

Summer School on Gender Economics and Society  
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Gender Income Gaps  
and Inequality

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# This lecture

- Are gender income gaps closing?
- Are we looking at the 'right' gaps?
- Do 'composite' gaps matter for inequality ?
- Inequality and economic independence

# Wage gap closing ? Views from across the Atlantic

(From Blau and Kahn 2007)

«...while precisely how much narrowing we will see in the future is an open question, the gender pay gap seems unlikely to vanish in the near future..

844 - Francine D. Blau and Lawrence M. Kahn

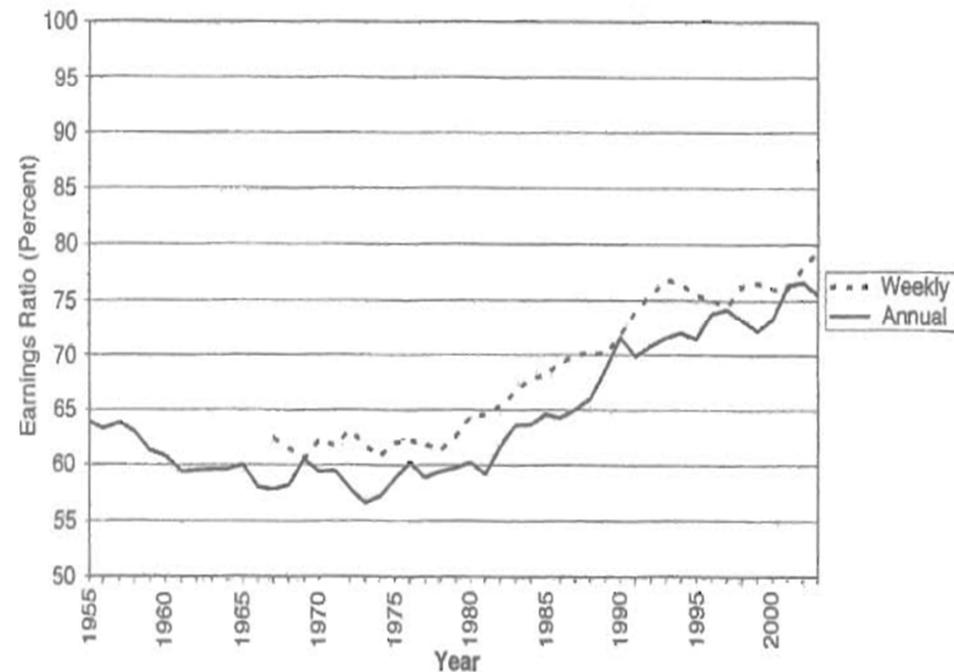


Figure 1. Female-to-Male Earnings Ratios of Full-Time Workers 1955-2003

## A different view from C. Goldin (2014 AER)

.....A gender gap in earnings exists today

that greatly expands with age, to some point, and differs significantly by occupation. The gap is much lower than it had once been and the decline has been largely due to an increase in the productive human capital of women relative to men.

