

The Distributional Impact of Structural Reforms: an empirical analysis

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Background & Motivation

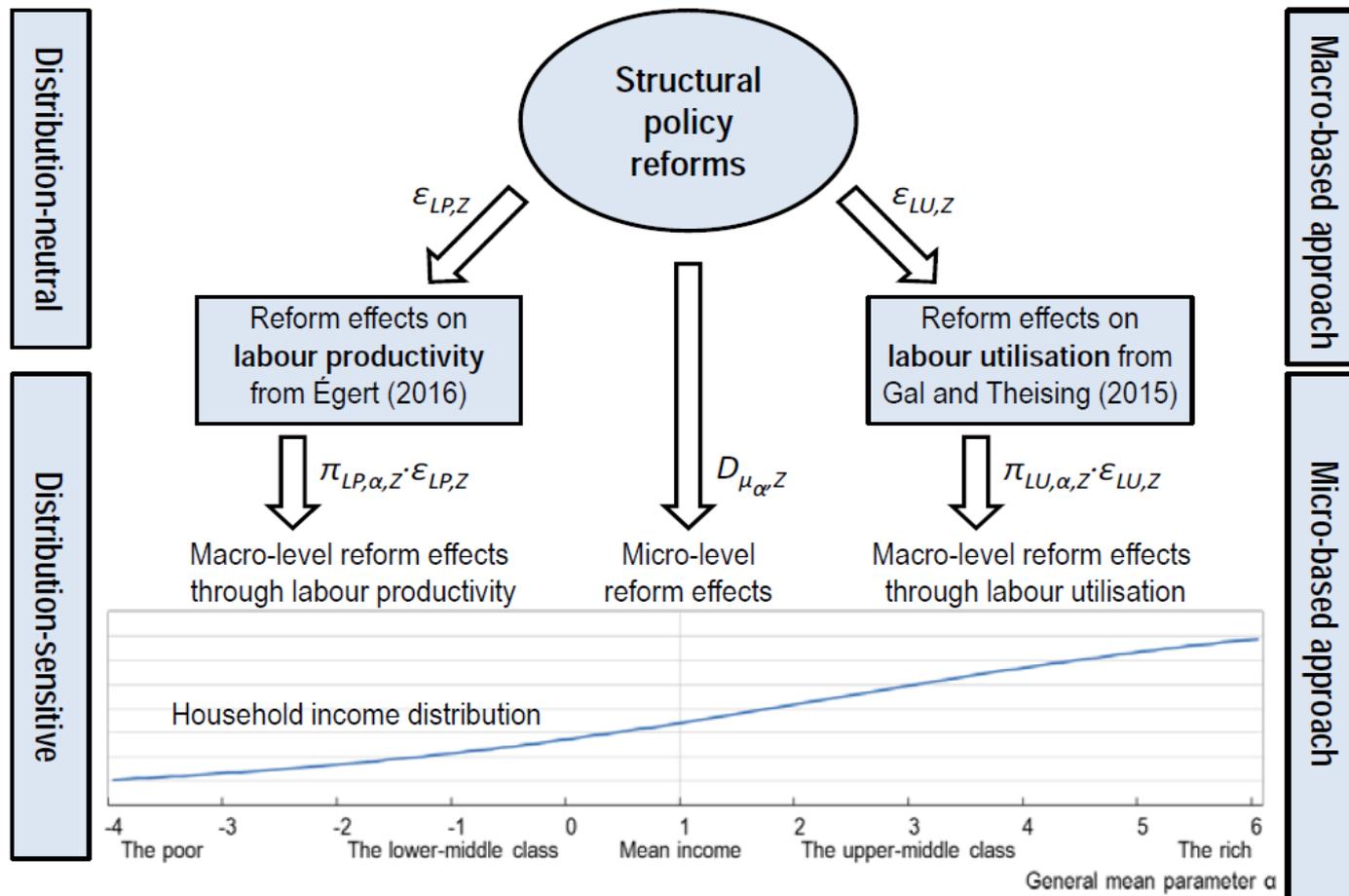
- Structural policies are primarily targeting growth
- But income distribution is no longer at the periphery of policymaking
- ...rather increasingly so at the core of policymaking
- **The challenge is then how to boost growth and make it (more) inclusive**
- This requires shedding light on the distributional effects of structural reforms
- This requires going granular: i) what are the mechanisms that go from pro-growth policies to income distribution? ii) how are households at different points of the distribution affected?

