

# High Inflation and Nominal Wage Rigidity: The Implicit Response of the Italian Tax-Benefit System

**Stefano Boscolo**<sup>1</sup> Francesco Figari<sup>2</sup> Carlo Fiorio<sup>1</sup> Andrea Riganti<sup>1</sup>

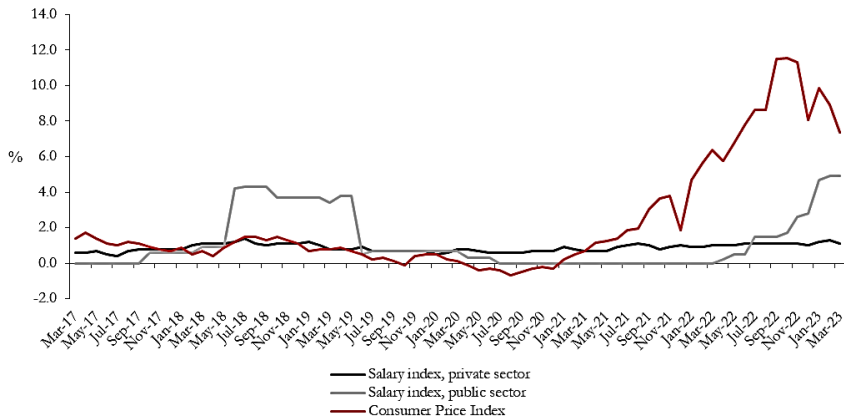
<sup>1</sup>Department of Economics, Management and Quantitative Methods – University of Milan

<sup>2</sup>Department of Economics and Business Studies – University of Eastern Piedmont

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# (1) Motivation

## Wage and price growth in Italy (monthly variation with respect to the previous year)



Source: Authors' elaborations on ISTAT statistics on contractual wages and prices

## (2) Motivation

- High inflation (CPI 2022: 8.1%), but wages struggle to keep up
- Pensions and social transfers are indexed to inflation
- Inflation-induced nominal gains for specific categories:
  - Public expenditure financing and tax burden
  - Short- and long-term redistributive effects both across and within households
- Context: ageing societies, inflationary pressures, lack of automatic mechanisms to adjust wages

# Research question(s)

- To what extent do inflation-induced revenue and expenditure variations determine the redistributive effect and its vertical and horizontal subeffects? How do these variations distribute across households?
- Inflation-induced revenue variations ( $\Delta T$ ):
  - Fiscal drag through progressive taxes
  - (Reserve) Fiscal drag through social insurance contributions (SICs)
  - Revenue variation attributed to inflation-dependent SIC-related policy changes
- Inflation-induced expenditure variations ( $\Delta B$ ):
  - Indexation for work-related pensions
  - Indexation for social assistance pensions and other social transfers
  - Benefit erosion for non-indexed social transfers

- Short-term effects of modern tax-benefit systems in response to macroeconomic shocks (Dolls et al., 2012; Bargain et al., 2017; Cantó et al., 2022)
- Fiscal drag and tax progressivity (Immervoll, 2005, 2006; Levy et al., 2010)
- Effect of indexation rules on:
  - Income inequality and poverty (Sutherland et al., 2008; Whitehouse, 2009; Hinrichs, 2015; Paulus et al., 2020)
  - Pension adequacy and pension wealth accumulation (Grech, 2015)
- Contribution of tax-benefit instruments to the vertical and horizontal effects (Barbetta et al., 2018; Di Caro, 2020)

# (1) Institutional context

- Tax rules and brackets are not indexed → Room for fiscal drag
- Statutory thresholds for the payment of SICs are indexed → Room for (reserve) fiscal drag
- Pensions and social transfers are generally indexed, but indexation varies according to the type of benefit:
  - Work-related pensions:
    - **Full indexation** up to 4 times the minimum pension amount (€2095.32 in 2022)
    - **Partial indexation (gradual)** from 4 to 10 times: 85%–32%
    - **Partial indexation (fixed)** from 10 times: 32%
  - Social transfers (*i.e.* social assistance pensions, family allowances, unemployment benefits and other): **full indexation**
- Lack of indexation for the minimum income scheme (RdC) → Room for benefit erosion