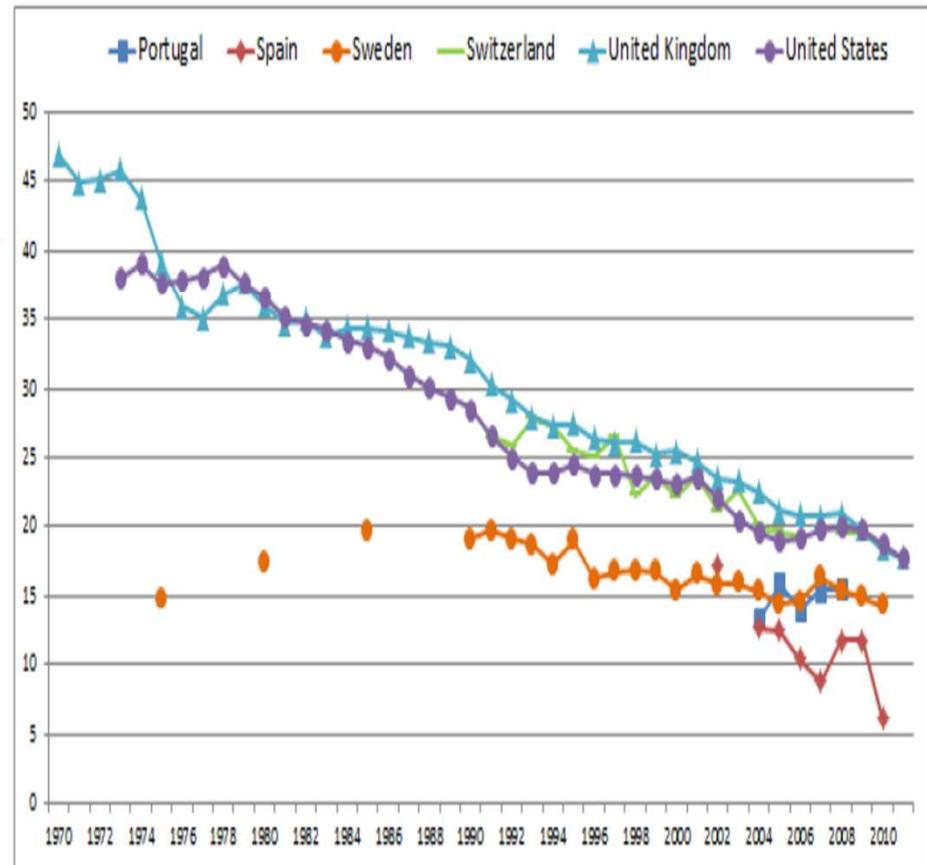
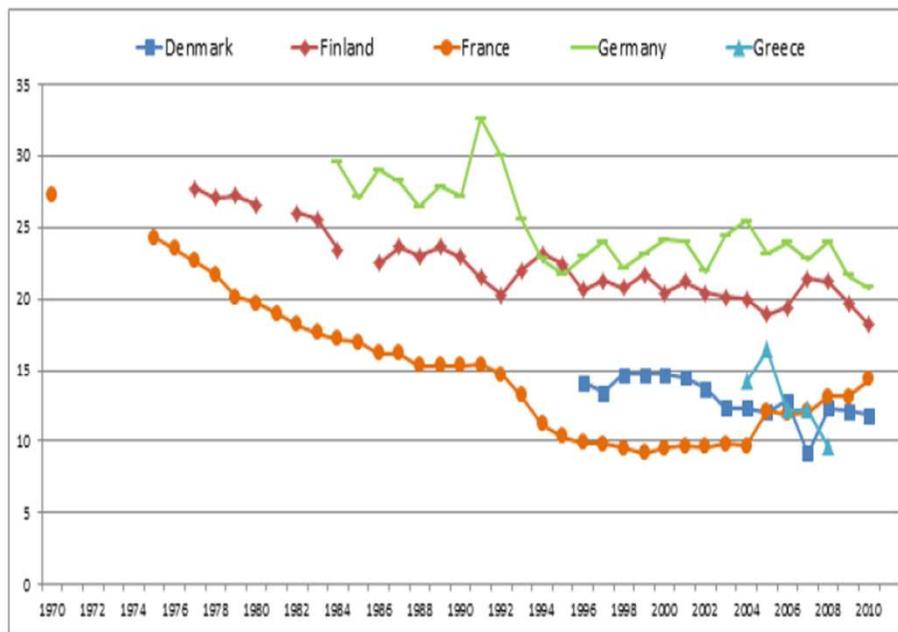
.... The portion of the difference in earnings by gender that was once due to differences in productive characteristics has largely been eliminated.

...What, then, is the cause of the remaining pay gap? Quite simply the gap exists because ... in many occupations earnings have a nonlinear relationship with respect to hours. A flexible schedule often comes at a high price, particularly in the corporate, financial, and legal worlds.

True? The strongest evidence is from legal USA studios, with notoriously long hours, but a different explanation has been given for long hours, by Landers et al. (1996) AER (Rat's race redux...)