Background & Motivation

- Shedding new light on policy synergies and trade-offs across the growth & equity objectives:
 1. Building on a **combined macro-micro approach**
 2. Considering the **sources of macroeconomic growth**, by decomposing GDP between labour utilisation and labour productivity
 3. Considering income distribution from bottom to top....
 - ➡ thanks to this granularity, delivering policy results on income inequality allowing for **different levels of inequality aversion**

The framework

- A combined macro-micro approach for evaluation of distributional impact of policy reforms:**



Dependent variable: household disposable income

- **Going granular on income distribution & inequality: the generalized means approach**

- Inequality can be tracked using **income standards** built upon the **generalized mean** concept (cf. Foster & Szekely, IER, 2008)

- What is a generalized mean?

- Income distribution: $x = (x_1, \dots, x_n)$

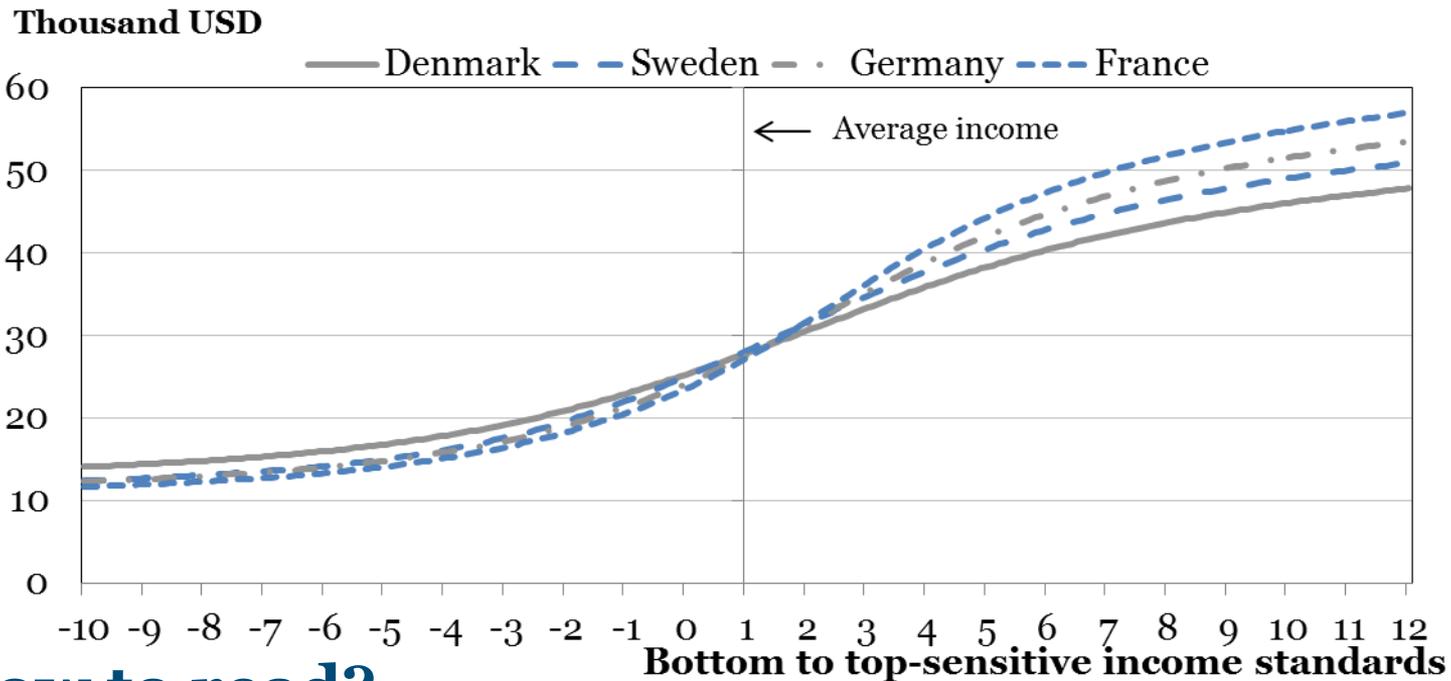
- Class of generalized means:

$$\mu_\alpha(x) = \left[(x_1^\alpha + \dots + x_n^\alpha) / n \right]^{1/\alpha} \quad \text{for all } \alpha \neq 0$$

$$\mu_\alpha(x) = (x_1 \dots x_n)^{1/n} \quad \text{for } \alpha = 0$$

- **α substantiates the notion of social preferences in terms of e.g. aversion to inequality**

