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The series is available online at www.bancaditalia.it .

ISSN 1972-6643 (online)

Designed by the Printing and Publishing Division of the Banca d'Italia

FISCAL DRAG, DISCRETIONARY POLICY MEASURES AND THE PURCHASING POWER OF ITALIAN HOUSEHOLDS IN 2022-2025

by Nicola Curci* and Antonella Tomasi*

Abstract

This paper analyses the dynamics of household disposable income during and after the 2022–2023 inflationary shock. Using a microsimulation approach based on Banca d'Italia's BIMic model, we decompose changes in disposable income into four components: (i) nominal income adjustments to inflation; (ii) real income growth; (iii) fiscal drag and benefit erosion; and (iv) policy interventions. Our results indicate that, on average, household purchasing power eventually returned to pre-crisis levels in 2025. Over 2022-2025, disposable income growth was slightly higher than inflation for households in the three middle income quintile groups. It was broadly in line with inflation for the bottom quintile and fell slightly short of it for the top quintile.

JEL Classification: D31, H24, E62.

Keywords: fiscal drag, benefit erosion, inflation.

DOI: 10.32057/0.QEF.2026.998

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The views expressed in this paper are those of the Authors and do not necessarily reflect the opinion of Banca d'Italia.

1 Introduction[1]

Between 2021 and 2024, consumer prices in Italy rose by over 16%, sharply reducing households' purchasing power. According to national accounts, the decline in households' real disposable income in 2022—at the peak of the inflationary episode—was fully recovered only in 2024, with further gains in early 2025.

During the inflationary shock, public debate focused on two issues: contractual wages lagging behind inflation; and fiscal drag, which erodes part of the recovery achieved through nominal income adjustments. These factors fueled the perception that real disposable income remains below pre-shock levels. However, as data show, this is not the case on average, though distributional concerns persist.

This paper examines the drivers of households' disposable income changes between 2022 and 2025, focusing on four elements: (i) nominal income adjustments; (ii) fiscal drag and benefit erosion; (iii) economic growth, mainly via employment; and (iv) discretionary tax-benefit policy changes.

Fiscal drag and benefit erosion play a central role in our decomposition. We first clarify the definition adopted, as consensus on the phenomenon's economic meaning contrasts with disagreement on measurement.

From an economic perspective, fiscal drag and benefit erosion are intuitive concepts: they arise whenever key tax-benefit parameters—such as income tax brackets and benefit thresholds—are fixed in nominal terms while inflationary pressures affect the economy. If they remain unchanged, as is currently the case in many countries,[2] nominal

[1]We are extremely grateful to Antonio Coran and Andrea Mattia for very long and fruitful discussions about the main topics of this work; to Fabrizio Balassone, Andrea Brandolini, Emanuele Dicarlo, Marzia Romanelli, Martino Tasso, Pietro Tommasino and Roberto Torrini for discussing with us the results of the work at various stages of development. We also thank Gaetano Basso, Fabrizio Colonna, Raffaella Nizzi, Marco Savegnago, Giordano Zevi and Roberta Zizza for helpful suggestions provided on the basis of a preliminary and partial version of the work. The views expressed in this paper are those of the Authors and do not necessarily reflect the opinion of Banca d'Italia.

[2]Between 2019 and 2023, only Austria, Croatia, and Slovakia applied automatic indexation of

income adjustments to inflation push taxpayers into higher brackets,[3] raising average tax rates, or above benefit thresholds, reducing transfers. This creates a hidden shift of resources from households to the public budget—often referred to as a 'stealth tax.'

Measuring fiscal drag and benefit erosion is less straightforward. We define fiscal drag as the increase in the average tax rate caused by inflation-driven nominal income growth, and benefit erosion as the decline in the benefit-to-income ratio for the same reason. When inflation-linked income growth raises average tax rates, the tax system absorbs part of the adjustment, reducing purchasing power. Under our definition, when taxable incomes do not fully adjust to prices, fiscal drag reflects only the inflation passed through to income.

Alternative measures exist; we discuss them later. For instance, fiscal drag is often defined as the additional tax burden that arises when income brackets remain unadjusted for *inflation* (as opposed to *nominal income changes*, as we suggest), implying that the phenomenon persists irrespective of whether—and by how much—nominal incomes are adjusted. In comparison to this alternative measure, our approach has a key advantage: it links fiscal drag and benefit erosion directly to changes in tax revenues and public spending as resulting in actual data. If prices rise but nominal incomes do not, the tax base and revenues remain unchanged; under our definition, fiscal drag is zero, whereas an inflation-based measure would show a positive value not reflected in official data. Our approach allows us to explain how

personal income tax parameters. Several countries (Belgium, Germany, Spain, France, Ireland, Lithuania, Luxembourg, Latvia, Malta, Portugal, Slovenia) adopted discretionary indexation, while others—including Italy, Cyprus, Estonia, Greece, and Hungary—did not index at all (see Table A.1 in García-Miralles et al. (2025)). Outside the EU, some countries (including the US) adjust tax thresholds automatically, but most do not or do so irregularly (Beer, Griffiths, and Klemm (2023)). In Italy, automatic annual indexation to inflation applies only to income parameters that determine social security contributions and certain welfare benefits.