# On this side of the Atlantic

The trend in USA is remarkably similar to that in the UK. In other EU countries progress is more contained as the initial gap was lower. Everywhere progress slowed down from the 1990s and there is convergence to gaps between 10 and 20%.



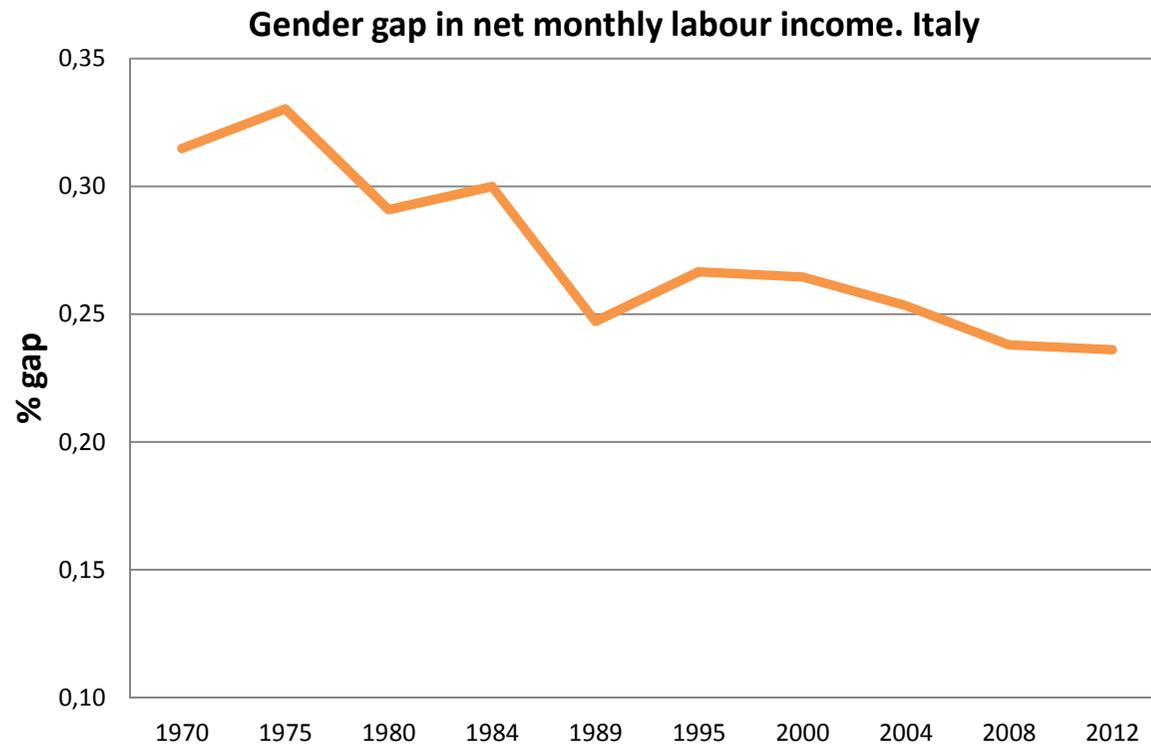
**Trends in gender wage gaps in median earnings of full-time employees, 1970 to 2011 (OECD estimates)**

## Which gaps?

- Median or annual gaps for full-timers are a (second best) measures if the attempt is to control for differences in hours worked . First best is the wage rate gap.
- Prevalent focus on the wage rate is partly the result of the dominance of certain discrimination theories in the analysis of gender differences (more later)
- Yet, differences in hours worked still are key determinants of women's choice of occupations (Bettio and Verahshagina 2009)
- If we factor in differences in hours worked, other income gaps are worth investigating

# The labour income gap

**Gaps in annual labour income are much larger and progress probably slower**



**Italy:** the OECD estimate for the gap in median earnings for full-timers was around 10% in 2009. The gap in annual net labour income was 24% in the same period (SHIV data) . And progress has been modest over the past 40 years