Generalized mean of household disposable income (1)

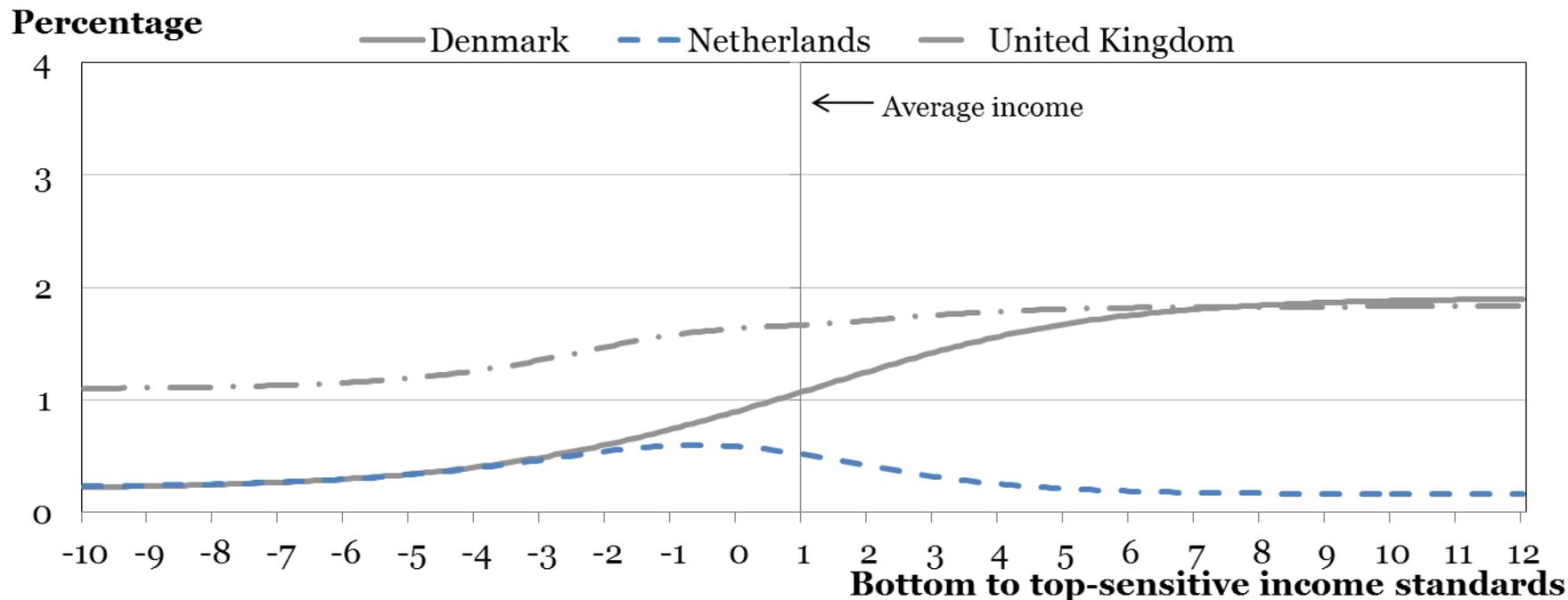


■ How to read?

- The generalized mean reduces to the **standard mean** when $\alpha = 1$ thus providing a natural dividing line
- When $\alpha \rightarrow -\infty$ the generalized mean is equal to the **minimum income** in the society
- When $\alpha \rightarrow +\infty$ the generalized mean is equal to the **top income** in the society

Generalized mean of household disposable income (2)

The dynamics of inequality (mid-1990s to early 2010s):



- Denmark has been **growing more unequal**
- Incomes in the upper part grew around the same rate as in UK
- While incomes at the bottom grew similar to the Netherlands

