

INFLATION, FISCAL POLICY AND INEQUALITY

THE DISTRIBUTIONAL EFFECTS OF FISCAL MEASURES TO COMPENSATE FOR CONSUMER INFLATION

Antonio F. Amores, Henrique S. Basso, Simeon Bischl, Paola De Agostini, Silvia De Poli, Emanuele Dicarolo, Maria Flevotomou, Maximilian Freier, Sofia Maier, Esteban García Miralles, Myroslav Pidkuyko, Mattia Ricci, **Sara Riscado**

9th World Congress of the International Microsimulation Association | WIFO, Vienna | 8-10 January



BANCO DE
PORTUGAL
EUROSISTEMA

Disclaimer: This presentation should not be reported as representing the views of European Commission, the European Central Bank (ECB) or the Eurosystem. The views expressed are those of the authors.



- Euro area inflation rose from 2.6% in 2021 to 8.4% in 2022
- Large array of government measures to cushion the impact of the inflationary shock on households and firms (close to 2% of GDP in 2022 and 2023, in the euro area)
 - ✓ A bit more than ½ of support directed to containing price increases (“price measures”), including indirect tax cuts and tax and electricity price caps
 - ✓ A bit less than ½ of measures directed at supporting income of households (“income measures”), e.g. public transfers with indirect and lagged effects on inflation via aggregate demand
- **Research question:** What was the impact of the inflationary shock and the fiscal policy response on 2022 household disposable income and its distribution in the euro area?
 - ✓ Approach: cross-country assessment of the joint effect of income and price measures in response to the inflationary shock with EUROMOD and its extension to indirect taxes (ITT)
 - ✓ Euro area proxy: Germany, Greece, Spain, France, Italy and Portugal



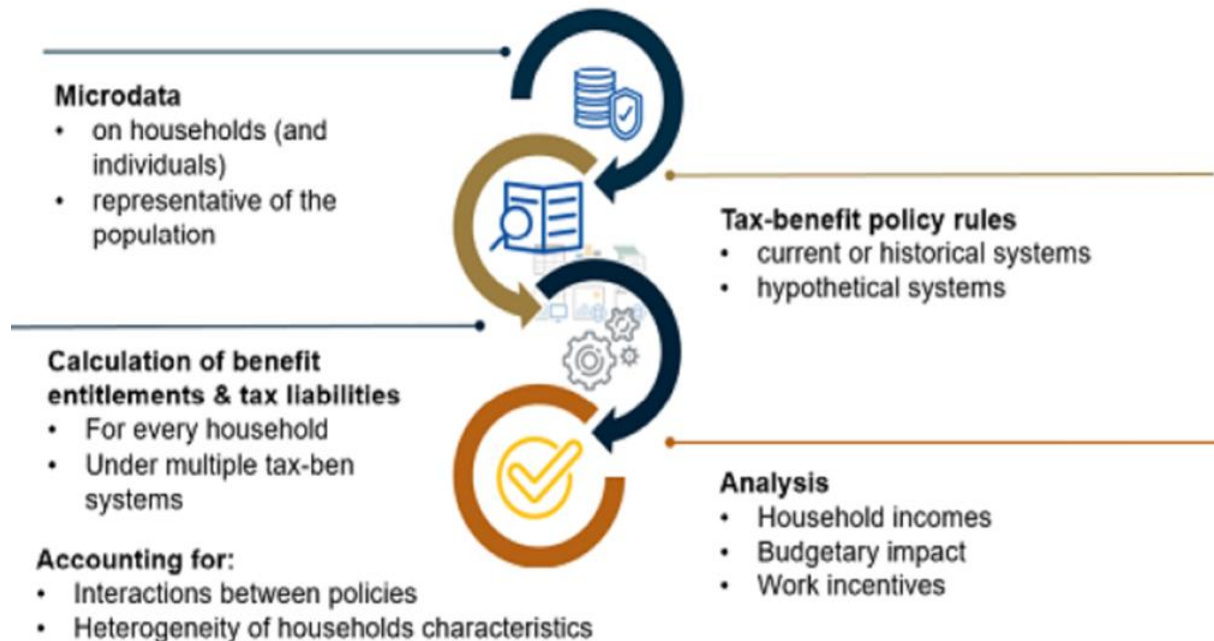
- We found that...