# Eurostat proposal (1): TOTAL EARNINGS GAP

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$$TEG = \frac{(E_m \times H_m \times ER_m) - (E_w \times H_w \times ER_w)}{(E_m \times H_m \times ER_m)} \times 100$$

where

TEG : Total earnings gap

$E_m$  — Mean hourly earnings of men,

$H_m$  — Mean monthly hours paid to men,

$ER_m$  — Employment rate of men (aged 15-64),

$E_w$  — Mean hourly earnings of women,

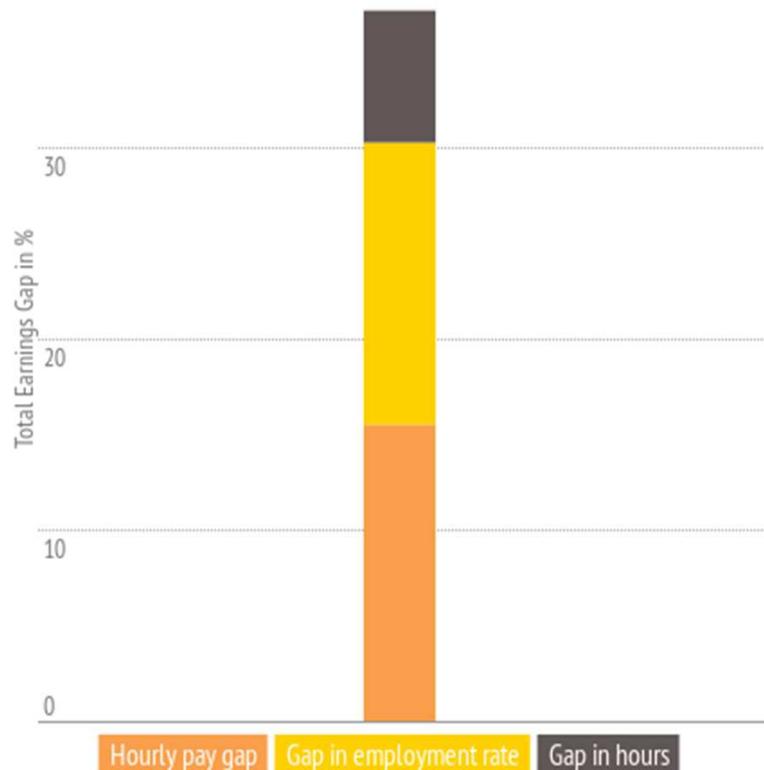
$H_w$  — Mean monthly hours paid to women,

$ER_w$  — Employment rate of women (aged 15-64).

# Total Earnings Gap in %, 2010

EU27 countries

37.1%



Enege

Create infographics [infogr.am](http://infogr.am)

The gaps of the components (gender pay gap - GPG, gender hours' gap - GHG and gender employment rate gap - ERG) do not add up to the total earnings gap (TEG).

However, the following relationship holds:

$$(1 - \text{GPG}/100) \times (1 - \text{GHG}/100) \times (1 - \text{ERG}/100) = (1 - \text{TEG}/100)$$

In log terms:

$$\text{LN}(1 - \text{GPG}/100) + \text{LN}(1 - \text{GHG}/100) + \text{LN}(1 - \text{ERG}/100) = \text{LN}(1 - \text{TEG}/100)$$

This allows calculating contributions as follows (e.g. for GPG):  $\text{LN}(1 - \text{GPG}/100) / \text{LN}(1 - \text{TEG}/100) \times 100$ .



### THE GRAY HAIR GAP

**The natural sequel to the gap in the TEG is the gap in pension income, expected to be adopted as an 'official' indicator by the EU.** Only recently has the gap in pension been drawing attention in European policy circles (not so much in academia) because expected years as a pensioner are getting closer to expected years in the labour market . **See Bettio et al (2013)**

[http://ec.europa.eu/justice/genderequality/files/documents/130530\\_pensions\\_en.pdf](http://ec.europa.eu/justice/genderequality/files/documents/130530_pensions_en.pdf)

# Gender Gaps in pension income and pension coverage. EU and USA around 2010

	EU27	USA
<b>Gap in coverage rate, persons 65+ (%)</b>		
<b>Overall (men-women c.r, %)</b>	<b>6.3</b>	<b>0.3</b>
Social Security		0.2
Occupational plans		9.2
<b>Gap in Pension Income, pensioners 65+ (mean,%)</b>	<b>38.6</b>	<b>30.6</b>

The Gender Gap In Pensions is the ratio of the difference in average pension income between men and women to the pension income for men.