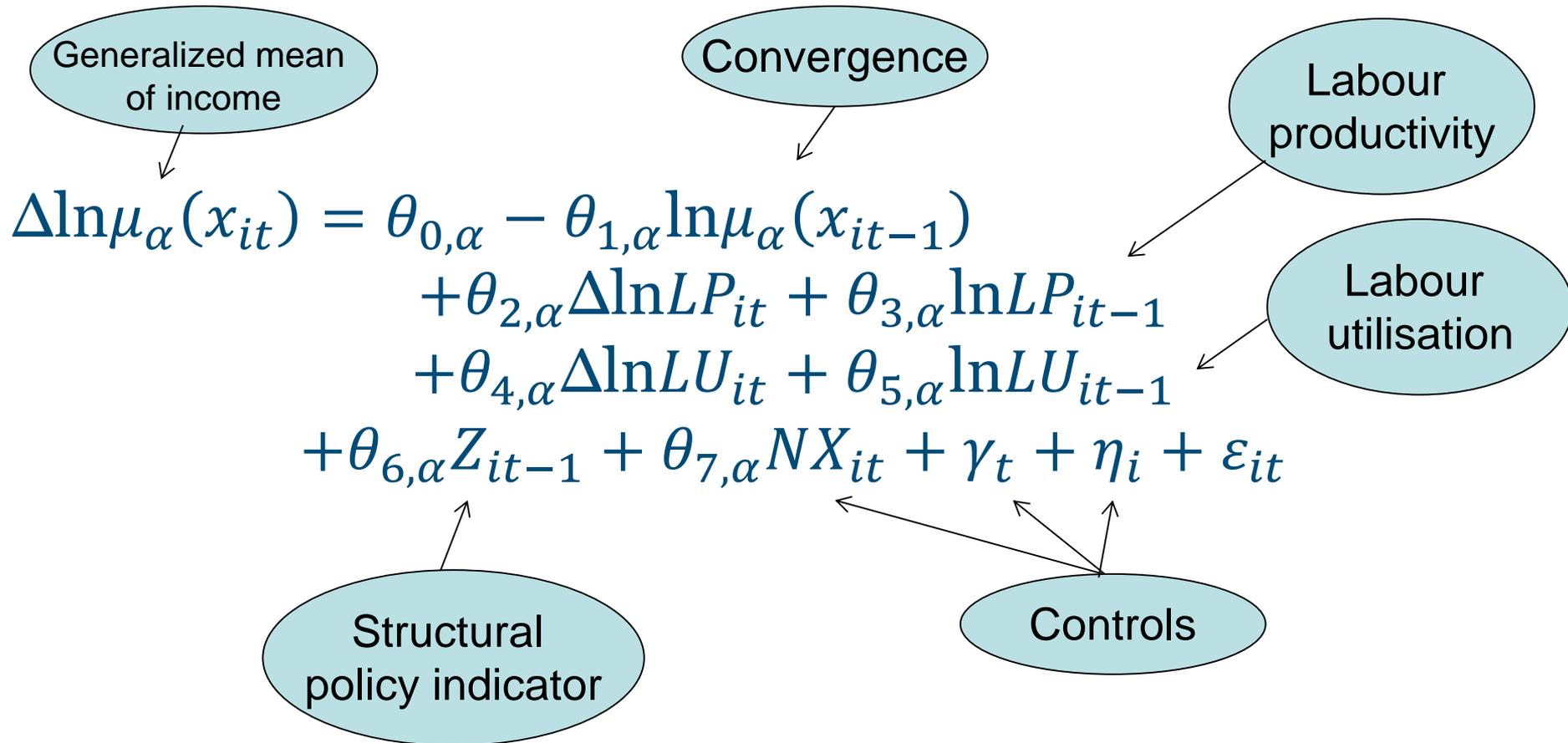
Model for the distributional incidence of growth

- What we have for GDP, we don't have for inequality:

“here's the thing: we really don't know how to model personal income distribution — at best we have some semi-plausible ad hoc stories.” (Paul Krugman, 2016)

- **Safest minimal starting point:** household income is affected by GDP
- **Specification:** in the long run the level of household income across the distribution is mainly driven by the level of GDP per capita, which “transmits” to households

Empirical model of household income (1)



- Repeated estimation for α from -4 to 6 allows for tracking incomes across the distribution

Empirical model of household income (2)

