

We are all facing the same storm, but not all are in the same boat

A distributional picture of the purchasing power effects of the 2021-22
energy price shock and compensating measures

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Preliminary results – do not quote without permission of the authors

- All implemented policies (VAT cut, social tariff, ...) affect the relative price of energy products
- These policies are reducing the price signal by lowering the marginal price paid for energy:
 - Muting demand adjustment to the price shock, energy-conserving behavior and energy efficiency investments
 - This keeps the global energy price high
- Shift from price policies to income policies:
 - Ari et al. (2022) – IMF working paper:
 - “New **policy measures that mute the price signal should be avoided** and should be wound down where they have already been introduced.”
 - “Governments should increasingly focus their policy effort on providing vulnerable households with **income support without distorting the marginal price** they pay for energy.”
 - OECD (2022): “The key message emerging from this policy brief is that governments will need to **shift from policies that directly seek to limit price increases to those that cushion their impact through targeted income support.**”

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Mitigating the energy price shock: reconciling distributional concerns with
the need for price incentives

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- Methodology
- Distributional impact of energy price shock and price compensation
- Designing income compensation
- Measuring energy poverty
- Discussion

- **Methodology**
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- Model
 - EUROMOD Microsimulation model: direct taxes and benefits
 - Extended with an Indirect Tax Tool (ITT)

- Data
 - SILC 2018
 - Matched with HBS 2018 (Akoguz et al. 2020; Capéau, Decoster and Güner, 2021).

We model a set of four different counterfactual systems:

- Baseline (A): The Belgian tax-benefit system of 2021
- Energy price shock (B): Jan-21 - Dec-22
- Automatic indexation of wages and benefits (C)
- Compensating measures (D)
 - Social tariff (+ extension)
 - VAT cut on gas and electricity (21% to 6%)
 - Lump sum cheques

		Systems			
		A	B	C	D
1	Price shock				
2	Automatic indexation				
3	Social tariff				
4	VAT cut on gas and electricity				
5	Energy/heating cheque				

- By comparing two systems, we measure a welfare effect as
 - the extra amount of money a household would need (neg. welfare effect) or would have left (pos. welfare effect),
 - when keeping their consumption basket constant,
 - and taking the received compensation into account.
- No behavioral reaction:
 - Constant quantities
 - “Morning-after effect”

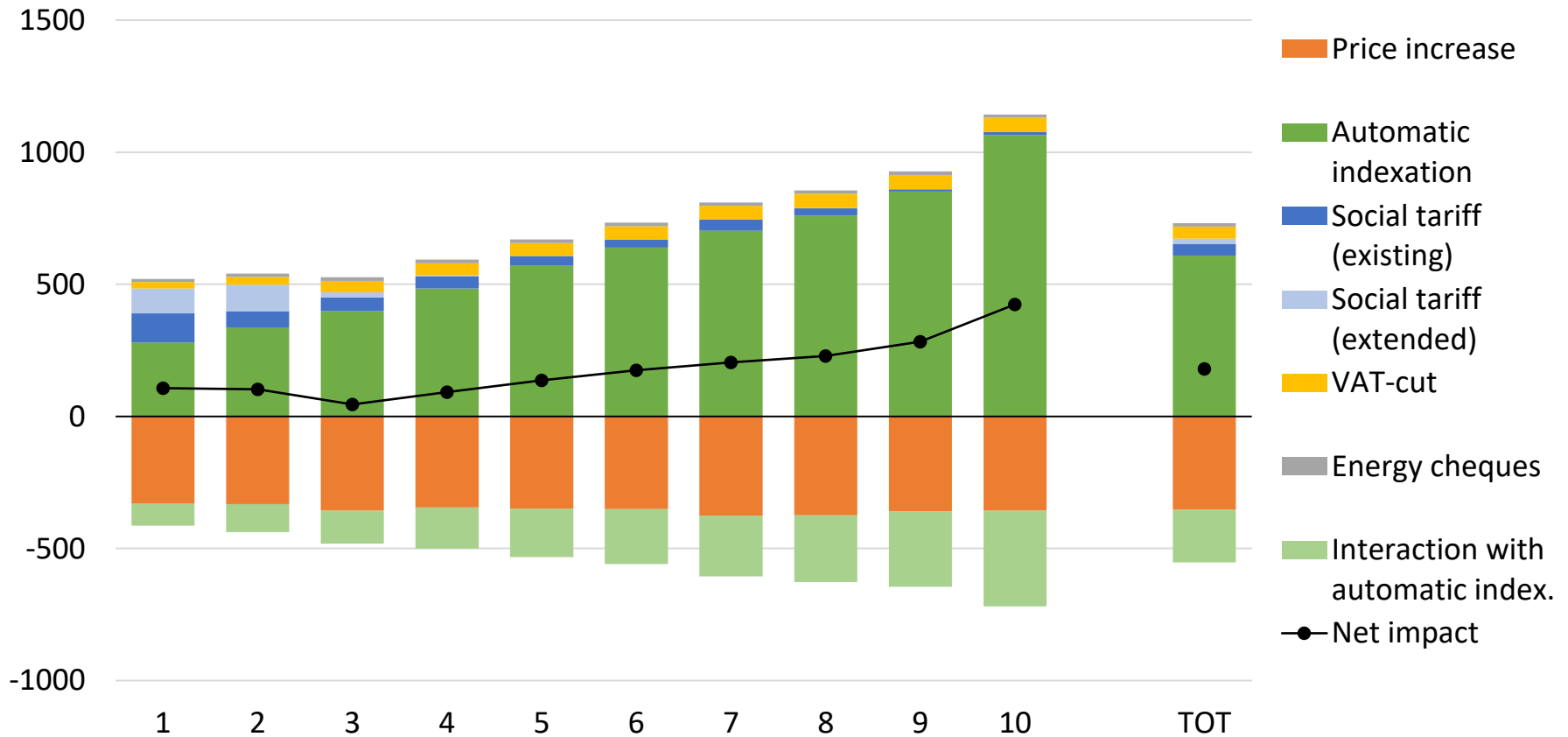
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- Distributional impact of the energy price shock and all compensation
 - System A vs System D