1. The purchasing power of lower-income households was more severely affected by the 2022 inflation surge than that of high-income households:
 - higher weight of energy intensive goods in consumption basket
 - higher share of income spent on consumption (negative savings)
2. Fiscal measures significantly contributed to mitigating the loss in purchasing power:
 - gap almost completely closed in France, Greece, Portugal, and mostly closed in Italy
 - diversity of policy mixes across euro area countries (e.g Greece opted for price measures, while Portugal chose mainly to implement income policies)
3. Most fiscal measures were not particularly targeted to low-income households, implying a high fiscal burden:
 - income measures more targeted and efficient in reducing inequality gap than price measures, but in different degrees across countries

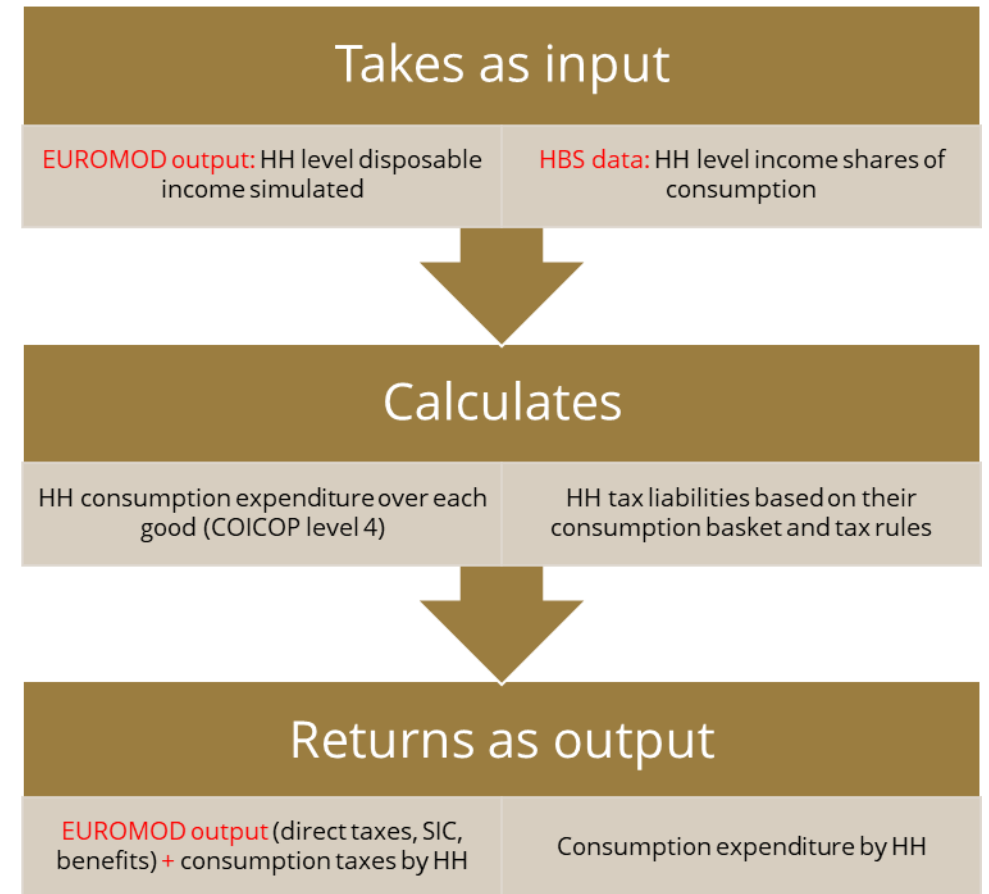


- We followed a comprehensive microsimulation approach, combining income and consumption dimensions