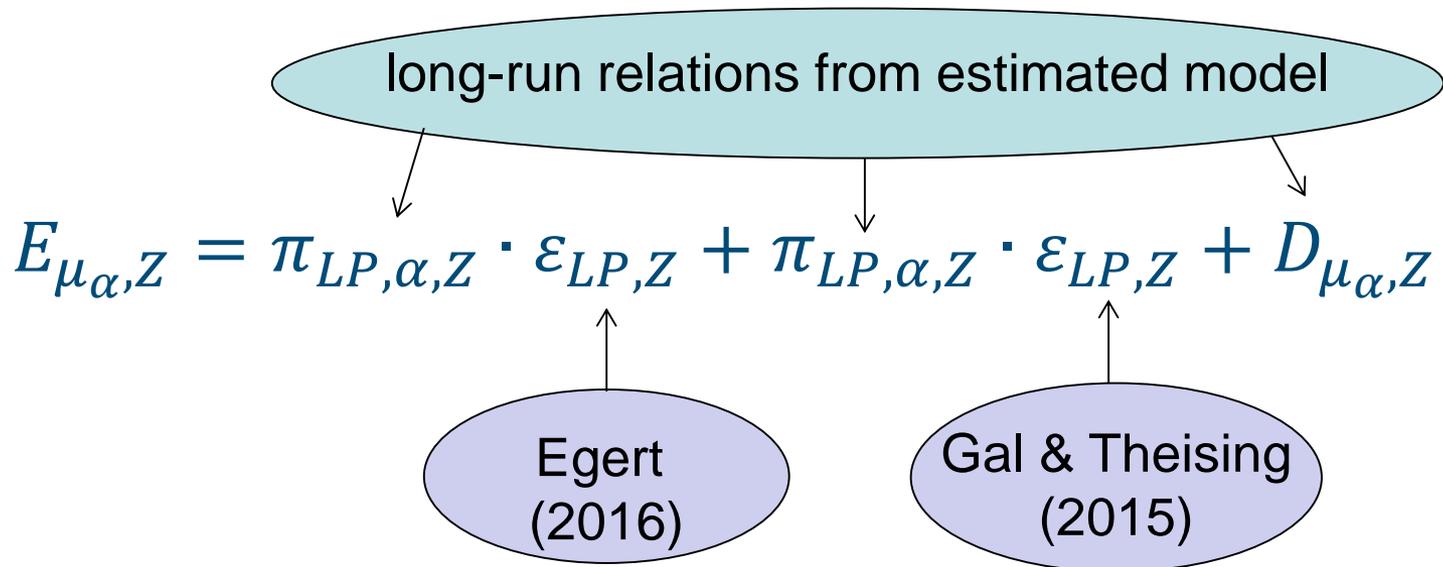
- **Econometric strategy:**
 - Convergence term + LP and LU = **endogeneity**
 - Ideal solution: external instruments
 - Our reality: **internal instruments**
 - Estimation by System-GMM across **the full range** of aversion to inequality (in practice α from -4 to 6)
 - Data: OECD Income Distribution Database, OECD National Accounts, Structural Policy Indicator Database
 - 259 country/year observations
- Results have to be interpreted **on average across OECD countries over the last 30 years**

“Calibrating” the total policy effect

- **Decomposing the total policy effect:**

$$E_{\mu_{\alpha},Z} = \frac{d\ln\mu_{\alpha}}{d\ln Z} = \frac{d\ln\mu_{\alpha}}{d\ln LP} \frac{d\ln LP}{d\ln Z} + \frac{d\ln\mu_{\alpha}}{d\ln LU} \frac{d\ln LU}{d\ln Z} + \frac{\partial \ln\mu_{\alpha}}{\partial \ln Z}$$