		Systems			
		A	B	C	D
1	Price shock				
2	Automatic indexation				
3	Social tariff				
4	VAT cut on gas and electricity				
5	Energy/heating cheque				

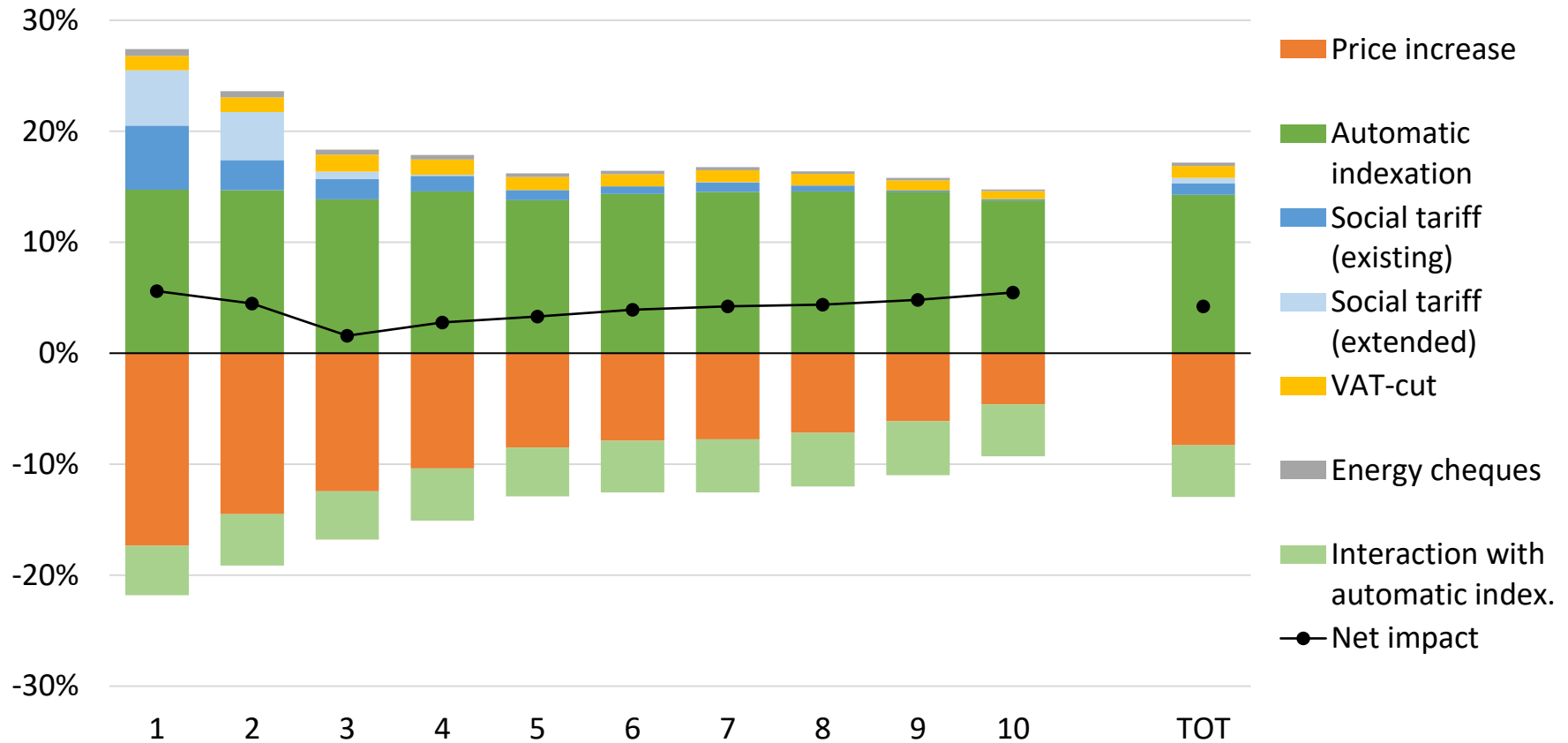
Distributional impact of price shock and all compensation (euro)