## (2) Institutional context

- Backward-looking structure of the indexation mechanism: percentage variation between the average value of the Italian CPI (FOI index) in the previous year ( $t - 1$ ) and the corresponding value in  $t - 2$ , with  $t$  equal to the year of benefit receipt
- Indexation rate for pensions in 2023 (provisional): 7.3%
- Indexation rate for SIC-related thresholds and social transfers in 2023: 8.1%

# (1) Empirical strategy

- Microsimulation-based study: EUROMOD (IT)
- Data: 2019 EU-SILC for Italy (income values refer to 2018)
- Updating techniques to correct time inconsistencies between monetary input data and the policy year
- We compare a baseline scenario that reflects as closely as possible the 2023 tax-benefit system with two zero-inflation counterfactual scenarios
- The scenario comparisons are intended to capture inflation-induced revenue and expenditure variations at the unit level



## (2) Empirical strategy

- **Baseline scenario (Scenario I):**
  - Policy year: 2023
  - Up-rating factors: high inflation, wages grow but less than prices according to the Index for contractual hourly wages released by ISTAT, self-employment income follows price growth
- **Counterfactual scenarios (Scenario NI1 and Scenario NI2):**
  - Policy year: 2023 (inflation-dependent tax-benefit rules: 2022)
  - Up-rating factors: no price growth and wage growth from 2022 onwards
  - Changes to pension-related contribution rates for employees in the period 2022–2023:
    - **Inflation-independent** policy changes in Scenario NI1
    - **Inflation-dependent** policy changes in Scenario NI2

### (3) Empirical strategy

- To isolate the contribution of inflation-induced revenue and expenditure variations ( $\Delta T$  and  $\Delta B$ ) to the redistributive effect ( $RE$ ), we implement the decomposition method put forward by Urban (2014) in **Scenario I**:

$$\beta RE = \beta VE - \beta HE = \sum_{i=1}^m \beta VE_{TB_i} - \sum_{i=1}^m \beta HE_{TB_i}$$

where  $\beta$  stands for marginal change;  $VE$  and  $HE$  are the vertical equity and horizontal inequity effects, respectively;  $TB_i$  is the  $i$ -th tax-benefit instrument

- The decomposition is based on the earlier contributions of Kakwani (1984) and Lerman and Yitzhaki (1985)
- We consider  $\Delta T$  and  $\Delta B$  as separate tax-benefit instruments from taxes, pensions and social transfers net of the effect of (reserve) fiscal drag, inflation-dependent policy changes and indexation rules

# (1) Results

- Unit of analysis: household, equivalised income (modified-OECD scale)

## Inflation-induced nominal gains and losses by tax-benefit instrument (values in non-equivalised terms)

Instrument	Comparison #1: I vs. NI1		Comparison #2: I vs. NI2	
	€ (bn)	% disposable income I	€ (bn)	% disposable income I
Variation SICs (employees/atypical)	-0.666	-0.08	-13.193	-1.56
Variation SICs (self-employed)	-1.183	-0.14	-1.183	-0.14
<b>Fiscal drag progressive taxes</b>	<b>6.877</b>	<b>0.81</b>	<b>9.652</b>	<b>1.14</b>
<b>Index. work-related pensions</b>	<b>16.793</b>	<b>1.99</b>	<b>16.793</b>	<b>1.99</b>
Index. unemployment benefits	1.123	0.13	1.123	0.13
Index. social assistance pensions	2.198	0.26	2.176	0.26
Index. family allowances	1.431	0.17	1.382	0.16
Index. other social transfers	0.214	0.03	0.214	0.03
<b>Erosion minimum income scheme</b>	<b>-0.029</b>	<b>0.00</b>	<b>-0.381</b>	<b>-0.05</b>
<b>Nominal net gain/Total no. households</b>	<b>16.702</b>	<b>1.98</b>	<b>26.030</b>	<b>3.08</b>