EUROMOD

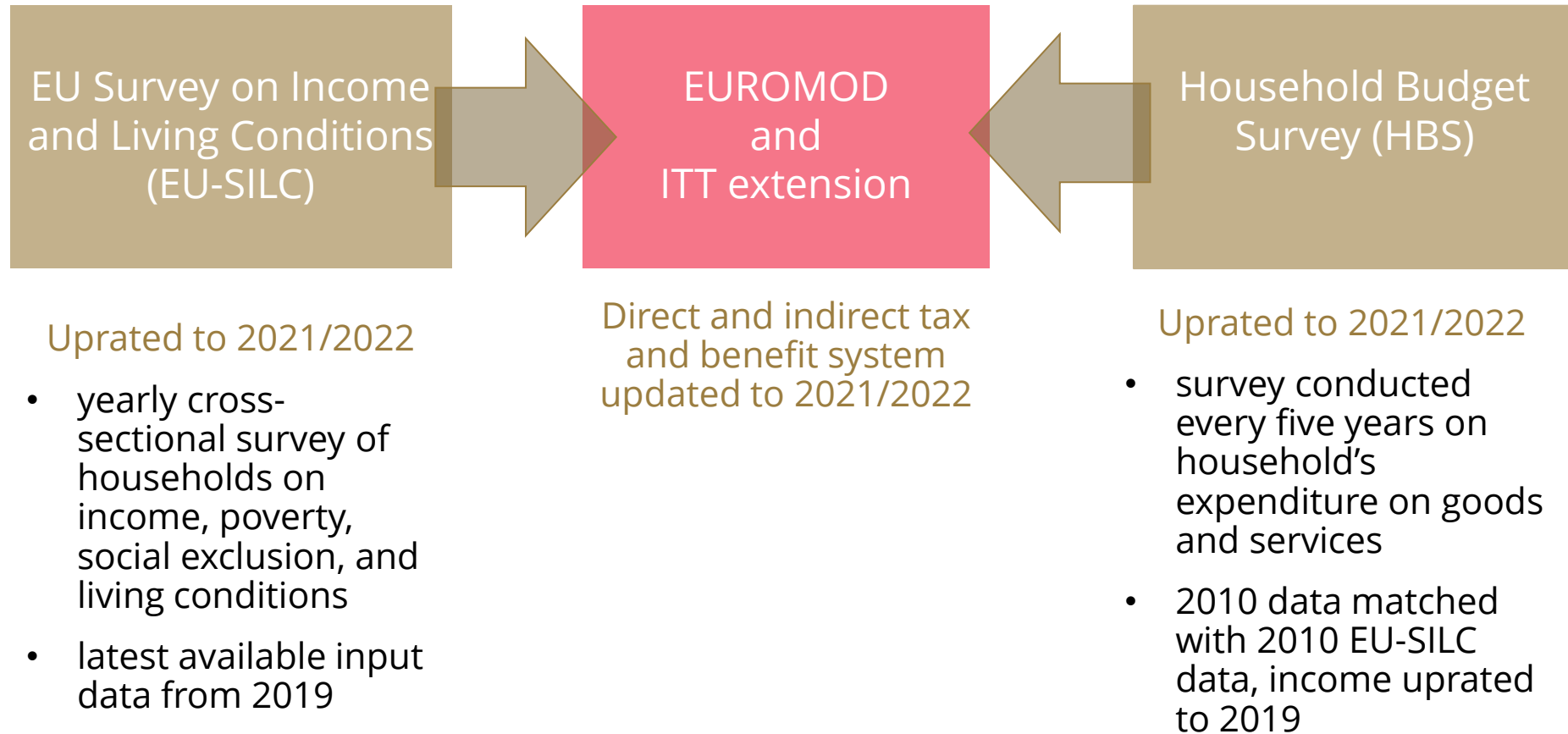


INDIRECT TAX TOOL EXTENSION





- EU-SILC and HBS data “fed” the EUROMOD and the ITT





- We built counterfactual/reform scenarios

INCOME SIDE

- Breakdown 2021/22 changes in household disposable incomes into three components:
(1) Effect of nominal income growth + (2) Effect of inflation compensation measures (ICMs)+ (3) Effect of other government measures
- Simulation of four scenarios
 - a. 2021 tax-benefit system
 - b. 2022 tax-benefit system
 - c. 2022 tax-benefit system with same market incomes as 2021 system
 - d. 2022 tax-benefit system with no energy measures and same market incomes as 2021 system

PRICE SIDE

- Update baseline of 2021 (tax parameters; prices of excise goods)
- Construction of reform scenarios:
 - a. 2022 with all price measures (tax reductions, subsidies and price caps)
 - b. 2022 without price measures (indirect taxes maintained as in 2021 or at the level expected before the inflation surge; counterfactual prices in the absence of the price caps, etc)
- Assumptions:
 - Constant quantities:
 - ✓ Consistency with EUROMOD
 - ✓ Limited ability of consumers to react to unexpected inflation surges and rigidity of consumption of food and energy goods
 - ✓ Implies adjusting consumption share according to the ratio between inflation rate and nominal growth of disposable income
 - Full price pass-through



- In total, we modelled 56 fiscal measures...

Measures modelled by type and country

Type	Sub-type	Germany	Greece	Spain	France	Italy	Portugal
Income	Direct taxes by households	2	-	-	1	-	-
	Social security contributions	-	-	-	-	1	-
	Old age pensions	-	-	-	-	1	1
	Unemployment benefits	-	1	-	-	-	-
	Social transfers in kind	-	-	-	2	-	-
	Other social benefits other than in kind	5	5	2	1	3	3
Income subtotal		7	6	2	4	5	4
Price	VAT	1	2	2	-	1	1
	Excise	1	1	1	1	1	1
	Price cap	-	-	1	2	-	-
	Reimbursement	1	1	-	-	-	1
	Discount/Subsidy	-	4	1	1	1	-
	Social transfers in kind	-	1	-	-	-	-
Price subtotal		3	9	5	4	3	3
Total		10	15	7	8	8	7