Note: deciles based on equiv. disp. household income; energy consumption includes gas, electricity and heating oil

Source: own calculations on HBS-SILC 2018

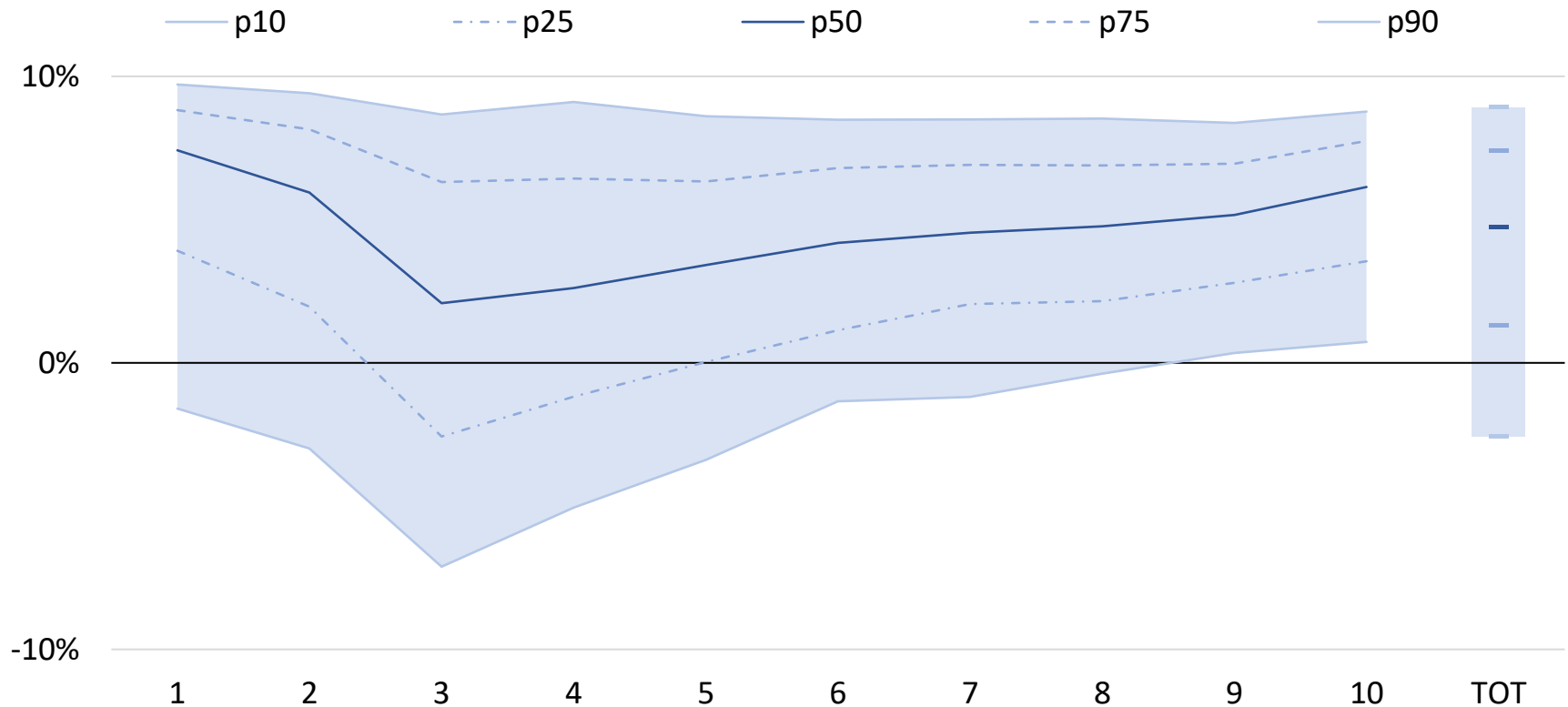
Distributional impact of price shock and all compensation (% of inc.)



