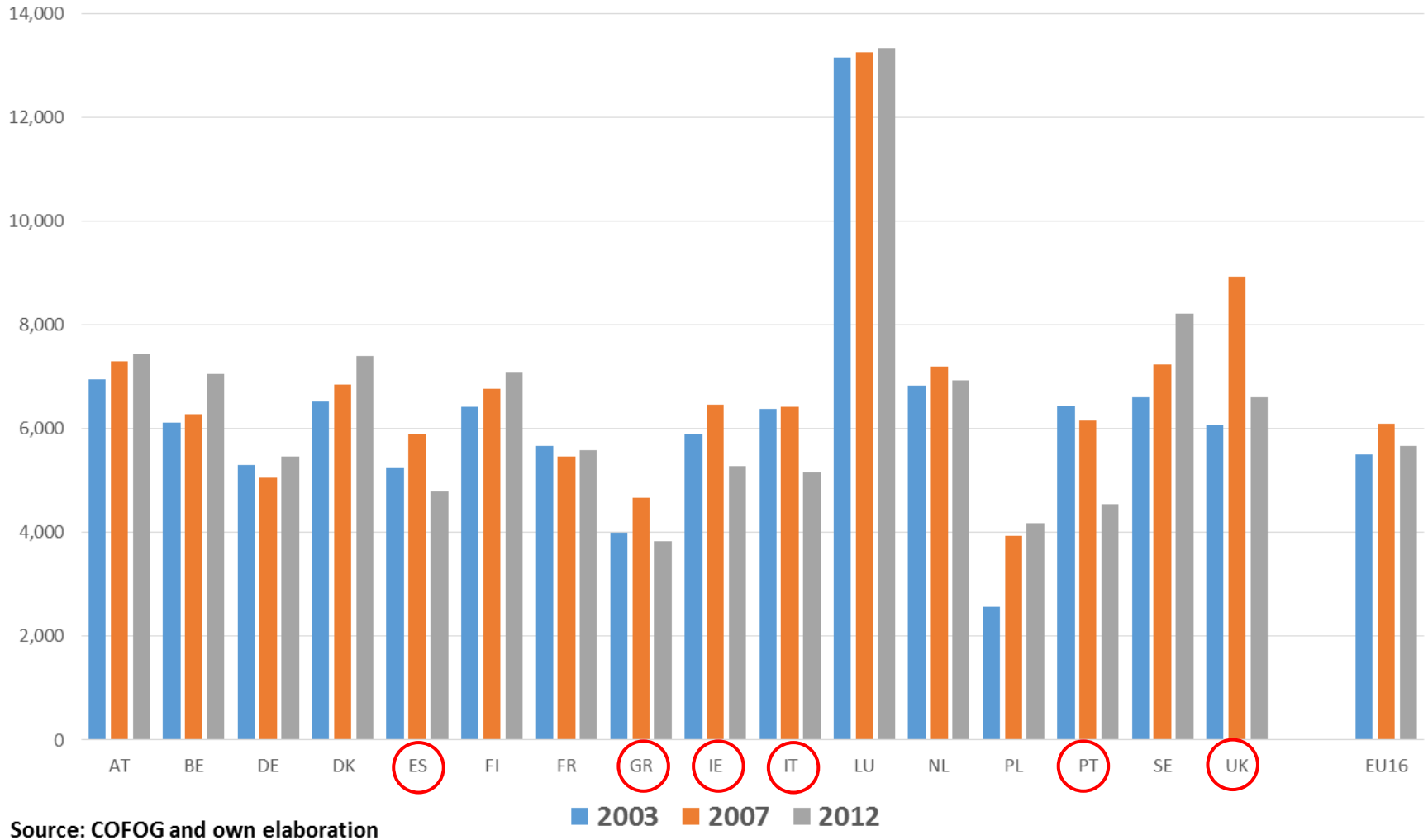
  (c) Are these effects different previous to the crisis than in the **crisis** years?

- **Education**: 'actual consumption approach'
- COFOG data: We distinguish between (i) Pre-primary and Primary education, (ii) Secondary and (iii) Tertiary education.
- Expenditure data is deflated and PPS adjusted, and in-kind services are determined by subtracting cash transfers (mainly grants).
- Given students by type of education we calculate the average expenditure per student per country, year and type of education.

- Average in-kind benefits per student vary a lot among EU countries.

Fiscal Consolidation and Income Distribution: Education

Figure 12. In-kind public expenditure on education (all levels) per student. 2012€-PPS.