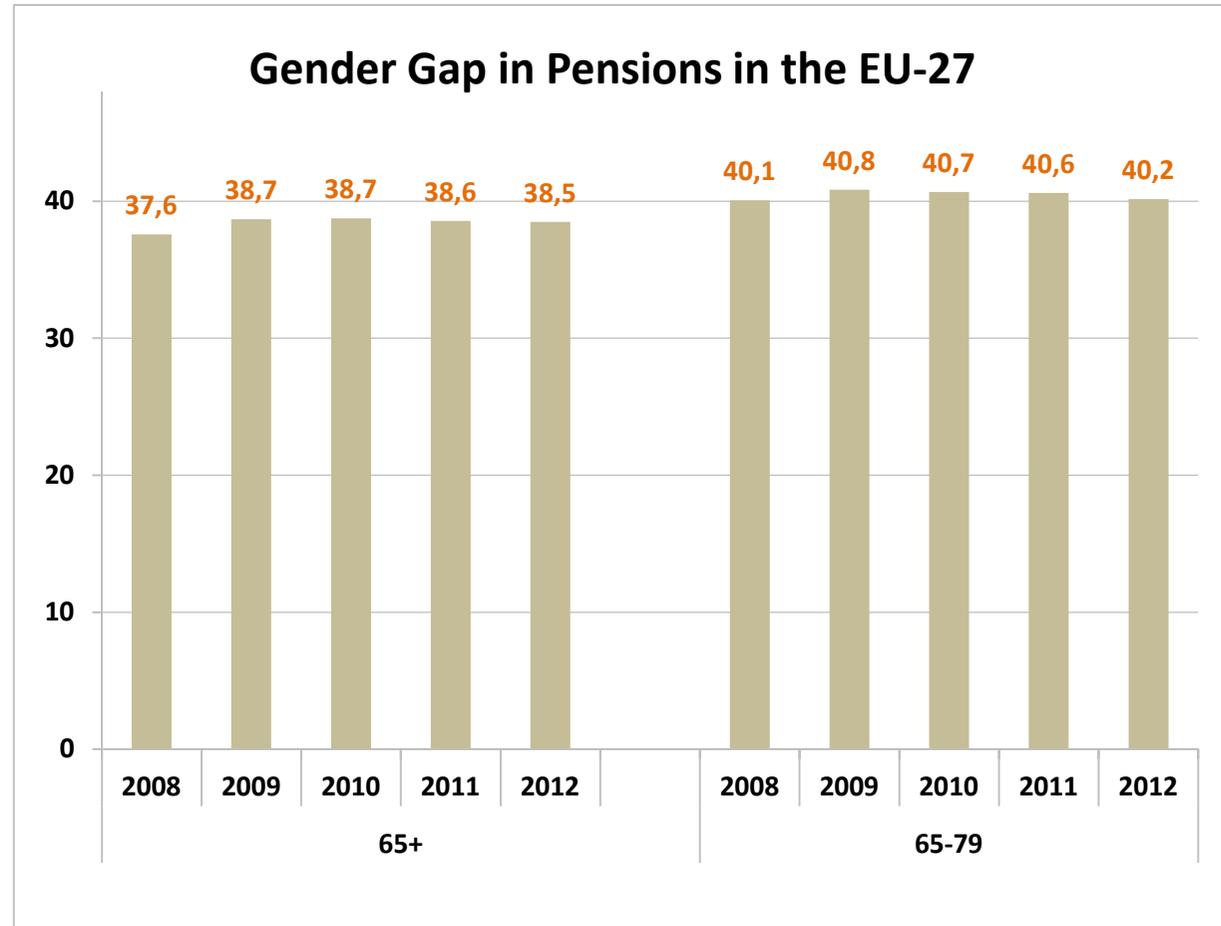
The Coverage Gap is the difference between the coverage rate for men and that for women, i.e. the difference in the ratio between men (women) receiving at least one type of pension to the reference population.