Note: deciles based on equiv. disp. household income; energy consumption includes gas, electricity and heating oil

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Distributional impact of price shock and all compensation (% of inc.)



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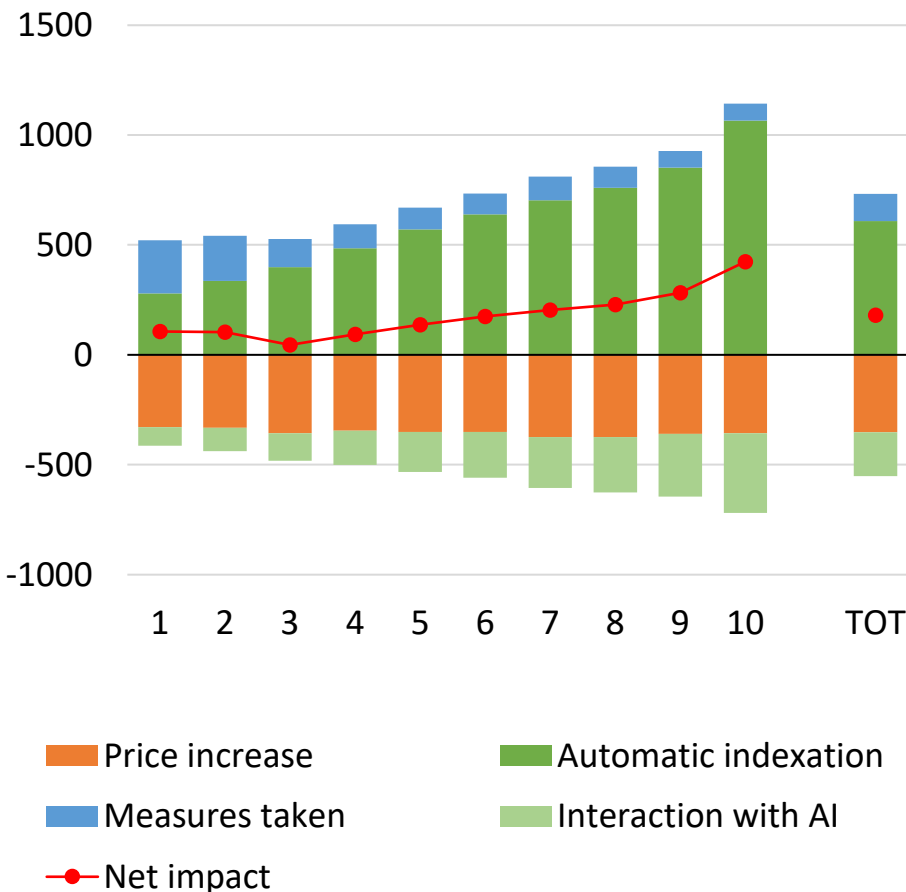
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We add a two new systems:

- System E:
 - Reduced indexation (system D) -> “freeze” automatic indexation mechanism
 - Total budget basic income support = total budget previous compensation (system D)
- System F:
 - Full indexation (system C)
 - Crisis tax on PIT

		Systems					
		A	B	C	D	E	F
1	Price shock						
2	Automatic indexation						
3	Social tariff						
4	VAT cut electricity						
5	Energy cheque						
6	Basic income support						
7	Crisis surcharge on PIT						

Distribution of price shock and basic income support (euro)