- ... which covered almost 100% of all the measures directed to households

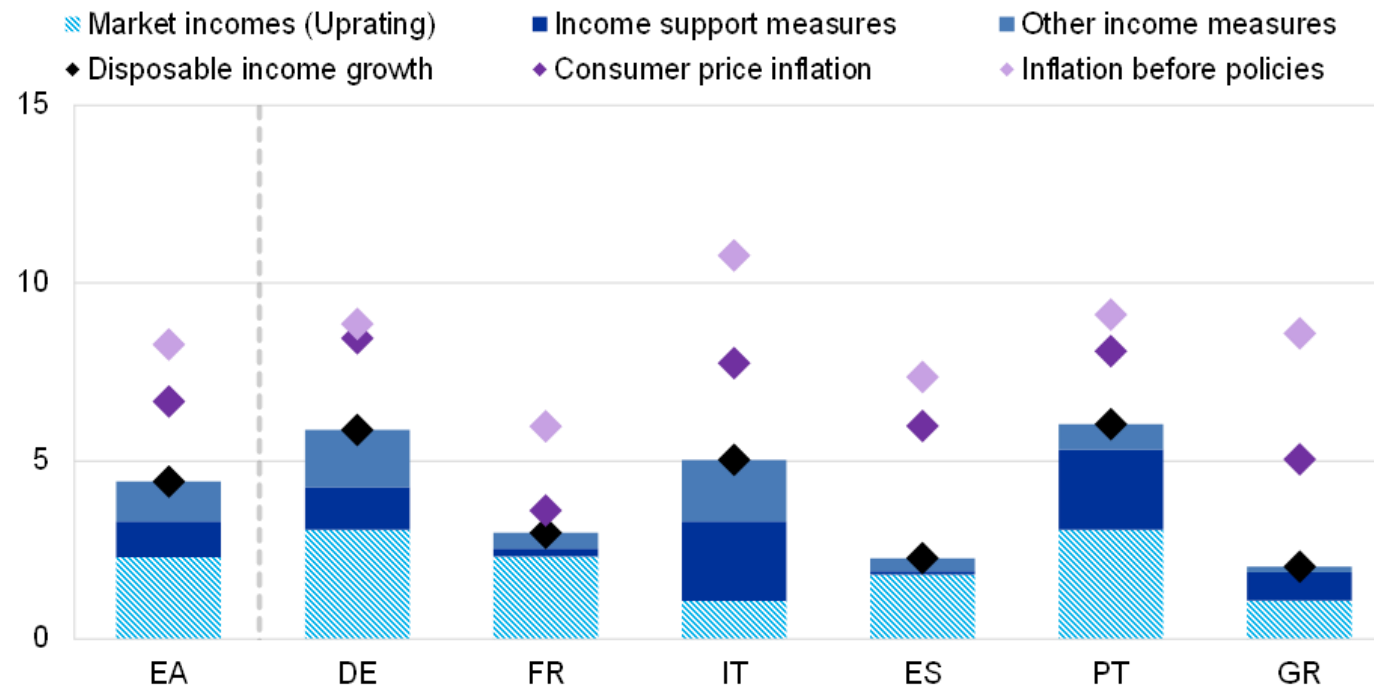
Measures modelled in EUROMOD and ITT

	Germany	Greece	Spain	France	Italy	Portugal	Total
Share of income measures simulated in EUROMOD	100%	100%	49%	100%	94%	100%	96%
Total income measures (billion euro)	42	1.0	1.2	8.4	18.8	2.2	73.6
Share of price measures simulated in EUROMOD	100%	98.3%	100%	99%	100%	100%	95%
Total price measures (billion euro)	11.8	4.4	7.9	35.5	23.8	1	84.4



- Fiscal measures were important to mitigate loss of purchasing power, with some heterogeneity across countries, but nominal income growth was also relevant; different policy mixes across euro area countries

Average effects on disposable income, in the Euro area and euro area countries
percentage, 2021-2022