Source: EU-SILC 2011, HRS 2010 (Rand Files), own estimations: Betti et al. (forthcoming 2014)

# Can we discern trends in the pension gap over time?

Gender gaps in pensions:  
**Questions & answers**

Comparing points five years apart (2008 and 2012) a mixed picture emerges for the different European countries . Whereas on average there is a widening of gaps, this masks opposing trends. Overall, no clear indication that the gap will close soon



# Gender gaps in pensions: Questions & answers

**Are gender gaps higher where pensions are higher?** In some countries the gap rises with income in others it falls; the picture is different across Europe

- **What are the likely effect of expanding the so called multi-pillar system ?** So called second pillar (occupational pension schemes) systems are well established in a small number of EU countries (DK; NL CH). Here the composite of the two pillars has a wider gender gap than the public pillar on its own.
- **What are the key determinants?** Short careers, low education, being married and having children, all tend to widen the gap, although the relationship is not one to one in all countries because, often, system features counteract the effect of these factors.



# Gaps and theories

- labour income or pension income gaps are increasingly concerning policy makers. Less so economists Why ?

- **Good reasons:** they are 'composite' gaps reflecting decision making processes that are best theorized separately, i.e. hourly wages and how many hours to work

- **Bad reason:** obsession with the wage rate and discrimination theory has obscured the fact that economic behaviour also depends on composite outcomes such as pensions or earnings

- **Financial independence**, as well as **poverty and inequality** are outcomes of composite decision making processes and they are key issues from a gender perspective

# The good reasons

- Focus on discrimination theory and the wage rate has brought a great deal of knowledge about why women might receive lower rates. But are we near saturation point?
- Some of the latest additions to the existing body of knowledge are
  - non cognitive skills (such as assertiveness) : Grove, Hussey & Jetter (2011) *JHR*
  - differential attitudes towards risk: Le et al. (2011) *Labour Economics*
  - differential competitive drives: Manning, and Saidi (2010) *Industrial and Labor Relations Review*
  - wage premiums on long /continuous hours: Goldin (2014) *AER* (or compensating wage differentials)