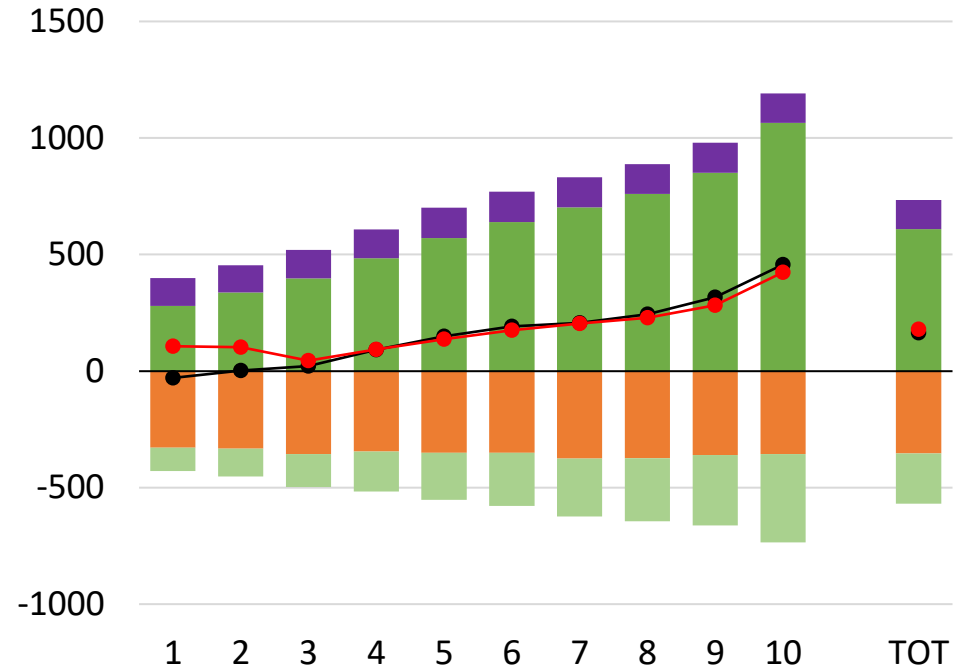
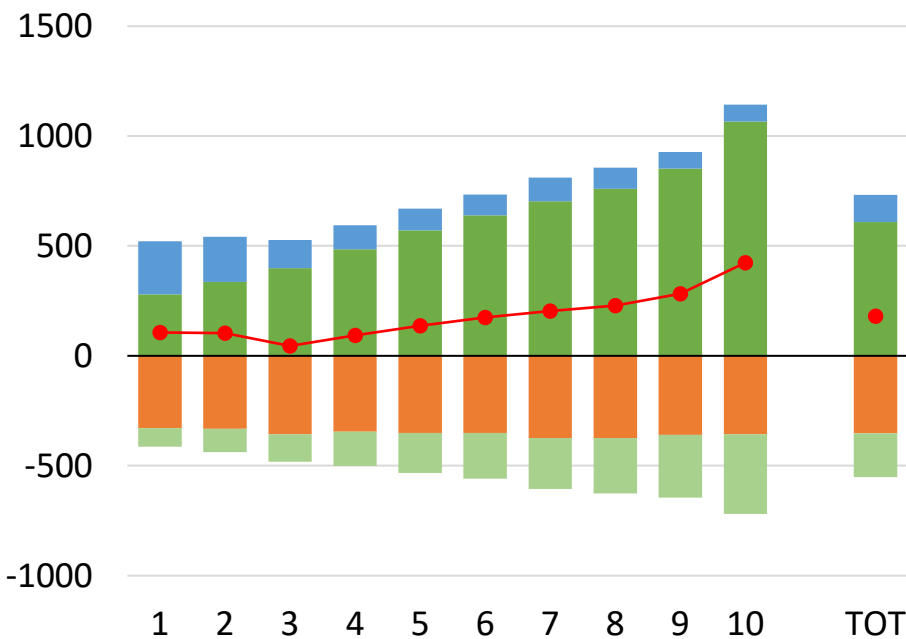


- Policy maker wants to replace the previous compensation by income compensation

- Net income cheque
- Differentiated by household composition using energy consumption equivalence scales:

- Adult: 1
- Extra adult (>14y): 0.23
- Child (<14y): 0.05

Distribution of price shock and basic income support (euro)