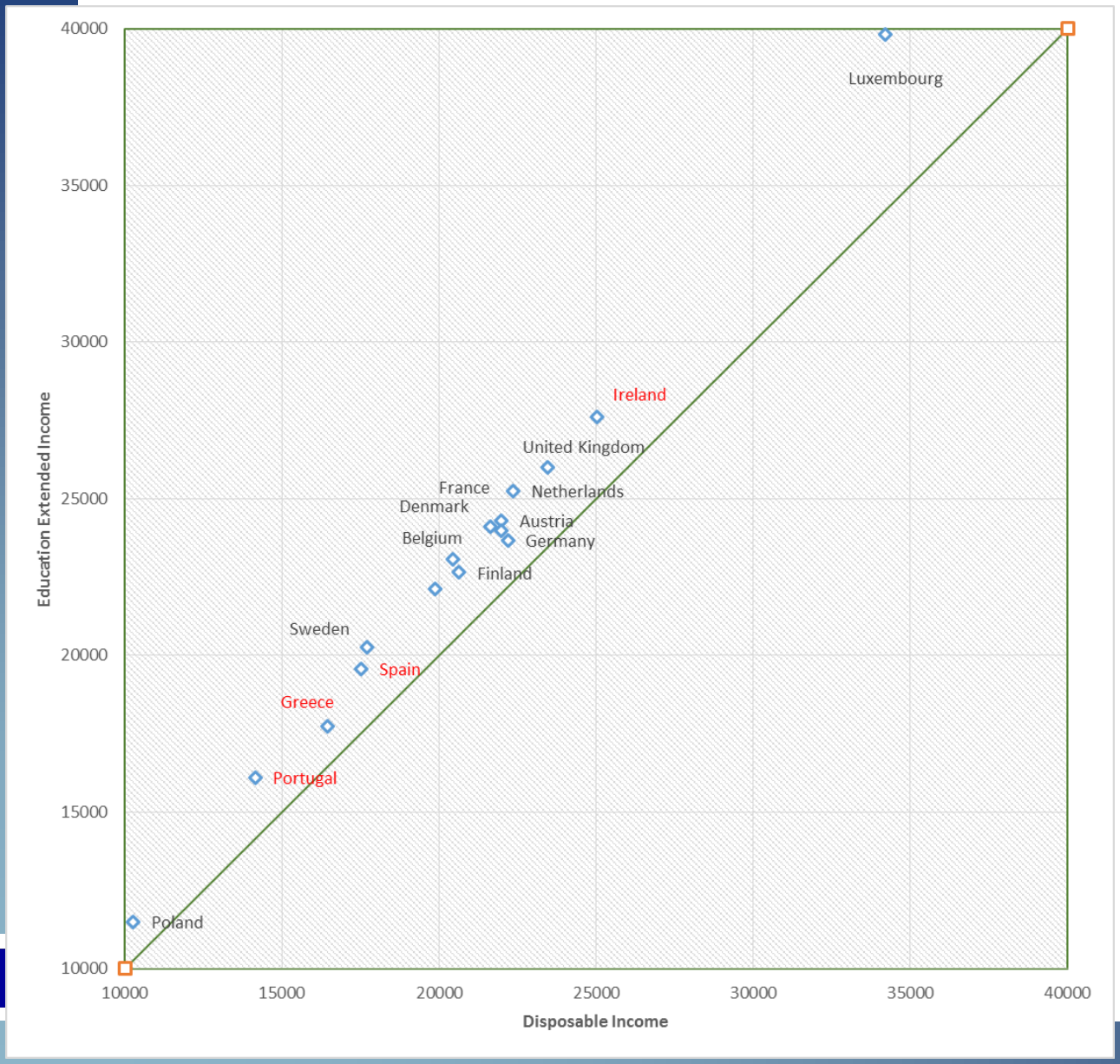
Source: COFOG and own elaboration

- **Education**: 'actual consumption approach'
- The fall in expenditure per student is only visible in some countries: Spain, Greece, Ireland, Italy, Portugal and the United Kingdom.
- With the exception of the UK, in the rest of the countries expenditure in education is well below the value in 2003.

- These mean values are imputed into EU-SILC records by identifying students within the survey. For compulsory education this is done by age, for the rest we use the 'Student' status in the EU-SILC.

- **Education**: 'actual consumption approach'

- After imputation, disposable income increases on average from 12% in 2003 to 10% in 2012.
- Heterogeneity between countries is relatively high.
- At country level, the proportional increase in disposable income tends to be higher in countries with lower income.
- The relative increase remains quite stable along the years: Why? Because disposable income and educational services have evolved roughly in line within a given country, so in relative terms we don´t see adverse effects.