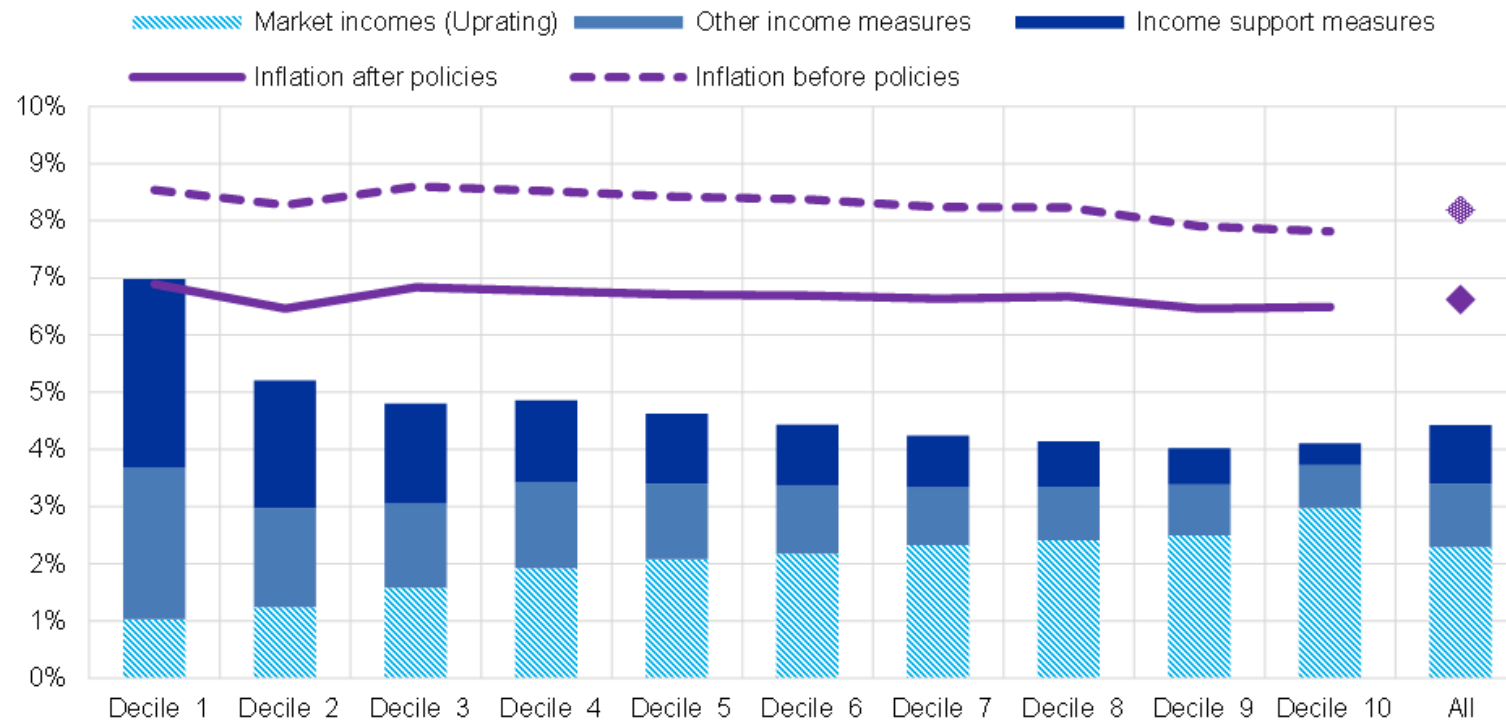


Sources: Own calculations based on EUROMOD and ITT simulations and EU-SILC/HBS. Notes: Euro area proxied as weighted average of Germany, Greece, Spain, France, Italy and Portugal.



- Households in the first deciles benefited relatively more from both income and price measures, while higher income households relied relatively more on market income growth

Effects across the disposable income distribution for the euro area
percentage, 2021-2022