## (2) Results

- $\beta RE = 9.611$ ,  $\beta VE = 13.685$ ,  $\beta HE = 4.077$

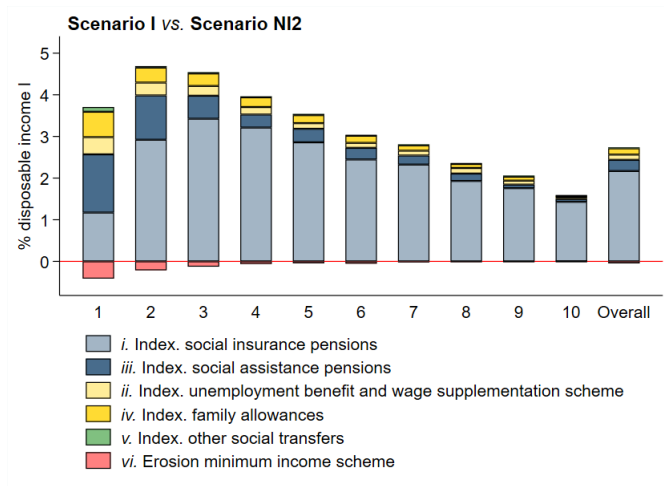
Tax-benefit instruments' contributions (%) to  $\beta RE$ ,  $\beta VE$  and  $\beta HE$   
(selected instruments)

Instrument	Comparison #1: I vs. NI1				Comparison #2: I vs. NI2			
	$\beta RE$	$\beta VE$	$\beta HE$	% disposable Income I	$\beta RE$	$\beta VE$	$\beta HE$	% disposable Income I
Variation SICs (employees/atypical)	-0.1	-0.1	-0.0	-0.1	1.2	1.0	0.6	-1.5
Variation SICs (self-employed)	0.5	0.2	-0.5	-0.1	0.5	0.2	-0.5	-0.1
<b>i) Fiscal drag progressive taxes</b>	<b>-0.6</b>	<b>-0.1</b>	<b>1.1</b>	<b>0.8</b>	<b>-0.8</b>	<b>-0.3</b>	<b>0.9</b>	<b>1.1</b>
<b>Index. work-related pensions</b>	<b>4.2</b>	<b>2.9</b>	<b>0.1</b>	<b>2.2</b>	<b>4.2</b>	<b>2.9</b>	<b>0.1</b>	<b>2.2</b>
Index. unemployment benefits	0.4	0.3	0.0	0.1	0.4	0.3	0.0	0.1
ii) Index. social assistance pensions	1.4	1.6	1.9	0.3	1.4	1.6	1.8	0.3
Index. family allowances	0.5	0.5	0.4	0.2	0.6	0.5	0.4	0.1
Index. other social transfers	0.0	0.1	0.2	0.0	0.0	0.1	0.2	0.0
iii) Erosion minimum income scheme	-0.1	-0.1	0.0	0.0	-0.3	-0.3	-0.3	0.0
<b>Progressive taxes net of i)</b>	<b>54.1</b>	<b>45.2</b>	<b>24.2</b>	<b>20.7</b>	<b>54.4</b>	<b>45.4</b>	<b>24.3</b>	<b>20.4</b>
<b>Social assistance pensions net of ii)</b>	<b>11.9</b>	<b>15.0</b>	<b>22.2</b>	<b>2.7</b>	<b>12.0</b>	<b>15.0</b>	<b>22.2</b>	<b>2.7</b>
<b>Minimum income scheme net of iii)</b>	<b>12.6</b>	<b>11.5</b>	<b>8.9</b>	<b>1.4</b>	<b>12.8</b>	<b>11.8</b>	<b>9.2</b>	<b>1.4</b>

- Contribution of  $\Delta T$  to  $\beta RE$ : -0.2% (#1), 0.9% (#2)
- Contribution of  $\Delta B$  to  $\beta RE$ : 6.4% (#1), 6.3% (#2)