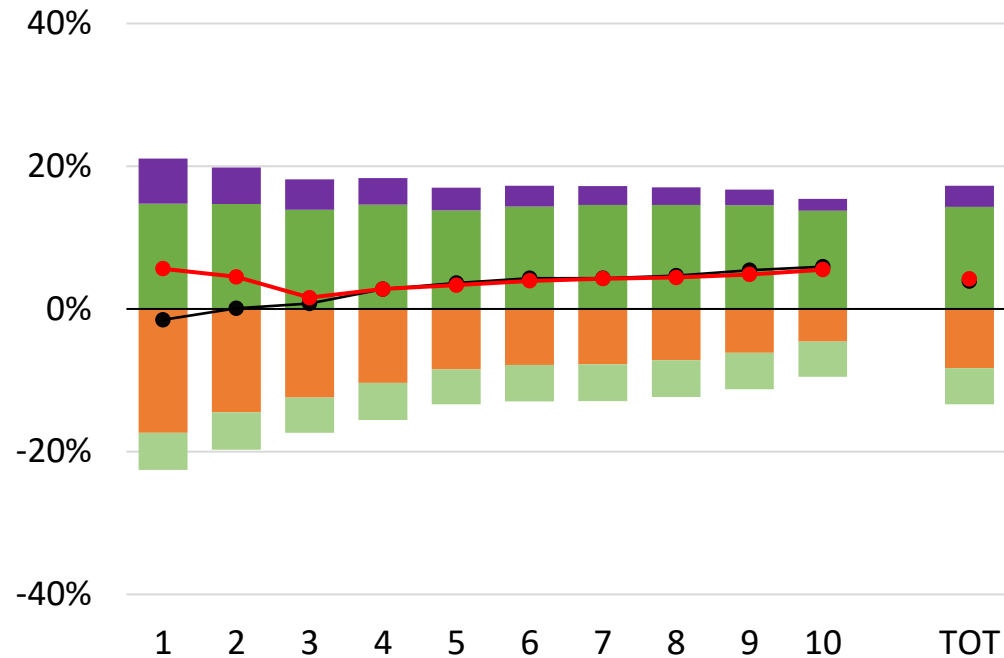
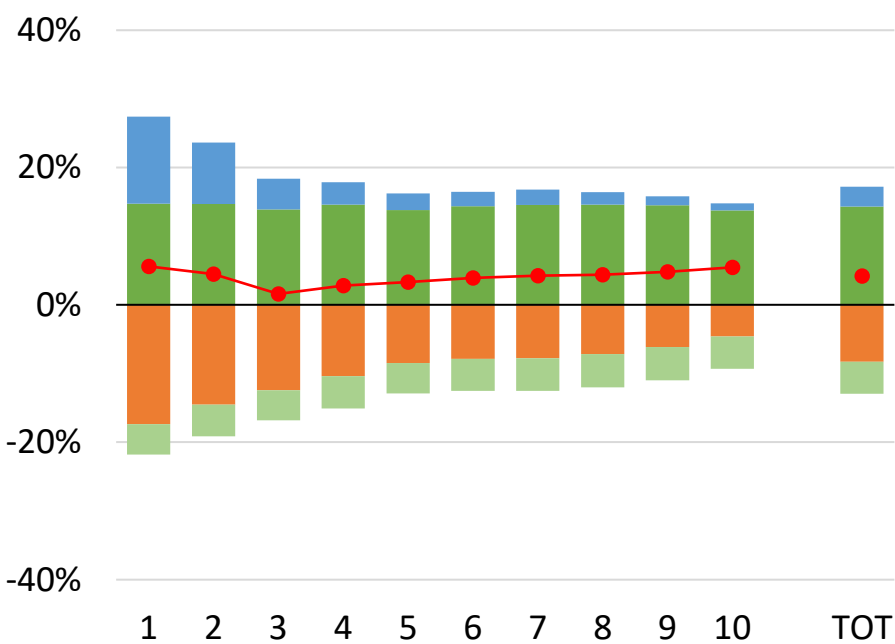
Price increase
Measures taken
Net impact

Automatic indexation
Interaction with AI

Price increase
Income support
Net impact

Automatic indexation*
Interaction with AI*
(Previous) net impact

Distribution of price shock and basic income support (% of inc.)