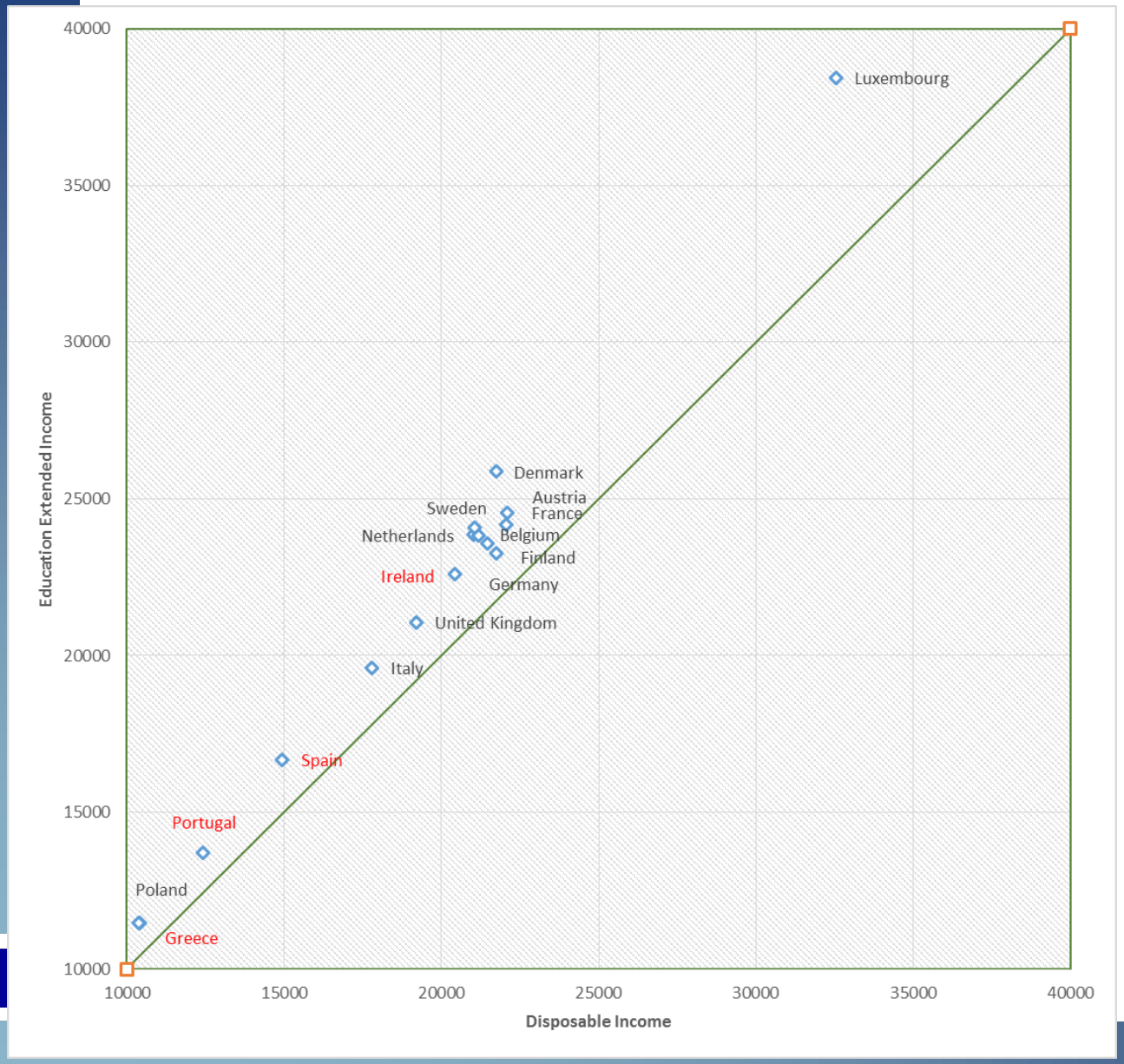
Income - 2007

Education

Extended income

versus

Disposable income



Income - 2012

Education

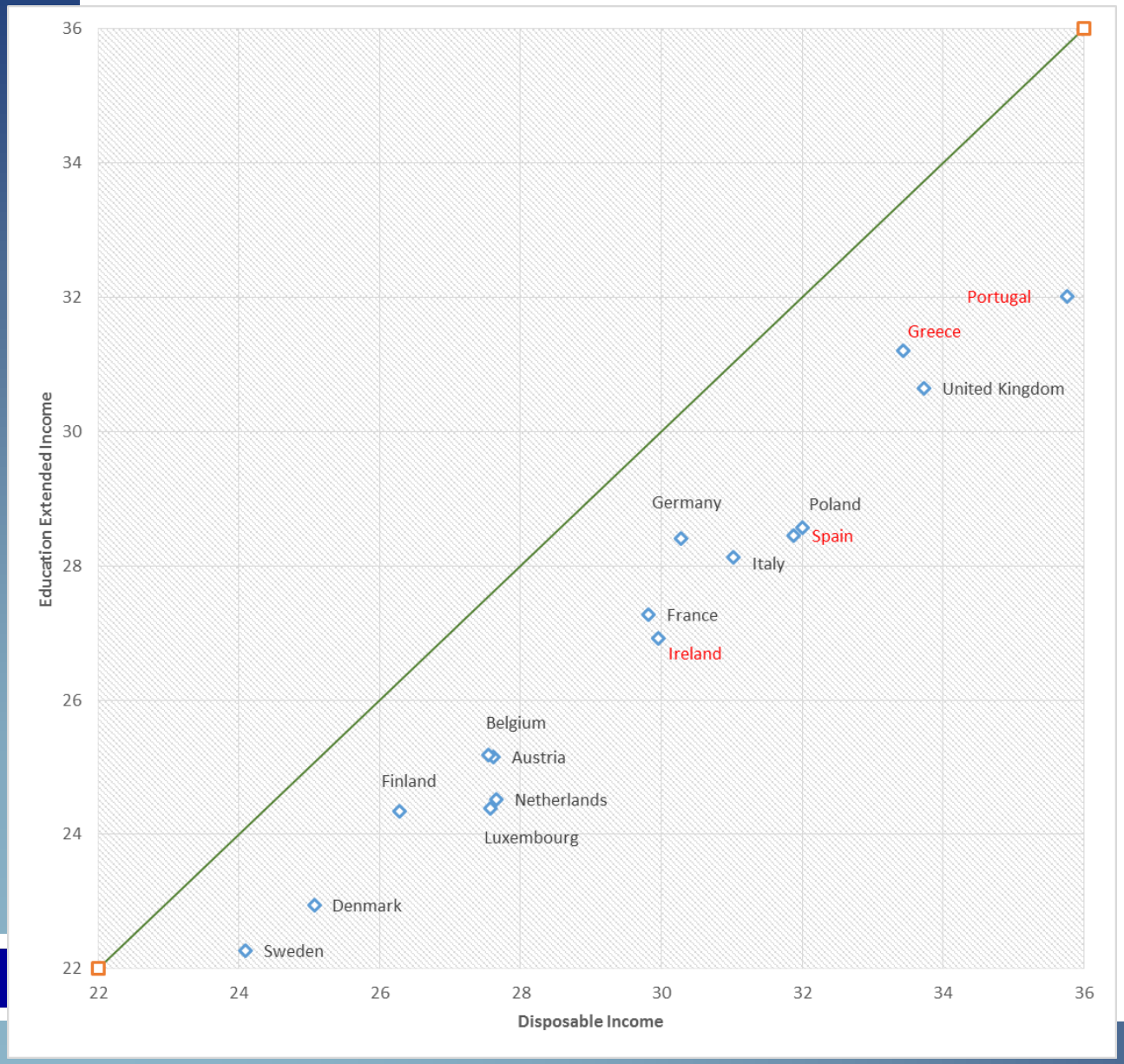
Extended income

versus

Disposable income

- **Education**: 'actual consumption approach'
- In-kind benefits in education are quite evenly distributed across the different income groups.
- There is a slight tendency of poorer families to receive more for Primary and Secondary education (greater family sizes).
- This effect is less clear-cut for Tertiary education.
- As a consequence, since benefits of equal size will, *ceteris paribus*, translate into larger proportional increases in the income of poorer households, relative inequality is reduced by a significant amount.
- This effect is remarkably stable through time!, so we don´t detect that the inequality reducing effect of expenditure in education has been reduced during the crisis.