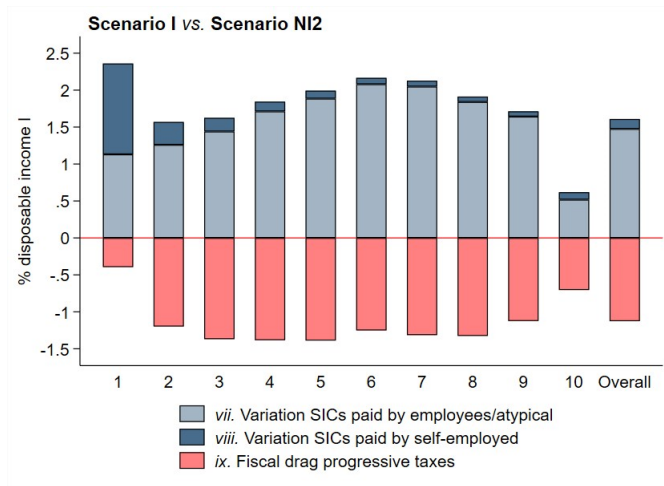
### (3) Results

#### (1) Inflation-induced resource distribution by disposable income decile



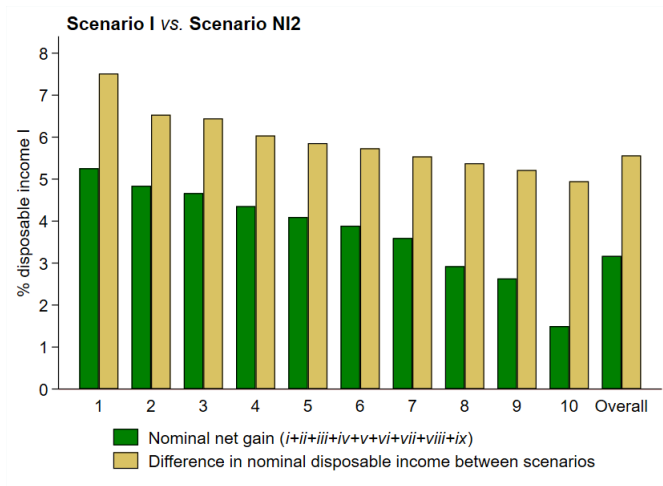
## (4) Results

### (2) Inflation-induced resource distribution by disposable income decile



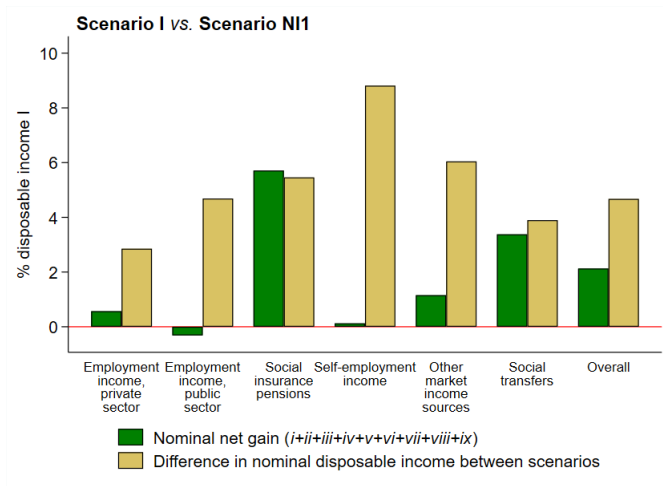
## (5) Results

### (3) Inflation-induced resource distribution by disposable income decile



## (6) Results

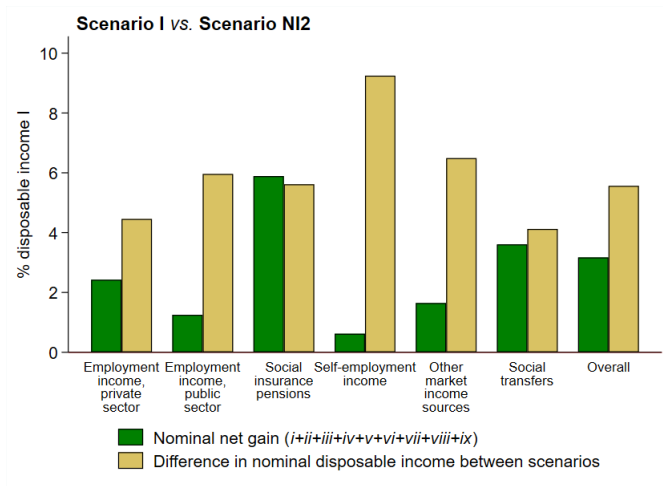
### (1) Inflation-induced resource distribution by prevalent income source





## (7) Results

### (2) Inflation-induced resource distribution by prevalent income source



# Take-home points

- Inflation-induced nominal net gains sum up to:
  - €26.0 bn (changes to SICs rates as **inflation-dependent** policy changes)
  - €16.7 bn (changes to SICs rates as **inflation-independent** policy changes)
- Inequality-increasing effect of fiscal drag (up to -0.8% of  $\beta RE$ )
- Inequality-decreasing effect of:
  - the inflation-induced variation in SICs paid by employees (1.2% of  $\beta RE$ )
  - benefit indexation rules (up to 6.4% of  $\beta RE$ )
- Levelling effect of inflation-induced resources in reducing disposable income differences
- Less burdensome loss in purchasing power for pensioner households over private sector employee households: call for a partial adjustment to inflation for wages (?)

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Thank you!

stefano.boscolo@unimi.it