Price increase
Measures taken
Net impact

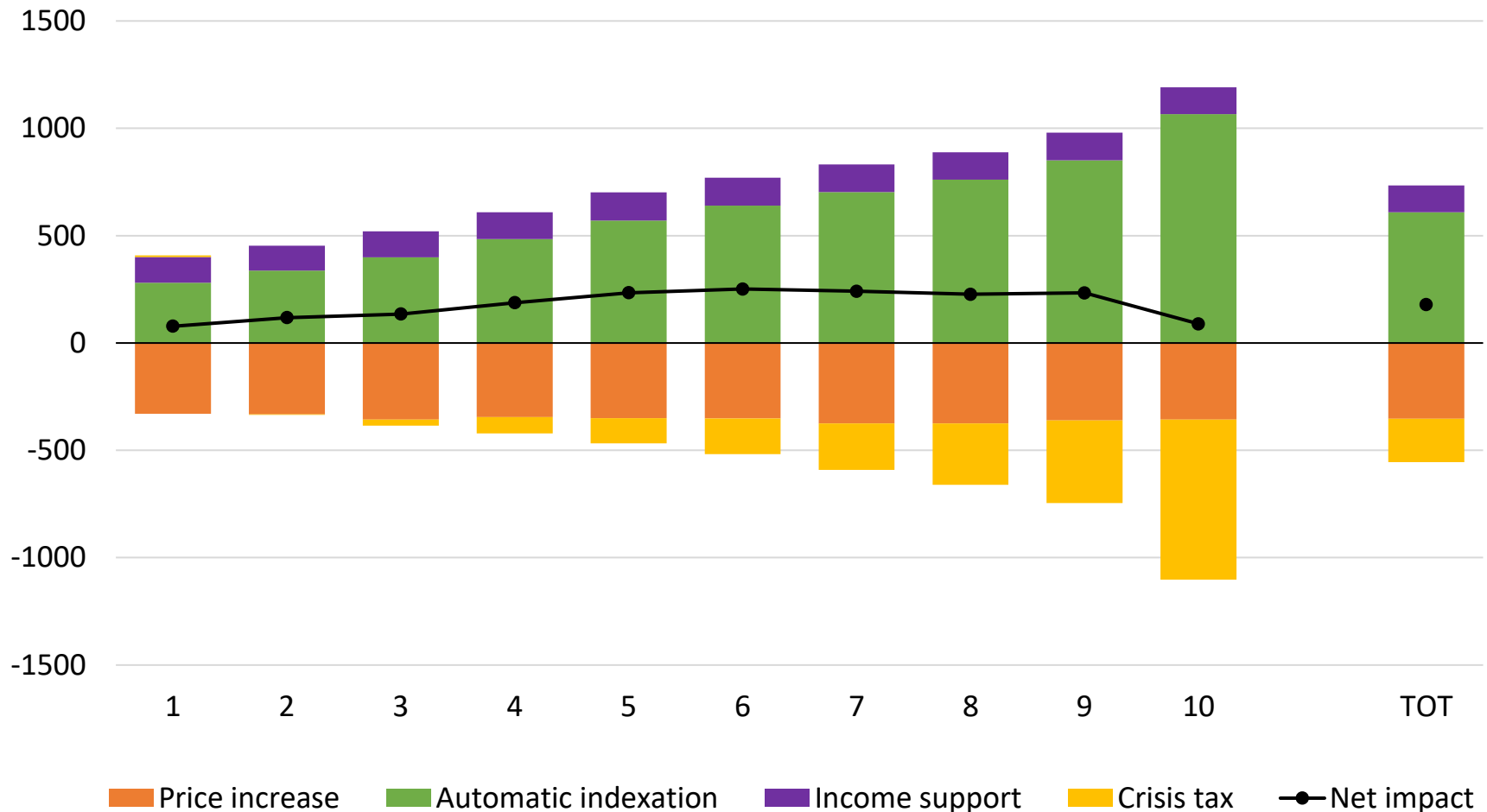
Automatic indexation
Interaction with AI