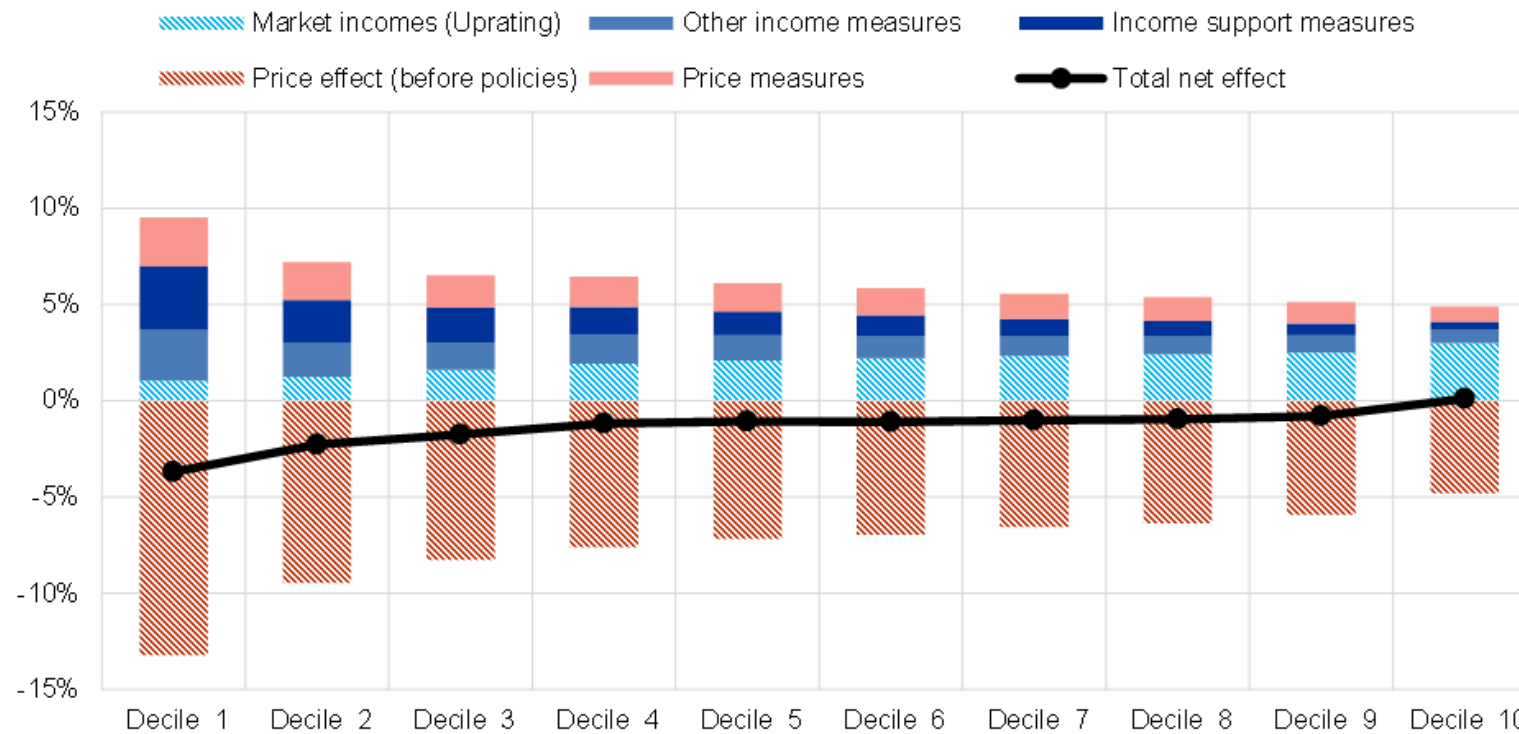


Sources: Own calculations based on EUROMOD and ITT simulations and EU-SILC/HBS. Notes: Euro area proxied as weighted average of Germany, Greece, Spain, France, Italy and Portugal. Individuals are ordered across deciles according to their equalized disposable income in the baseline scenario (2021). Equalized disposable income is by dividing the household's disposable income by its size on the OECD's modified equivalence scale, which assigns a weight of one to the first adult of the household and a weight of 0.5 (0.3) to each additional household member over (under) the age of 14.



- The negative inflation impact is regressive and amplified by the higher share of consumption on income of the poorer households

Distribution of change in consumption basket-weighted disposable income for the euro area percentage, 2021-2022