Fiscal Consolidation and Income Distribution: Education



Gini - 2007

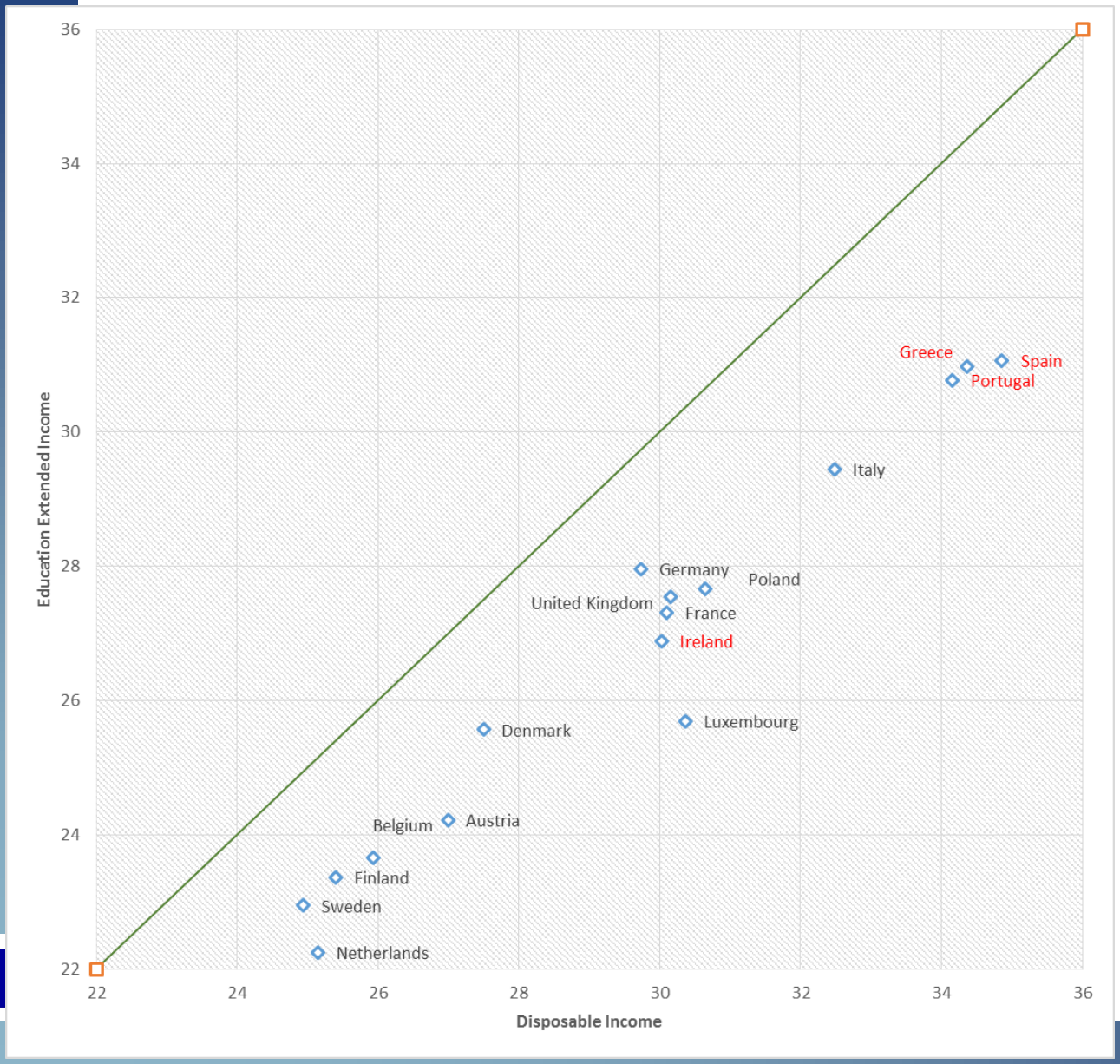
Education

Extended income

versus

Disposable income

Fiscal Consolidation and Income Distribution: Education



Gini - 2012

Education

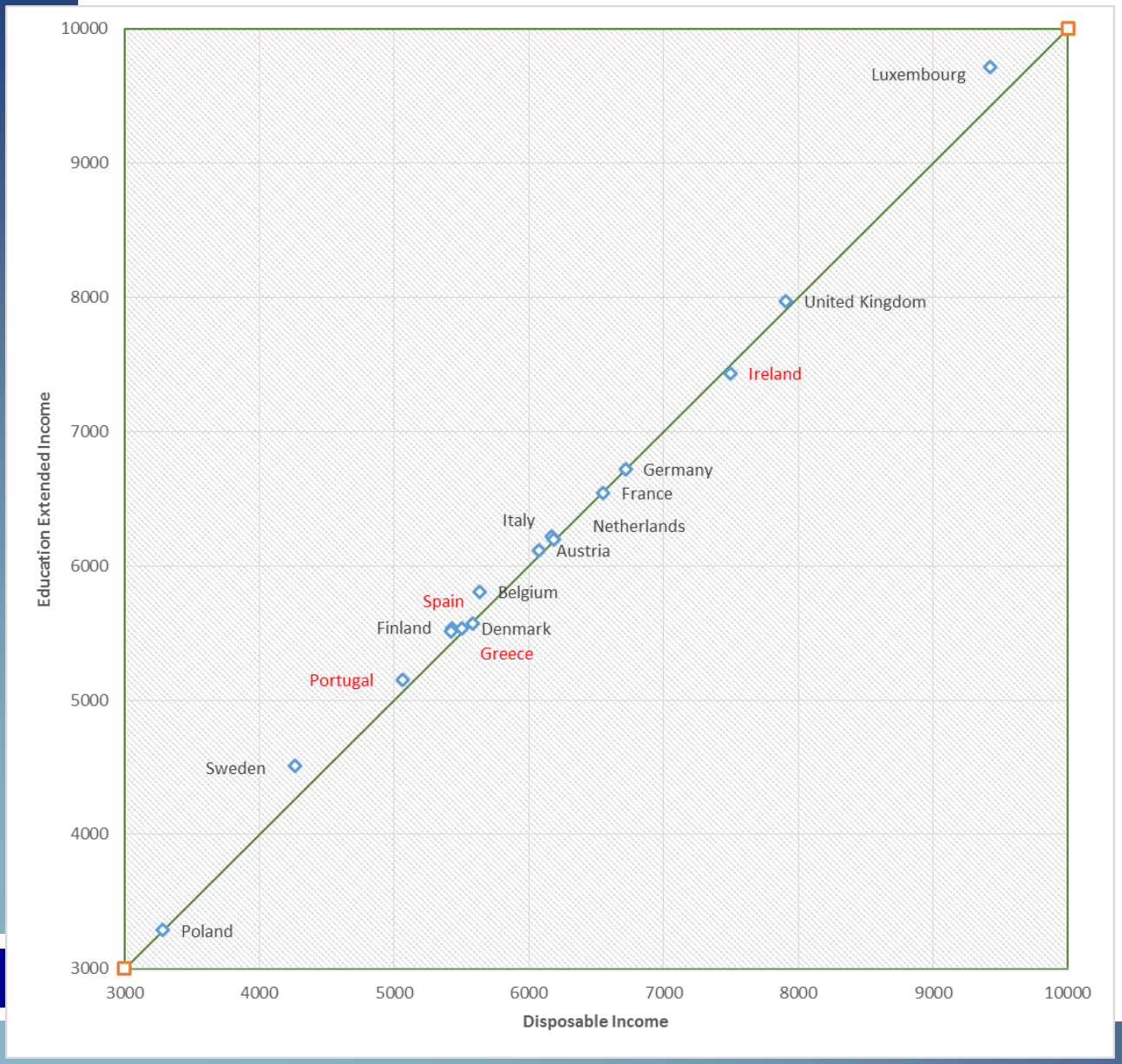
Extended income

versus

Disposable income

- **Education**: 'actual consumption approach'
- This may be seen as counterintuitive, but it is the consequence of focusing on relative inequality, so levels don´t matter.

- In fact, absolute inequality (absolute Gini) remains constant, and the level of absolute inequality (levels matters here!) has fallen, specially for the *PIIGS* countries.