[3]Fiscal drag in the personal income tax does not require nominal adjustments to push pre-tax income into a higher tax bracket. Even without such a jump, an increase in the portion of income falling within the highest bracket applicable to the taxpayer is sufficient to raise the average tax rate and generate fiscal drag.

fiscal drag contributes to disposable income changes as recorded in national accounts data—something alternative measures cannot achieve.

Methodologically, we employ BIMic, a static microsimulation model of the Italian tax-benefit system, based on 2022 survey data on household income and wealth. We decompose the variation in individual disposable income over 2022–2025 into the four elements mentioned above. In our endeavor, we are confronted with typical microsimulation modeling issues, such as uprating monetary amounts reported in the survey to mimic income dynamics after 2022—the reference year of the survey. This uprating should reflect changes in pre-tax-and-transfer incomes, which for employees incorporate both price effects (wages) and quantity effects (labor supply). Ideally, identifying the contribution of pre-tax-and-transfer income dynamics with maximum precision would require detailed information on taxable income evolution, accounting for changes in labor supply at both extensive and intensive margins. However, in our static framework we cannot replicate labor market flows (extensive margin) or changes in hours worked (intensive margin) during the period. Therefore, to align with national accounts dynamics for 2022–2025, we impute—by sector of activity—the *total* growth of wages and salaries observed in national accounts data to individuals employed in the 2022 survey. This growth captures both wage rate changes and employment dynamics. Such uprating strategy is common in the microsimulation literature, as it enables replication of the public budget cost of tax-benefit components for each simulated year. In our context, this uprating system also allows to account for the contribution of 'real growth'—which may stem from higher employment or productivity—to changes in disposable income. However, estimates of this contribution may be downward biased within a progressive tax-benefit system because the additional growth is imputed to individuals already employed, rather than to newly employed persons. As we want to estimate also the contribution of fiscal drag to changes in disposable income, we

further refine this typical strategy by identifying the portion of individual income growth attributable to inflation adjustment. This allows us to estimate fiscal drag (and benefit erosion) consistently with our measurement strategy while accounting for disposable income evolution.

Although we simulate income at the individual level, we present results at the household level,[4] since many policies target households and economies of scale in household consumption matter. Incidentally, this choice aligns with evidence from national accounts data, where purchasing power dynamics are calculated for the household sector as a whole.

We find that, on average, household disposable income growth between 2022 and 2025 eventually matched cumulative inflation. Individual gross incomes did not fully adjust to prices, and fiscal drag and benefit erosion offset part of the adjustment. However, real income growth—driven by strong employment—and policy changes supported household disposable incomes. Distributional effects remain: over the period, disposable income variation exceeded inflation for households in the three middle quintile groups of the equivalent disposable income distribution. It was broadly in line with inflation in the bottom quintile. It was below in the top quintile group. Households with pensions as their main income source suffered, on average, a loss in purchasing power, like those relying most on self-employment; on the contrary households whose main income source is constituted by wages and salaries experienced an increase in real disposable income. Overall, what the tax-benefit system absorbs through fiscal drag and benefit erosion is outweighed by what it provides through policy changes. This is true especially for households in the three middle quintile groups and for those most reliant on wages and salaries.

Discretionary policy changes to the tax-benefit system are often assessed against an

[4]We use the 'OECD-Modified' equivalence scale to account for household size and composition.

alternative policy that provides automatic indexation of system parameters to inflation. In the same vein, for purely illustrative purposes we study a simple counterfactual exercise in which we replace the discretionary measures introduced during the 2022–2025 period with a single policy consisting of automatic indexation of the 2021 tax-benefit system parameters to inflation, measured by current changes in HICP. Our results suggest that, at least in the context of the recent Italian inflation surge, the two strategies would bring similar results in terms of average dynamics of disposable income and budgetary costs; the bottom and the top quintile groups would have been slightly better off with automatic indexation.

Our results cannot be interpreted as a welfare assessment of recent policy developments in Italy. For example, regaining in 2025 the same—or slightly higher—purchasing power as in 2021 does not offset the cumulative losses incurred in the interim. Moreover, as factors contributing to the recovery may have opposing effects over individual utility, our framework can not assess whether at the end of the period one is better or worse off than at the beginning.