- **Plugging in estimated elasticities:**



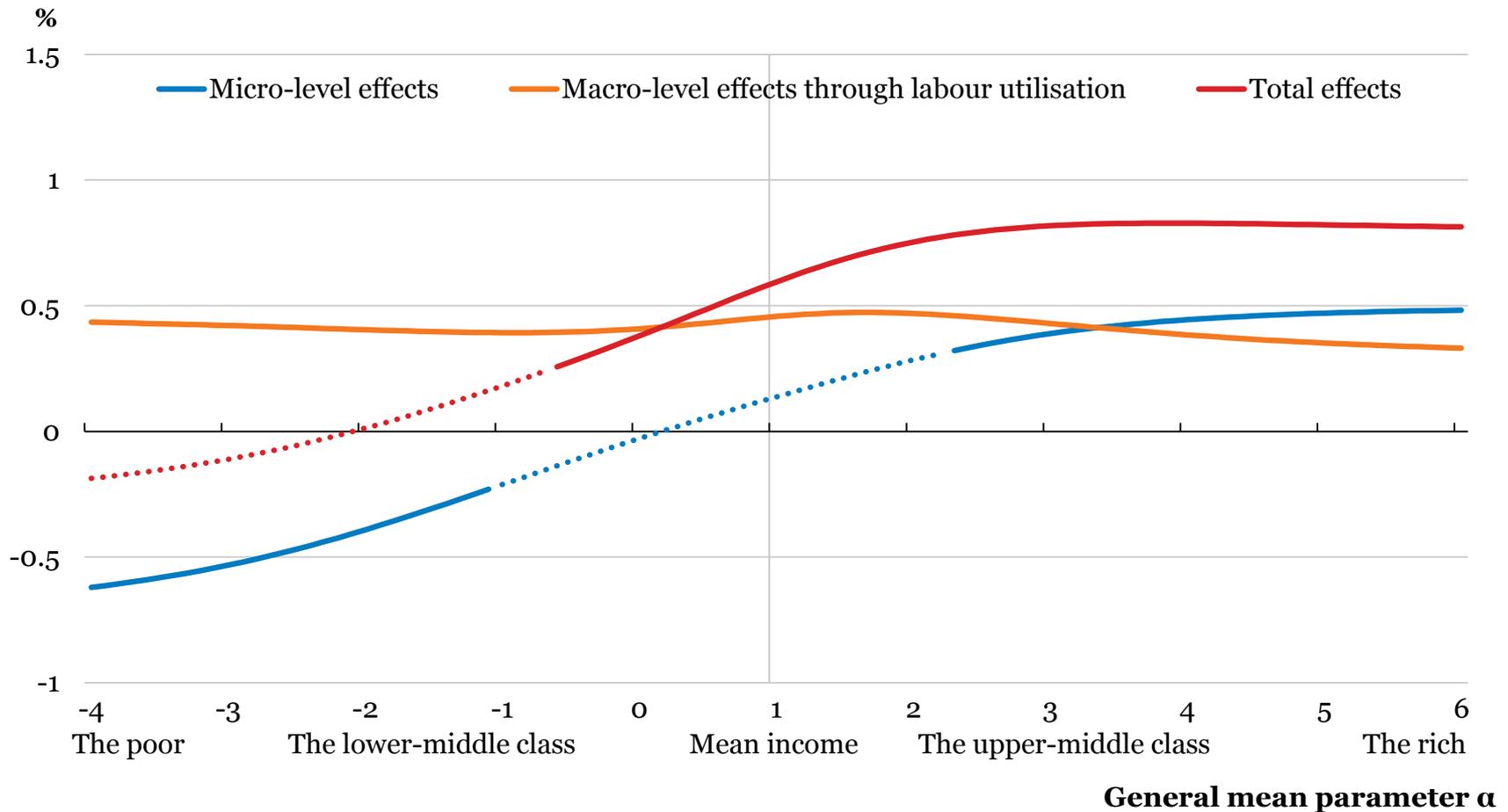
- **and external elasticities**

“Macro” and “Micro” effect

- **Macro+Micro=TOTAL:**
- **Macro effects:**
 - Reform-driven changes in labour productivity and/or labour utilisation which flow to household incomes
 - Effect depending on where the household is in the distribution
 - Include distribution-neutral macro effects taken from recent OECD estimates (Gal and Theising, 2015; Egert, 2016)
- **Micro effects:**
 - Reform-driven changes in household incomes not channelled through macroeconomic effects
 - Effects operating on top of the macro effects (ex: mechanical impact of taxes).
- **Total effects**