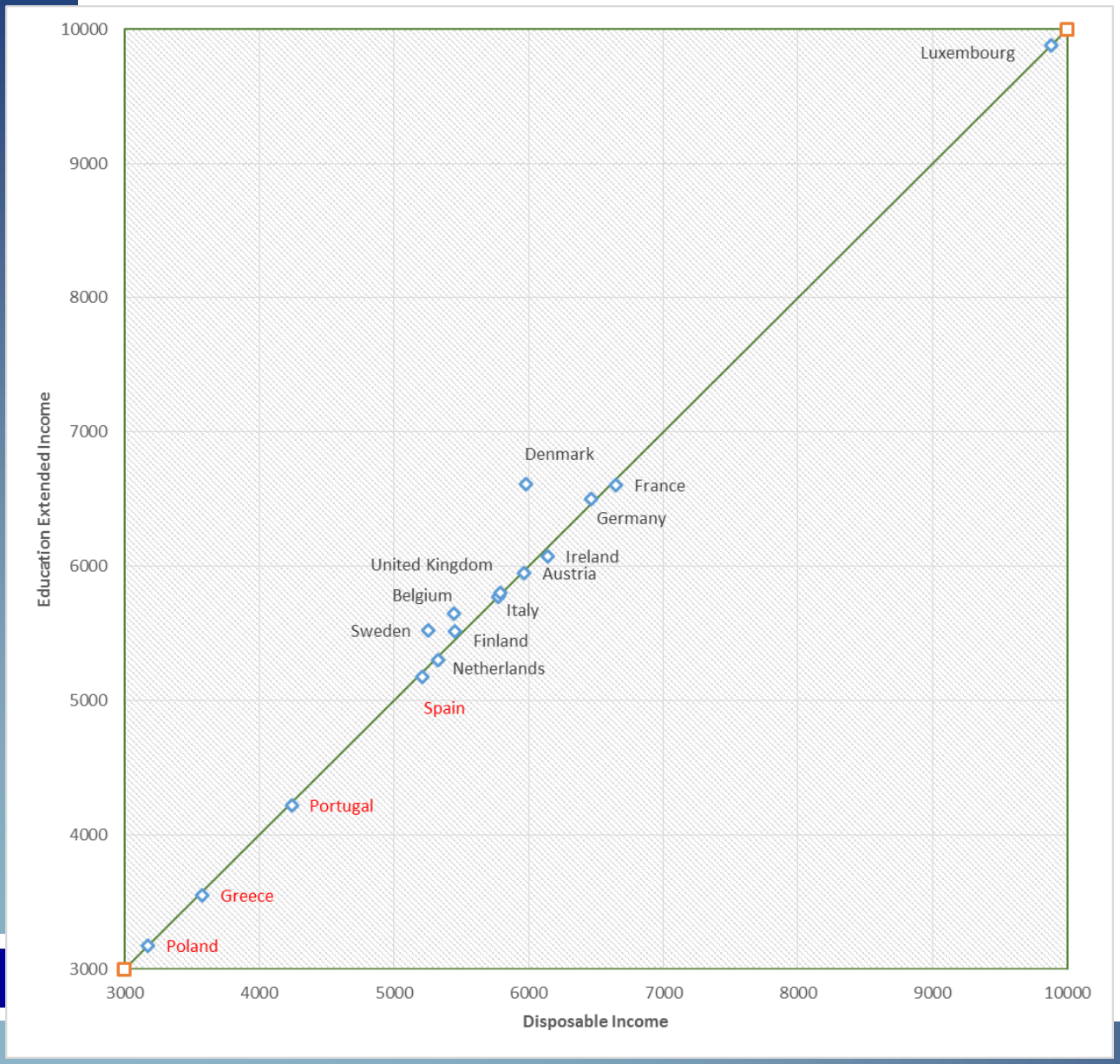
Absolute Gini - 2007

Education

Extended income

versus

Disposable income



Absolute Gini - 2012

Education

Extended income

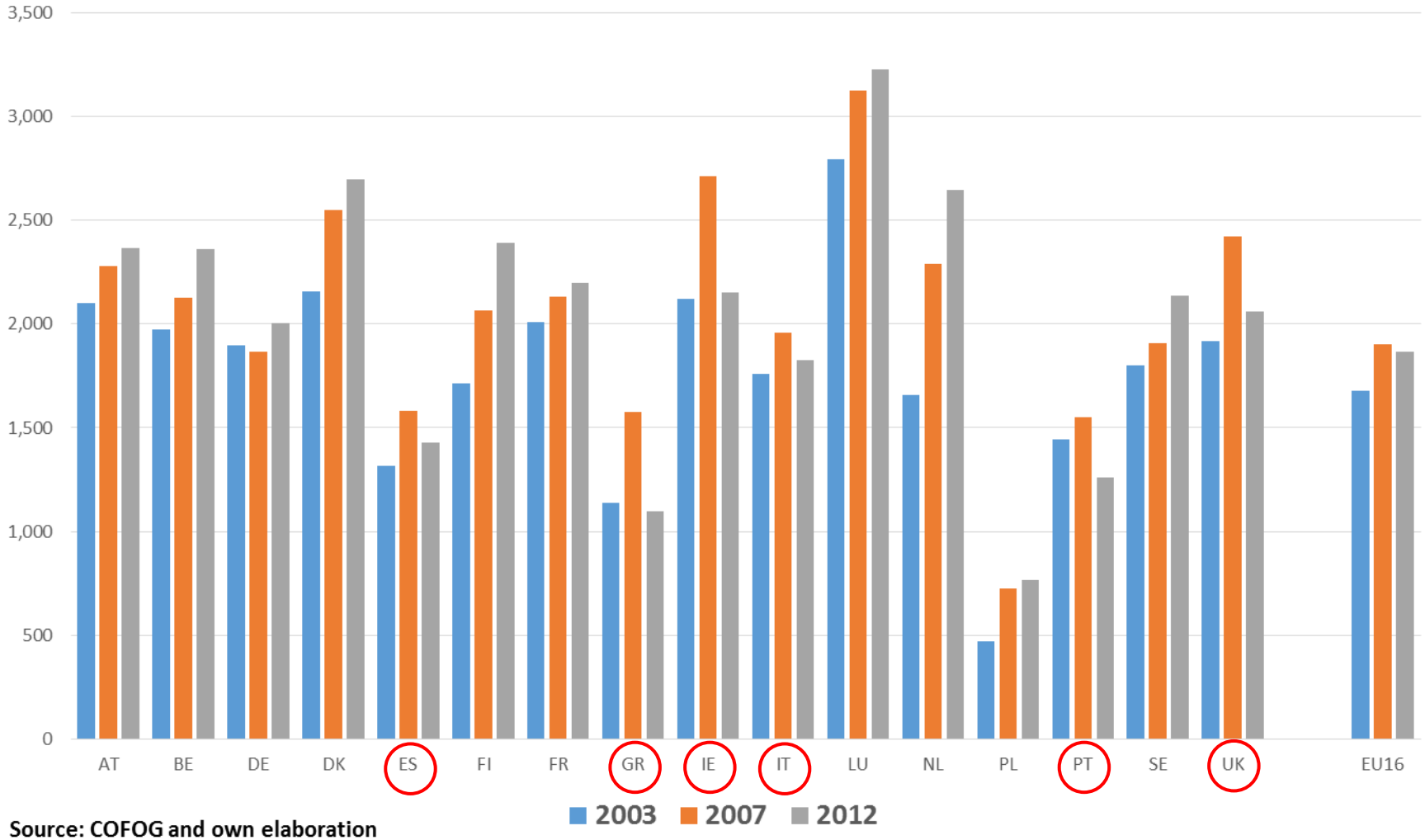
versus

Disposable income

- **Health**: ‘insurance value approach’
- COFOG data: We distinguish between (i) Pharmacy, (ii) Primary care (outpatients services) and (iii) Hospital Services.
- Expenditure data is deflated and PPS adjusted.
- Health is imputed using the ‘insurance value approach’, ideally this requires age profiles by gender, type of service and country.

Fiscal Consolidation and Income Distribution: Health

Figure 17. In-kind public expenditure on health (all components) per capita. 2012€-PPS.