This paper contributes to the extensive literature on fiscal drag in three ways. First, we develop a framework that measures not only fiscal drag but also benefit erosion—a dimension largely overlooked, with the notable exception of Paulus, Sutherland, and Tasseva (2020), who, however, do not disentangle the two effects as we do. Second, differently from studies on fiscal drag during the latest inflationary crisis, we provide a decomposition of changes in household disposable income that isolates the role of each key drivers (fiscal drag and benefit erosion are among these but, as we show, not the most significant ones). Third, we account for distributional issues related to the factors shaping household disposable income variations, exploiting the full potential of a microsimulation framework.

The rest of the paper is organized as follows. Section 2 surveys the fiscal drag

literature, highlighting similarities and differences between our approach and existing methodologies. Section 3 defines fiscal drag and benefit erosion and introduces the methodology used in Section 4. Section 5 describes the data used in the simulations. Section 6 presents the results. Section 7 reports the counterfactual exercise on system indexation. Finally, Section 8 concludes.

2 Literature review

The literature on fiscal drag is extensive, with early contributions dating back to the 1970s. Research generally falls into two strands: one with a macro perspective examining its impact on tax revenues; the other with a more micro and distributional focus. Concerning the former, which is less relevant for us, one should at least mention Heinemann (2001). This study aims to assess whether the slowdown in inflation since the late 1990s would have had fiscal consequences for government budgets in developed countries. Using a panel-data model for OECD countries (1965–1996), it classifies total and specific types of taxes by country according to two concepts of fiscal drag (or anti-drag): nominal fiscal drag, which occurs when rising nominal incomes push taxpayers into higher tax brackets, and real fiscal drag, which is independent of inflation and arises when "the tax-income ratio reacts positively to an increasing real income." As acknowledged by the author, this second concept is essentially a synonym for progressivity.[5] Consequently, this distinction is irrelevant for the scope of our work.

Turning to the micro and distributional literature, the development of tax-benefit microsimulation models has played a crucial role. From our perspective, contributions

[5]In this work, real fiscal drag is assessed only as a benchmark for the secular trend in tax revenue dynamics in developed countries where Wagner's Law holds. Over a three-decade horizon, isolating this trend—driven by the income elasticity of public good demand, greater than one according to Wagner's Law—is essential to accurately evaluate the impact of inflation moderation on tax revenues, which ultimately depends on nominal fiscal drag.

within this strand can be broadly classified into two groups. The first investigates the effect of fiscal drag on key tax system characteristics, such as progressivity and redistributive capacity, *at a given point in time*. The second assesses its impact on *the evolution over time* of individual or household tax burdens. Although some studies combine both research lines, it is useful to maintain this distinction, as works in the second group—whose objectives are closer to ours—tend to adopt a measurement strategy broadly aligned with our approach.

Within the first group, the most influential work is arguably Immervoll (2005). Applying a multi-country microsimulation model (EUROMOD) to the 1998 tax-benefit systems in UK, Germany, and the Netherlands, the paper shows that even under low inflation, the effects of fiscal drag can be substantial, reducing tax progressivity and increasing tax revenues. Due to fiscal drag the system's equalizing capacity—driven by the combined effects of progressivity and average tax rates—appears to increase, as the latter effect dominates the former. In other words, inflation, through fiscal drag, leads to lower and slightly more equal household disposable incomes. Finally, the paper shows that existing indexing regimes in the Netherlands and the UK successfully prevent large changes in tax burdens. Immervoll (2005) compares the *pre- and post-inflation* distribution of individual tax burdens, using both hypothetical and actual inflation rates. However, this does not imply that the author considers fiscal drag to stem directly from inflation; rather, he *assumes* in his simulations that all incomes change in line with inflation. Even if this contribution belongs to the first group of works, the force *considered* behind fiscal drag is not inflation *per se* but the nominal income adjustment to inflation. The author does not justify this assumption, but this may reflect the need to compare countries with different arrangements for aligning nominal incomes to inflation—a potential confounding factor. In any case, many subsequent studies adopt the same inflation-based strategy, such as Levy, Nogueira, de Siqueira,

Immervoll, and O'Donoghue (2010) for Brazil and Zhu (2016) for Germany.

The second group of contributions in the microsimulation strand addresses a different question: what is the actual effect of fiscal drag on the evolution over time of individual or household disposable income? To answer this question it is necessary to pin down: (i) the precise source of fiscal drag; and (ii) tax-benefit policies that mitigate it, either directly (e.g., indexing PIT brackets) or indirectly (e.g., discretionary PIT changes). Notably, even Immervoll (2005) discusses how indexing policies in the UK and the Netherlands helped attenuate fiscal drag.