Price increase
Income support
Net impact

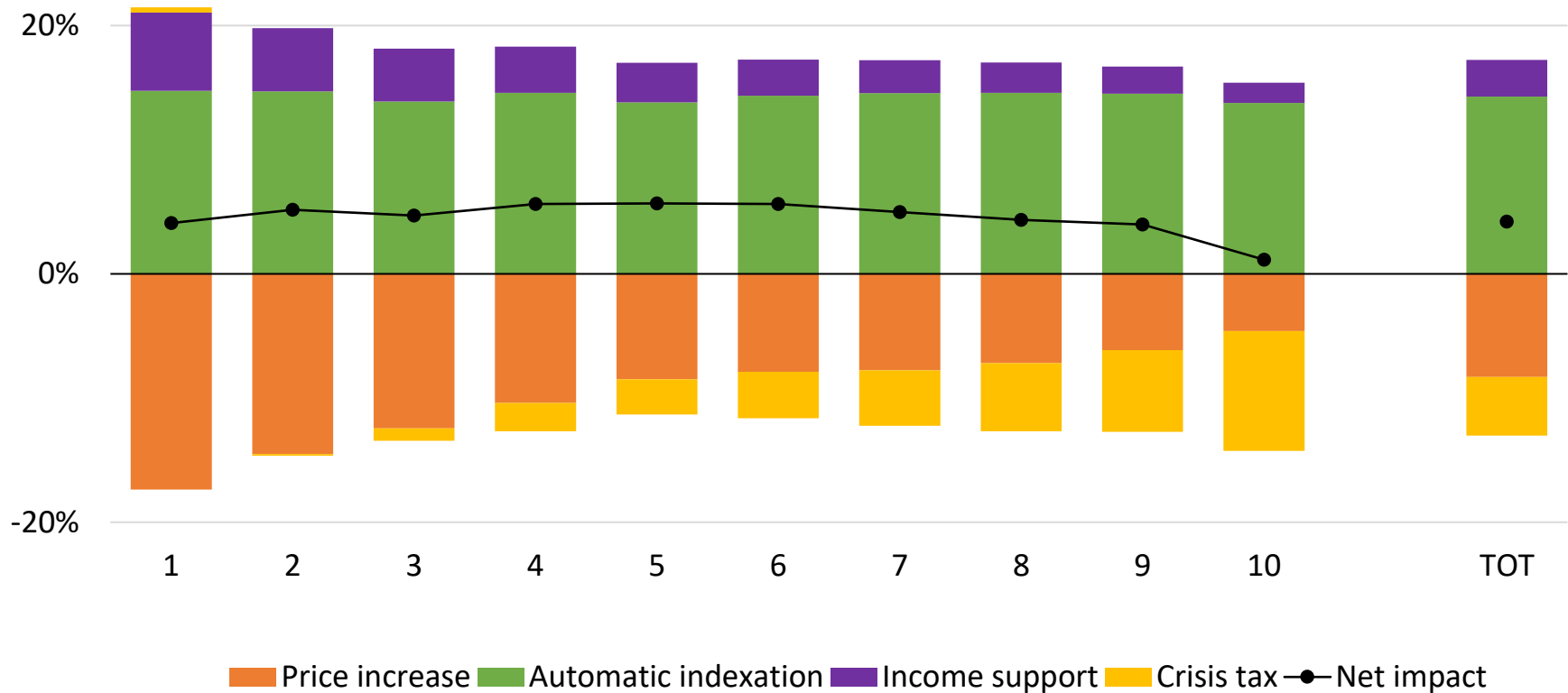
Automatic indexation*
Interaction with AI*
(Previous) net impact

- Suppose a policy maker does not want to “freeze” the automatic indexation mechanism
 - It is an agreement between employers and employees
- This decision implies a significant increase of the labour cost for companies
- Therefore, the policy maker implements a surcharge on the personal income taxes to finance (‘subsidize’) the increased labour costs
 - Surcharge of 16% on personal income taxes

Distribution of price shock, basic income support and surcharge (euro)



Distribution of price shock, basic income support and surcharge (% of inc.)



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- Definition of energy poverty:
 - Energy poverty = $\text{Equivalized (disposable income} - \text{energy expenditures} + \text{compensation)} < 60\% \text{ baseline equivalized (disposable income} - \text{energy expenditures)}$

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Energy poverty

Baseline	15.4%
Shock	28.5%
Shock + Automatic indexation	16.4%
Shock + All compensation	12.5%
Shock + Income compensation	16.4%
Shock + Income compensation + Full indexation & crisis taks	13.1%

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- We need to avoid compensation measures that affect the relative price of energy products
- At the start of the energy crisis, there may have been good reasons to immediately mute prices
- Now, we need to shift from price policies to income policies
- In Belgium: interaction effects of automatic indexation and prices (!)
- We show that even a simple income support mechanism can have a similar distributional impact to the current compensation