# The not so good reasons

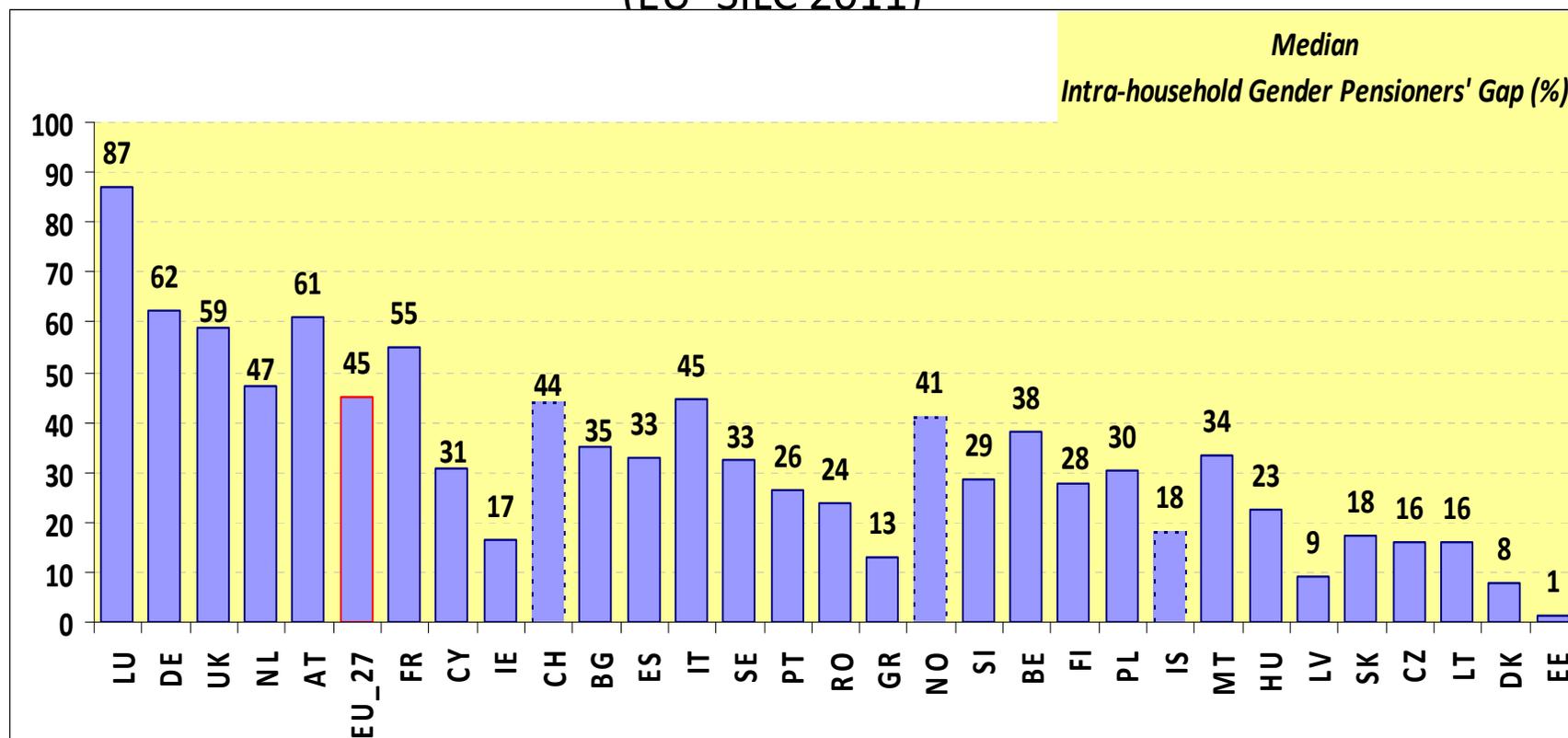
- Obsession with theories of discrimination has meant that the only relevant gap worth analysing and monitoring is the hourly (adjusted) gap
- Discrimination persists but there is wide agreement that it is far less important today than it may have been in the past
- Yet 'path dependency' in the production of economic theorizing means that different approaches and issues have been relatively neglected
- A case in point is the household bargaining approach

# Household bargaining and intra-households gaps

- Household bargaining pivots on a notion of **economic independence of own kind**, that of fall back position
- Key gaps in this approach are **intra-household gaps**, i.e. disparities between members of a given couple.
- **Relevant intra-household gaps are not only gaps in wage rates but also in total earnings/income.**
- The approach is not new, **but intra-household gaps are not so popular.** (yet?)
- We know little about such gaps. But we know that they may be larger than the corresponding aggregate gaps.

# Intra-household gaps in pension income. Europe

(EU SILC 2011)



Source : Betti, Bettio, Tinios and Georgiadis (20144, forthcoming)

**The intra-household median gap in pensions dominates the aggregate gender gap in median pensions in all the countries except in Estonia, Greece, Ireland, Latvia, Romania and Slovenia.**

**This is largely due to a population sample effect. But values are likely to remain high after netting the selection effect out.**

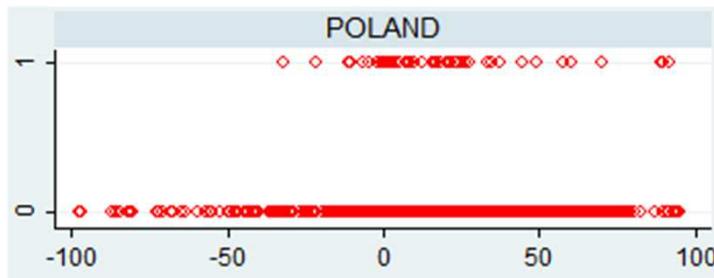
# Why worry about 'composite' gender income gaps?