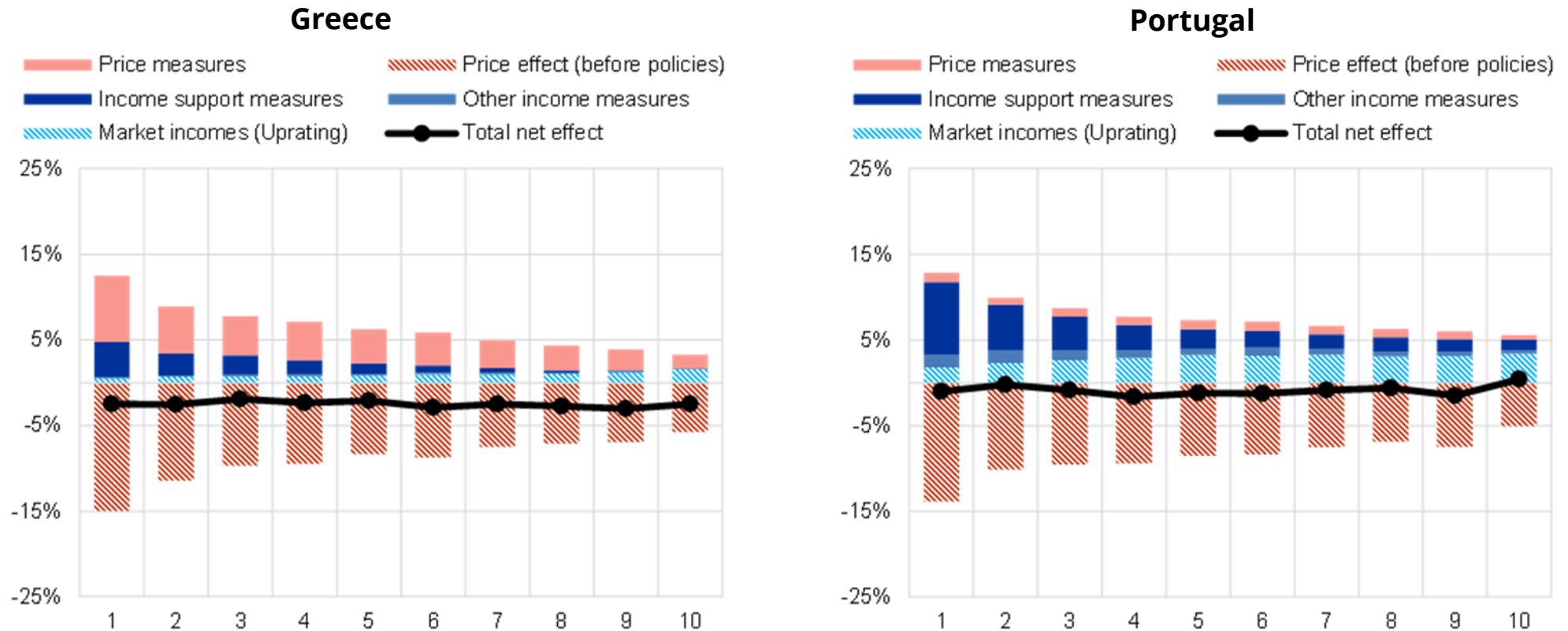


Sources: Own calculations based on EUROMOD and ITT simulations and EU-SILC/HBS. Notes: Euro area proxied as weighted average of Germany, Greece, Spain, France, Italy and Portugal. Individuals are ordered across deciles according to their equivalized disposable income in the baseline scenario (2021). Equivalized disposable income is computed by dividing the household's disposable income by its size on the OECD's modified equivalence scale, which assigns a weight of one to the first adult of the household and a weight of 0.5 (0.3) to each additional household member over (under) the age of 14.



- Greece implemented mainly price measures, while Portugal chose income measures

Distribution of change in consumption basket-weighted disposable income for the euro area
percentage, 2021-2022

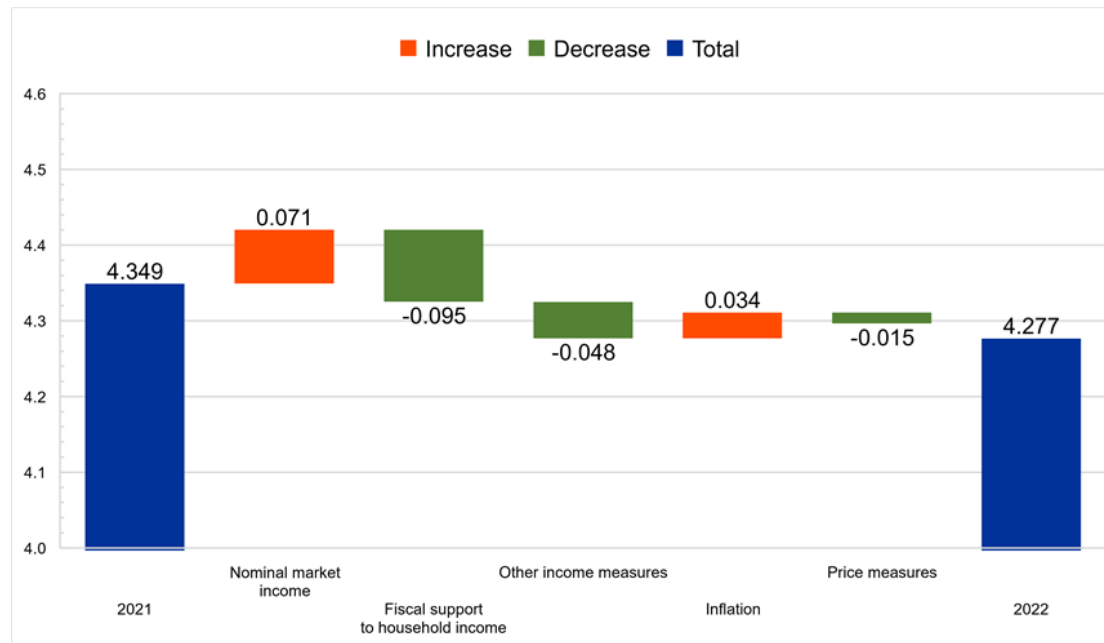


Sources: Own calculations based on EUROMOD and ITT simulations and EU-SILC/HBS. Notes: Individuals are ordered across deciles according to their equalized disposable income in the baseline scenario (2021). Equalized disposable income is computed by dividing the household's disposable income by its size on the OECD's modified equivalence scale, which assigns a weight of one to the first adult of the household and a weight of 0.5 (0.3) to each additional household member over (under) the age of 14.