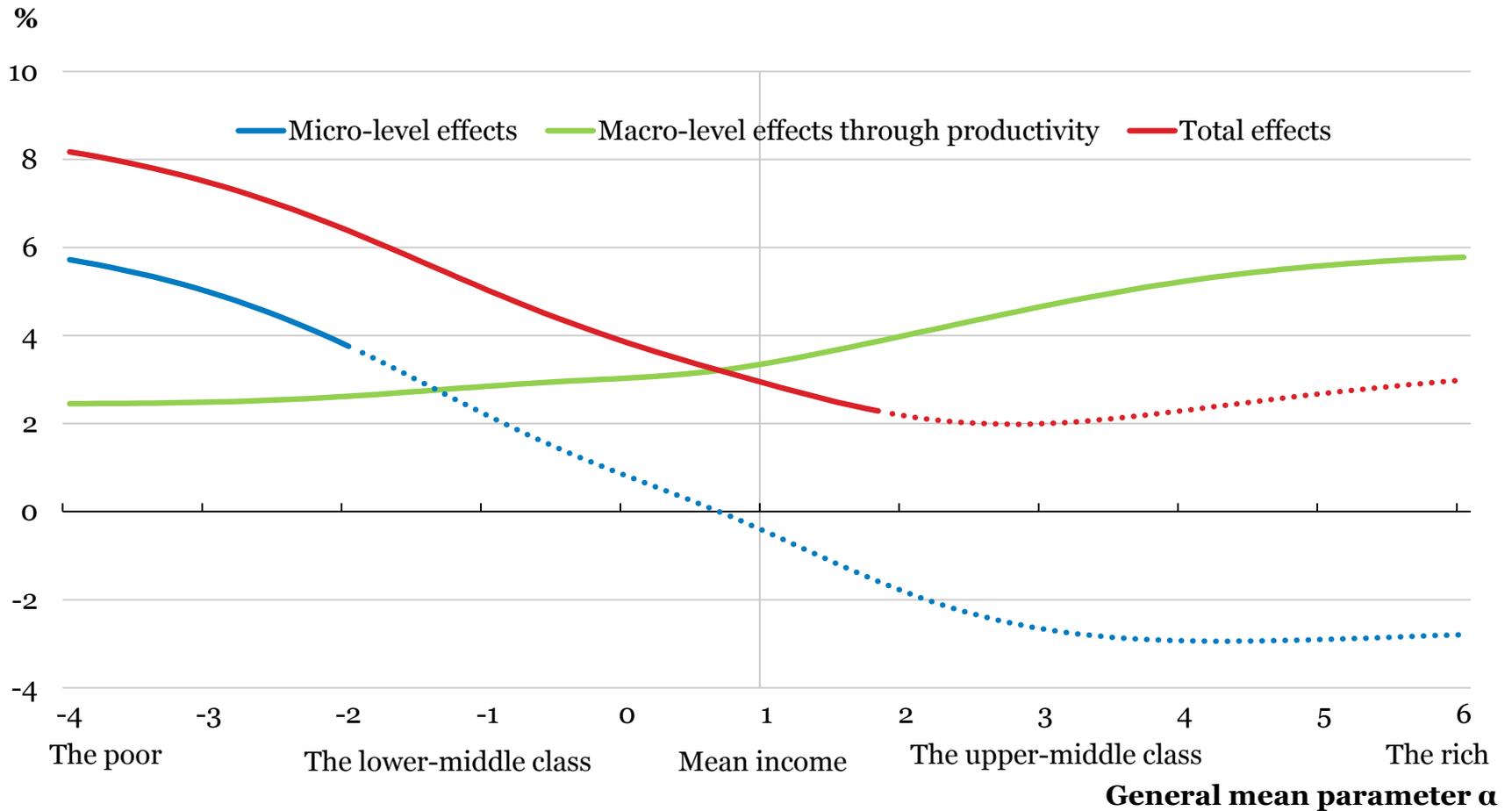
Structural policy reform examples (1)

- Reduction in unemployment benefits:



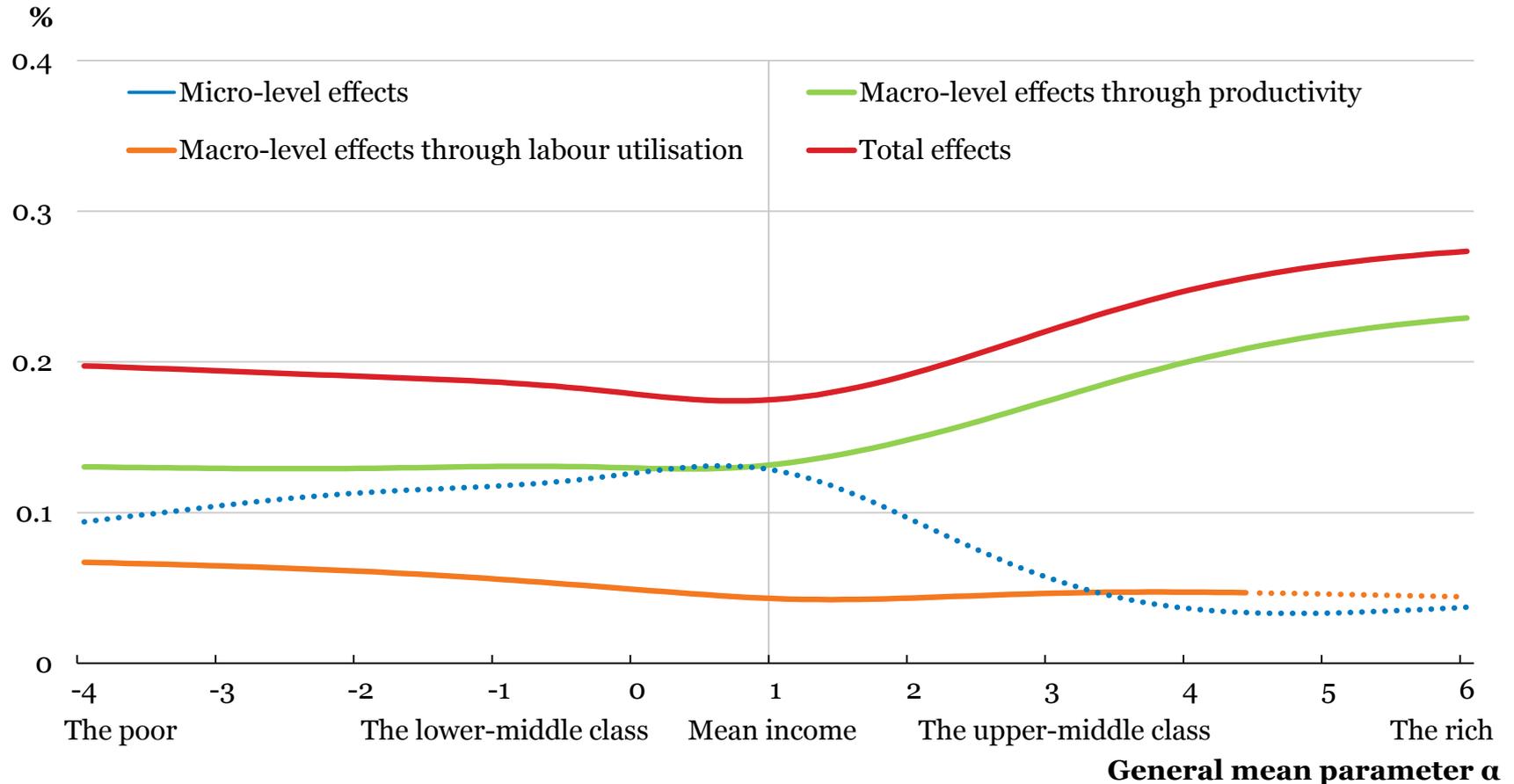
Structural policy reform examples (2)

- Increase in government spending on education:



Structural policy reform examples (3)

■ Reduction of regulation in network industries (“PMR”):



Results: synergies and tradeoffs

- **Key result: pro-growth policies can be inclusive...
...depending on the degree of inequality aversion**

	<i>Weak inequality aversion</i>	<i>Strong inequality aversion</i>
Labour market and welfare policies		
Reducing UB replacement rates for all unemployed	Tradeoff	Tradeoff
Reducing UB replacement rates for the long-term unemployed (including social assistance)	No tradeoff	Tradeoff
Increasing spending on ALMPs	Synergy	No tradeoff
Increasing the legal retirement age	No tradeoff	Synergy
Increasing public spending on families with children (in kind family benefits)	No tradeoff	Synergy
Reducing job protection on regular contracts	No tradeoff	Tradeoff
Encouraging a decline in in union density	No tradeoff	Tradeoff
Reducing the legal extension of collective agreements	No tradeoff	Synergy
Encouraging a higher degree of wage bargaining coordination	No tradeoff	Synergy
Reducing minimum relative to median wage	No tradeoff	No tradeoff
Tax policy		
Lowering labour tax wedges (unfinanced)	No tradeoff	Tradeoff
Education		
Increasing public spending on education	No tradeoff	Synergy
Innovation and Technology		
Increasing incentives for R&D spending	No tradeoff	No tradeoff
Increasing incentives for patent application	No tradeoff	Tradeoff
Product market regulation		
Reducing barriers to competition	No tradeoff	No tradeoff

Conclusions

- Structural reforms are generally **good for the middle class**
- **Trade-offs** appear when the **focus is on the poorest section** of the population
- **Social protection and labour market reforms are the sources of most of the trade-offs** between growth and equity objectives
- Reforms of wage-setting institutions may be good or bad for equity, **depending on reform design**
- Minimum wage reductions are not found to trigger a rise in income inequality
- **Easing barriers** to firm entry and competition in product markets produces strong macroeconomic gains **without raising trade-offs**

Some references

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