## Poverty

- Poverty is a burning issue in today's market economies, **so is inequality**.
- **Poverty has no linear relationship** with the size of 'composite' income gaps (next slides), hence with some notion of financial independence
  - In particular, if we correlate household poverty with the intra-household gap in pension, the sign is negative for the majority of EU member states although there are important exceptions including France and Ireland.

## Pension gap and poverty: negative and positive correlation

Compare Poland, where the correlation is negative and strong to France, where it is positive and strong. In Poland a larger number of poor couples are found in the small gap area than in the high gap area.



In France the majority of poor couples are positioned in the high gap area.

# Why worry about 'composite' gender income gaps?

## Between households income inequality

Consider intra-household gender gaps in

- Labour income
- Participation
- Hours of work

Now consider a counterfactual where these gaps cancel out, one at a time. Would that decrease or increase income inequality between households?

# Between-households income inequality and gender gaps: a decomposition approach

Based on Barros et al. (2006) and Klasen et al. (2014) , Gehringer et al. (2015) use the following decomposition to measure the contribution of gender inequality to overall inequality.

$$y_h = a_h \times r_h \quad (1)$$

$$y_h = a_{h_f} \times r_{h_f} + a_{h_m} \times r_{h_m} \quad (2)$$

$$y_h = a_{h_f} \times (o_{h_f} + (u_{h_f} \times (h_{h_f} \times p_{h_f}))) + a_{h_m} (o_{h_m} + (u_{h_m} \times (h_{h_m} \times p_{h_m}))) \quad (3)$$

Where

- (1) decomposes the disposable household per-capita income of household  $y_h$ , with  $a_h$  expressing the proportion of adults in the household  $h$  and  $r_h$  the income per adult in the household  $h$
- (2) Further decomposes by sex (f and m)
- (3) Further decomposes by type of income ( $o$  stands for non labour income,  $u$  stands for participation,  $p$  stands for hourly earnings and  $h$  stands for hours.

## Between households income inequality and gender gaps: selected and preliminary findings (from Gehringer et al. 2015)

### Gender gaps levelling and income inequality. % change in the Gini Coefficient

Country	Income per adult	Hourly labour earnings
AT	-2.76	0.51
BE	-2.65	1.22
BG	-0.44	1.73
CZ	0.04	1.49
DE	-2.36	0.34
DK	0.00	0.33
EE	3.14	2.59
EL	-0.41	2.35
ES	-1.08	1.91
FI	0.63	0.51
FR	-1.15	1.09
HU	0.08	0.74
IE	-3.32	0.16
IT	-1.51	2.88
NL	-3.33	2.17
PL	0.60	2.35
PT	-0.85	1.73
RO	-0.17	3.23
SE	0.17	1.17
UK	-1.27	-0.32

Source: Gehringer et al (2015: ENEGE report)

## Between households income inequality and gender gaps. (Preliminary) results in a nutshell

- Gender-gaps on average contribute to increasing inequality (in terms of the disposable household per capita income).
- However the impact is small and in some countries, systematic differences in income between women and men actually reduce income inequality (CZ, EE, FI, HU, MT, PL, SE and SK).
- Only in countries like Germany, Ireland, Luxemburg, Netherlands, the joint impact of all gender-gaps together tends to rise between-households inequality by more than 2 percentage points.
- Changes in the gender gaps in the labour market are likely to have a much lower impact on inequality than changes affecting female-headed households.

# By way of conclusion: Food for thought and for discussion



- Progress in closing gender gaps in wage rates is slow but ongoing, while gaps in total earnings, labour income or pension income are still very large because they reflect cumulative disadvantages
- As the strong economic case for fighting discrimination is losing relevance, can we replace it with a strong economic case for pursuing financial independence?
- Given the complex relationship with poverty and inequality, do we have a moral case for pursuing financial independence?
- Is the theoretical notion of economic independence that the household bargaining approach offers up to the task?