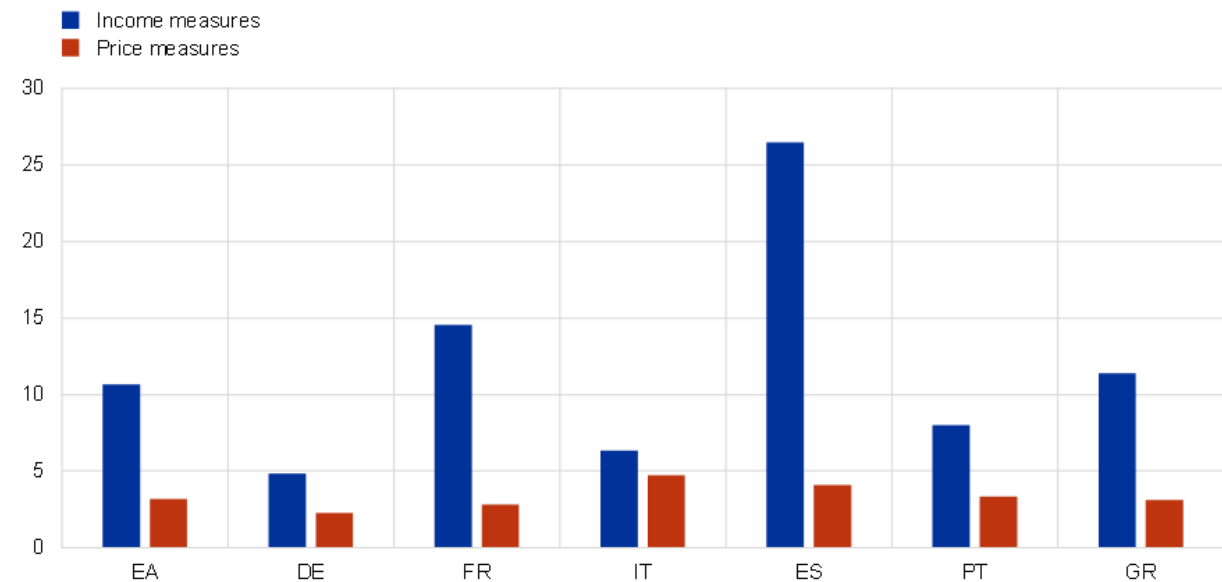


- Policy measures reduced inequality, while nominal market growth and inflation increased it; however non targeted policy measures were costly

Decomposition of changes in the S80/S20 ratio
percentage change, 2021-2022



Change in disposable income of first quintile, per euro spent
2021-2022



Source: Own calculations based on EUROMOD and ITT extension simulations, using EU-SILC and HBS data. Notes: Individuals are ordered across deciles according to their equivalized disposable income in the baseline scenario (2021). Equivalized disposable income is computed by dividing the household's disposable income by its size on the OECD's modified equivalence scale, which assigns a weight of one to the first adult of the household and a weight of 0.5 (0.3) to each additional household member over (under) the age of 14.

Source: Own calculations based on EUROMOD and ITT extension simulations, using EU-SILC and HBS data. Notes: The bars show the change in disposable income of the bottom 20% of the income distribution (first quintile) divided by the cost of the price and income measures in % of GDP. Euro area proxied as weighted average of Germany, Greece, Spain, France, Italy and Portugal. Individuals are ordered across deciles according to their equivalized disposable income in the baseline scenario (2021). Equivalized disposable income is computed by dividing the household's disposable income by its size on the OECD's modified equivalence scale, which assigns a weight of one to the first adult of the household and a weight of 0.5 (0.3) to each additional household member over (under) the age of 14.



- We found that...

1. The purchasing power of lower-income households was more severely affected by the 2022 inflation surge than that of high-income households:
 - higher weight of energy intensive goods in consumption basket
 - higher share of income spent on consumption (negative savings)
2. Fiscal measures significantly contributed to mitigating the loss in purchasing power:
 - gap almost completely closed in France, Greece, Portugal, and mostly closed in Italy
 - diversity of policy mixes across euro area countries (e.g Greece opted for price measures, while Portugal chose mainly to implement income policies)
3. Most fiscal measures were not particularly targeted to low-income households, implying a high fiscal burden:
 - income measures more targeted and efficient in reducing inequality gap than price measures, but in different degrees across countries



THANK YOU!



sriscado@bportugal.pt