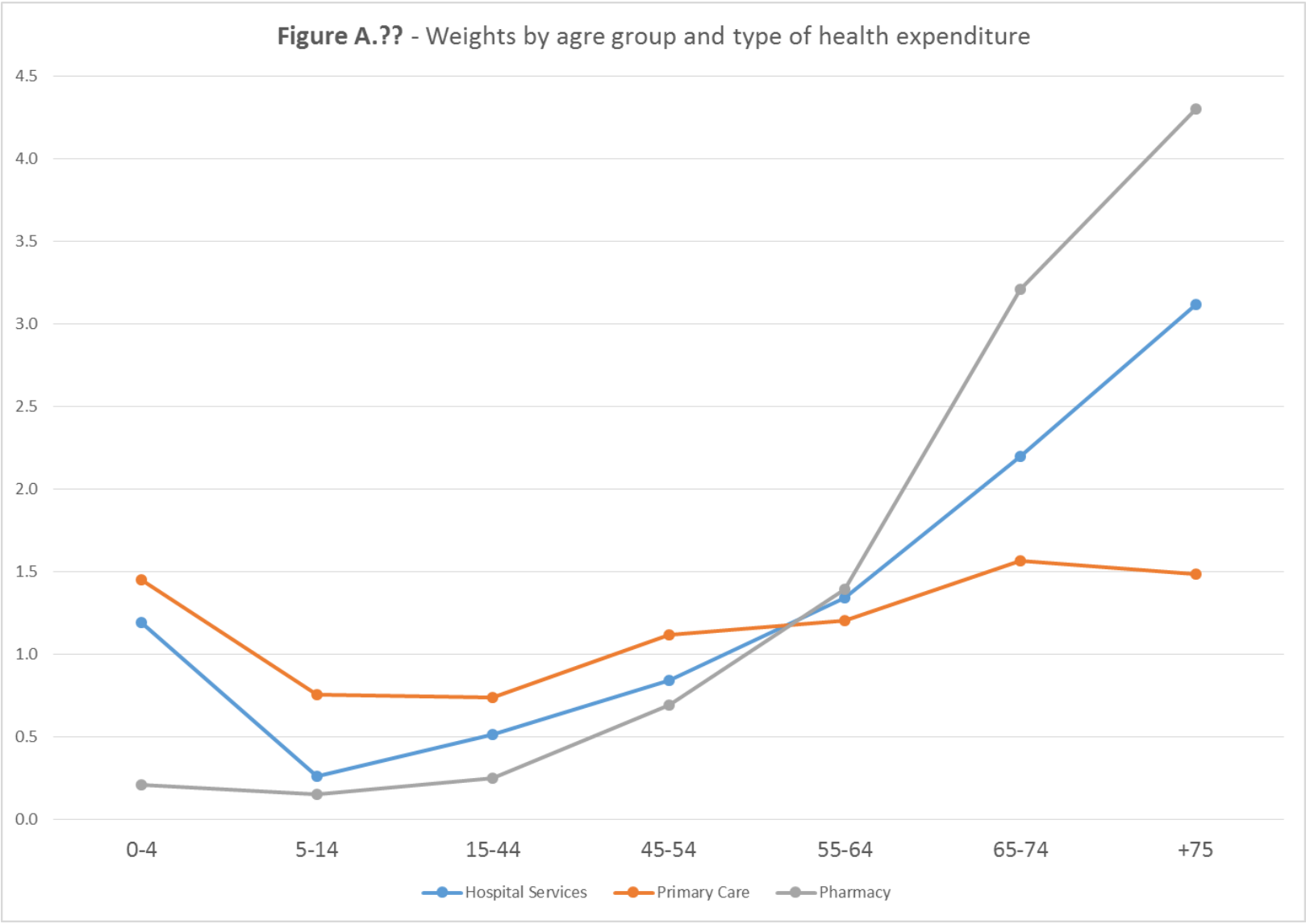
Source: COFOG and own elaboration

- **Health**: 'insurance value approach'
- We find a pattern very similar to education expenditure.
- A fall in health expenditure per capita is only visible in some countries: Spain, Greece, Ireland, Italy, Portugal and the United Kingdom.

- These mean values are imputed into EU-SILC records by using age profiles by gender and type of service for each country.
- **Problem**: This information is available internally at OECD (health database) and European Commission (aging reports), but we have been unable to obtain it!
- We have this information for Spain, so 'provisionally' we have done this imputation using these weights.

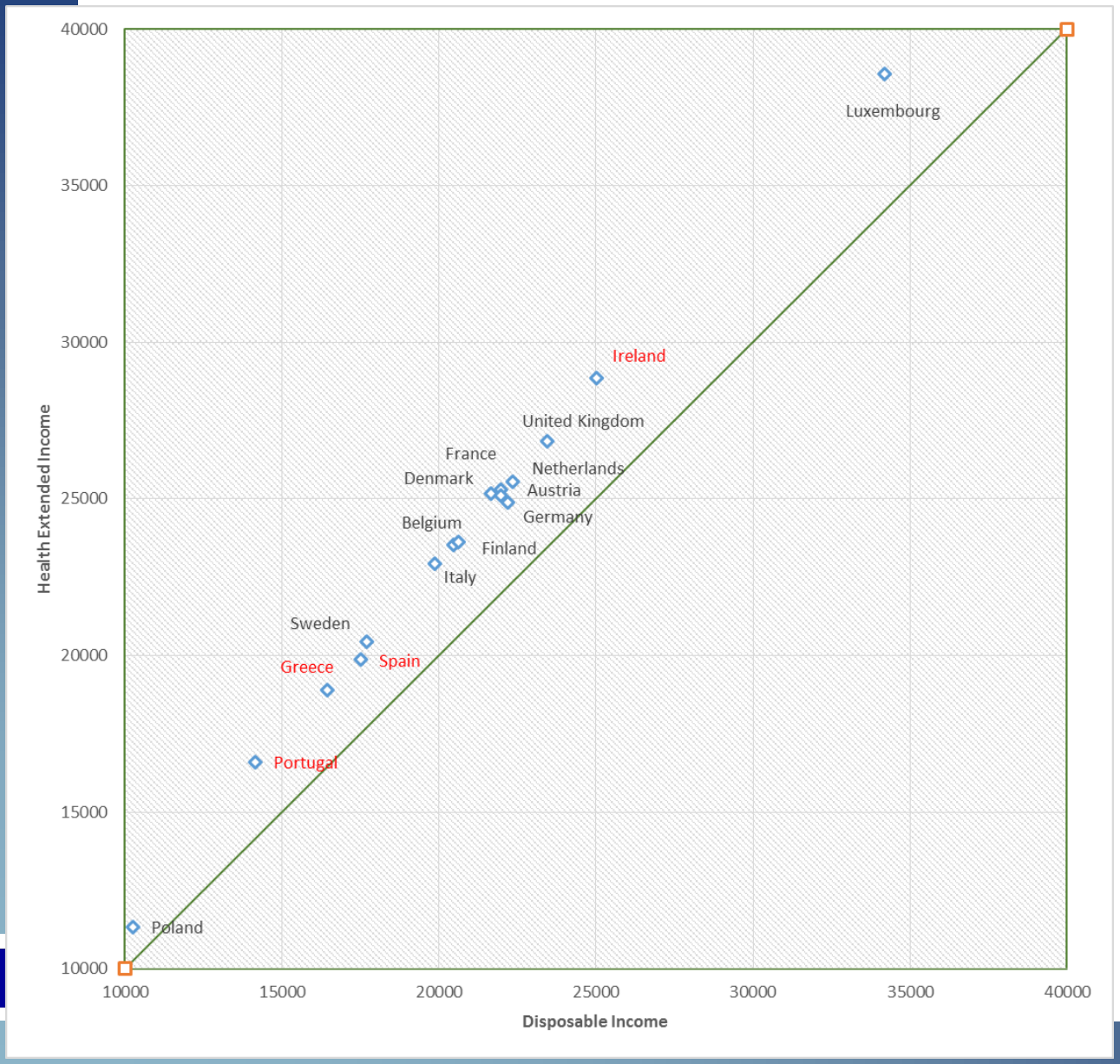
Fiscal Consolidation and Income Distribution: Health

Figure A.?? - Weights by agre group and type of health expenditure



- **Health**: 'insurance value approach'

- After imputation, disposable income increases on average 15%, and remains stable through the period.
- Heterogeneity between countries is relatively high.
- At the country level, the proportional increase in disposable income tends to be independent of the level of income at the beginning of the period, but positively related at the end.



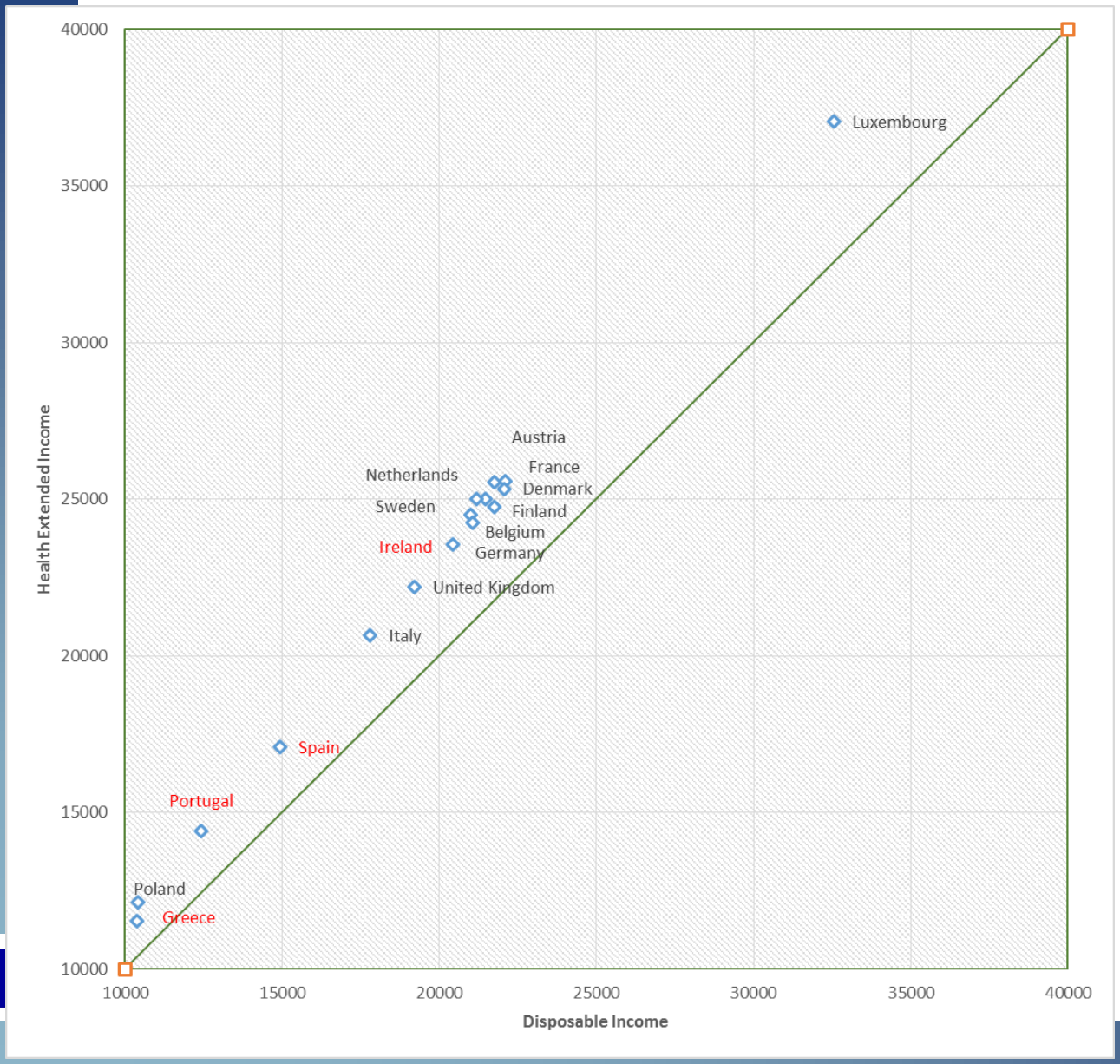
Income - 2007

Health

Extended income

versus

Disposable income



Income - 2012

Health

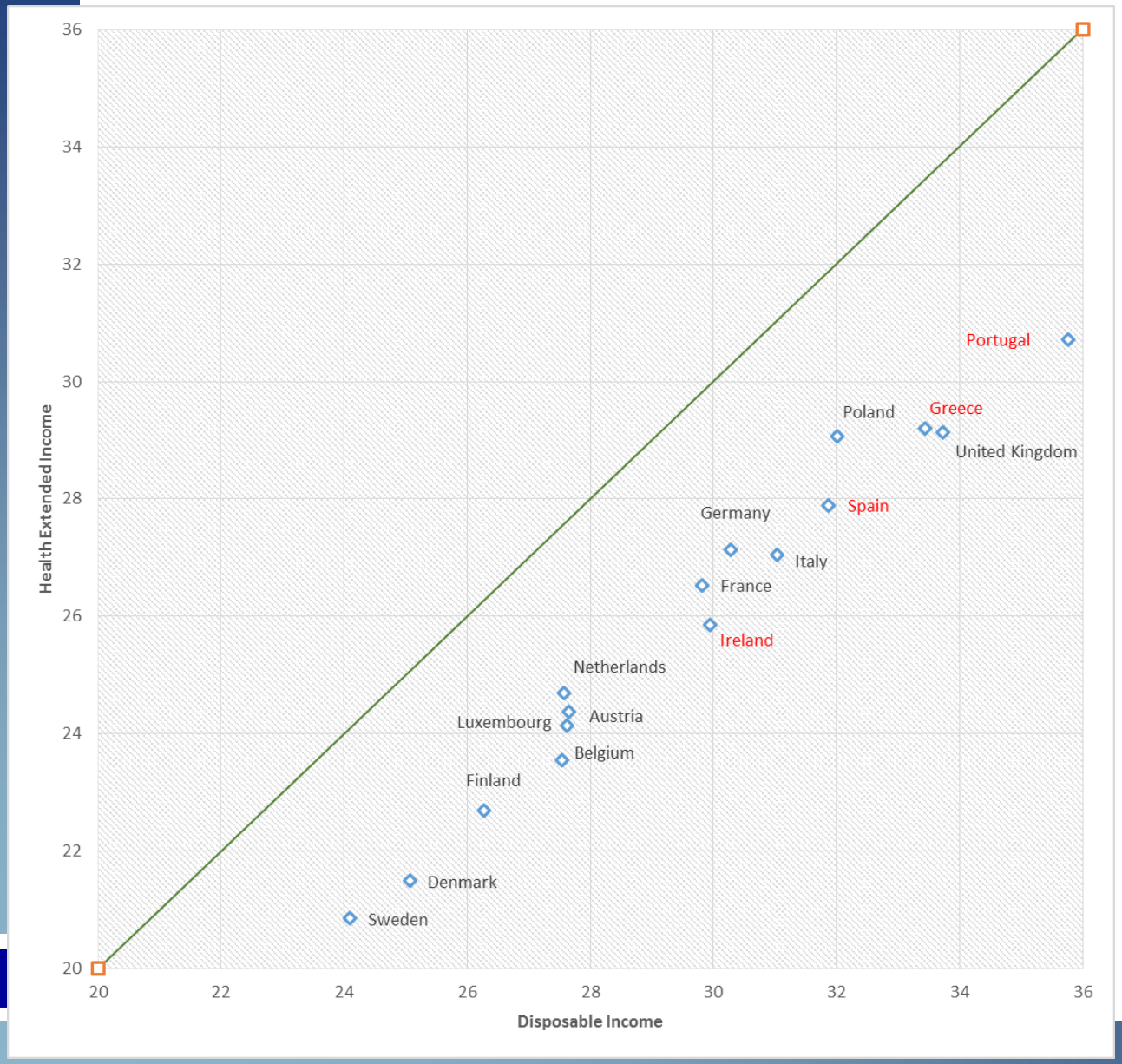
Extended income

versus

Disposable income

- **Health**: 'insurance value approach'
- In-kind benefits in health are uniformly distributed across different income groups. More evenly distributed than education (due to the imputation method).
- As a consequence, since benefits of equal size will, *ceteris paribus*, translate into larger proportional increases in the income of poorer households, relative inequality is reduced by a significant amount.
- This effect is again remarkably stable through time!, so we don´t detect that the inequality reducing effect of expenditure in health has been reduced during the crisis.
- The effect is very similar to what we find for education.

Fiscal Consolidation and Income Distribution: Health



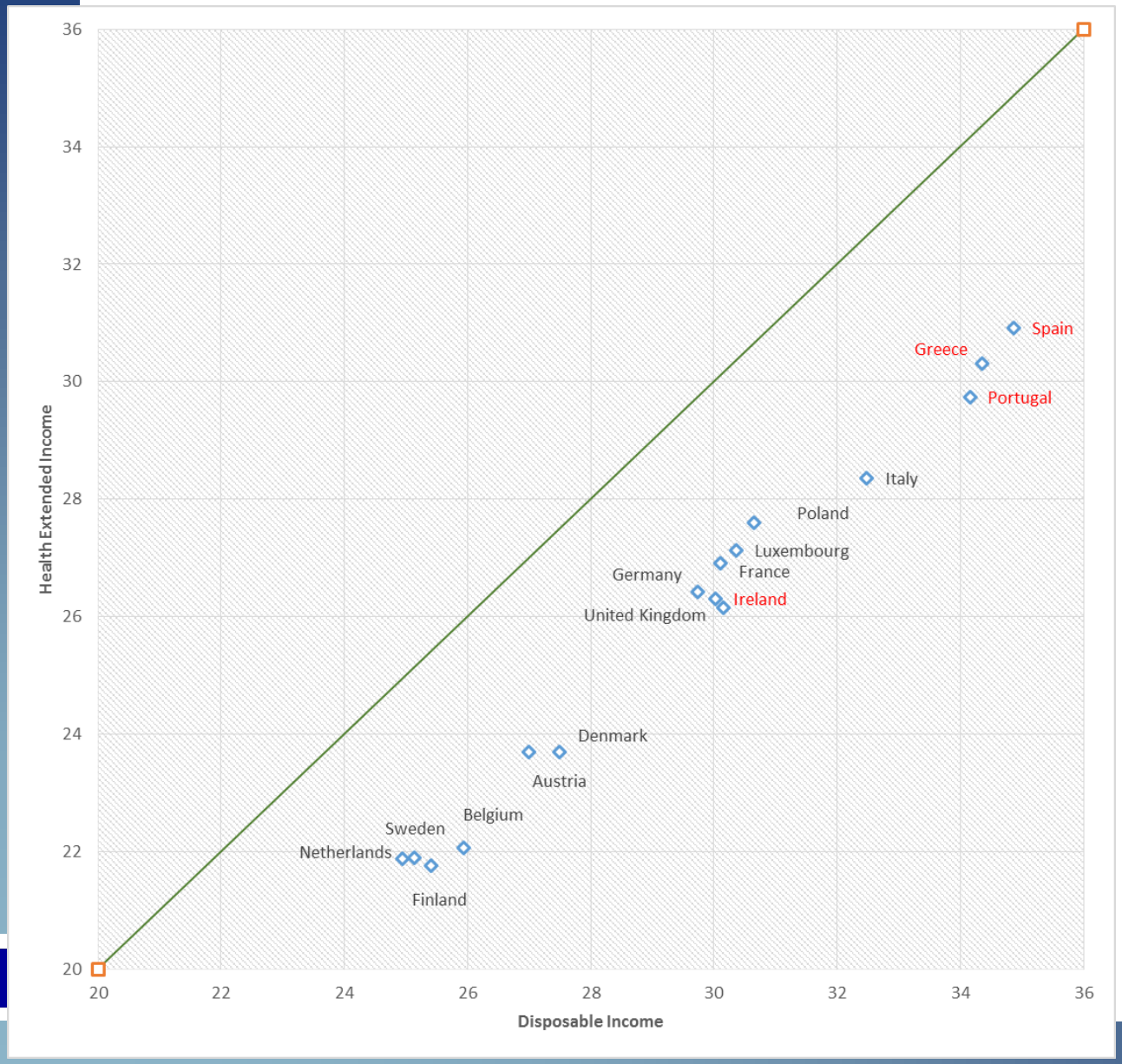
Gini - 2007

Health

Extended income

versus

Disposable income



Gini - 2012

Health

Extended income

versus

Disposable income

- **Health**: ‘insurance value approach’
- As in the case of education, this may be seen as counterintuitive, but the explanation is the same: it is the consequence of focusing on relative inequality, so levels don´t matter.

- In fact, as before, absolute inequality (absolute Gini) remains constant, and the level of absolute inequality (levels matters here!) has fallen, specially for the *PIIGS* countries.

- It remains to do the same exercise with the rest of the public services:
    - Elderly Care → insurance value approach
    - Early Childhood Education and Childcare → actual consumption approach
    - Social Housing → actual consumption approach

  and examine the overall distributional effects of in-kind public services.

- However we anticipate that the main results will be mostly unchanged.

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