Gastaldi, Liberati, and Rapallini (2008) decompose changes in tax revenues in Italy between 1995 and 2000, focusing on the role of tax changes versus non-tax factors (including fiscal drag among the latter). Using a microsimulation approach, they compare disposable income inequality before and after tax policy changes (1995 versus 2000). They show that tax rule changes contributed an additional one-fourth to the total change in redistributive impact; contrary to our results, they find that this effect was outweighed by fiscal drag. The difference can partly be explained by the periods analyzed and partly by methodological choices: they use two distinct microsimulation models (for 1995 and 2000) to compare pre- and post-tax distributions, whereas our approach relies on a single model (BIMic) and survey data for one year (2022) to perform a multi-year decomposition (see Section 5). This implies that, while fiscal drag in their work also stems from nominal income changes rather than inflation *per se*, as in our approach, their effective measure of the phenomenon appears to combine two of our contributing factors to the evolution of disposable income, namely fiscal drag and the real growth effect (see Section 4).

A work explicitly aiming to estimate the *actual* fiscal drag is Paulus, Sutherland, and Tasseva (2020). They assess tax-benefit policy developments in 2001–2011 across seven EU countries (including Italy) using EUROMOD. The analysis distinguishes *structural*

effects—changes in system design (e.g., new benefits)—from *indexation effects*, which stem from indexing monetary parameters such as tax brackets or income thresholds, whether automatic or discretionary. Their focus is on the impact of these developments on household disposable income, inequality, and poverty.[6] Notice that what they call the indexation effect closely resembles our fiscal drag effect: it derives from comparing actual disposable income (year 2007 in their analysis) with a counterfactual based on 2001 (or 2011) tax-benefit rules indexed forward (or backward). As for the indexation parameter, the authors test both the CPI and an index summarizing nominal income growth—the latter corresponding to our measurement strategy for fiscal drag. For Italy, tax-benefit changes during 2001–2011 reduced mean household disposable income, with structural changes contributing far more than indexation. When explaining differences between their results and ours, note that although this work—like ours—considers both fiscal drag and benefit erosion and, at least with the second type of indexation, defines them analogously, it considers pensions' yearly revaluation as an indexation policy, whereas in our exercise it is included in nominal income adjustment (see Section 4).

Several recent works in the second sub-group studied the consequences of the inflationary shock of 2022–2023. Balladares and García-Miralles (2024) for Spain and García-Miralles et al. (2025) for Euro Area countries compare actual tax revenues after the shock with counterfactual revenues computed using (i) post-shock incomes and (ii) pre-shock tax-benefit rules with parameters indexed according to an indexation rate. Results are presented using different indexation rates, including CPI and nominal income growth. However, both papers acknowledge that the rate that "would fully offset fiscal drag" is the latter, confirming our measurement strategy as the natural choice for estimating *actual* fiscal drag.

To the best of our knowledge, Sanz Sanz and Arrazola Vacas (2025) is the only

[6]The emphasis on poverty reflects EU priorities in the period studied.

recent study challenging the view that nominal income growth is a necessary condition for fiscal drag. They distinguish between dynamic fiscal drag—driven by changes in nominal taxable income and aligned with our definition—and static fiscal drag, which stems from the erosion of tax brackets and income thresholds in real terms, regardless of nominal income dynamics. For Spain, they estimate that in 2022 the latter far exceeded the former (1.1 billion euros vs 74 million euros). Notice that their analysis is limited to one single year. In our approach, as we are interested in the evolution over time of disposable incomes, their measure of static fiscal drag would have no meaning. Indeed, it does not generate additional tax revenues, unlike dynamic fiscal drag: no extra resources are effectively transferred from households to the public budget due to the real value decrease of the tax income brackets, and there is nothing to redistribute. Any restitution would therefore require offsetting other discretionary measures or increasing deficit and debt, effectively transferring resources from future to current generations.

In the recent Italian debate, following a similar measurement approach, UPB (2025)[7] and Leonardi and Rizzo (2025) argue that counterfactual scenarios for estimating fiscal drag should index tax-benefit parameters using inflation rates. This approach produces estimates of fiscal drag for the recent inflationary episode that are larger than ours. However, as the literature reviewed in this section makes clear, using inflation-based indexation to calculate *actual* fiscal drag results in an overestimation of the phenomenon. This conclusion is also shared by Galli and Ferraro (2025), whose estimates follow our definition.

[7]This analysis calculates fiscal drag as the difference between the actual tax burden and a counterfactual tax burden resulting from indexing tax-benefit parameters to an inflation rate of 2%, a level of inflation that is considered normal.

3 Defining Fiscal Drag and Benefit Erosion

Fiscal drag and benefit erosion are potential side effects of a progressive tax-benefit system. Both occur because key parameters of progressivity—such as PIT income brackets or benefit eligibility thresholds—are set in nominal terms. When these parameters remain fixed, fiscal drag and benefit erosion may emerge in an inflationary environment. To measure their impact, the first step is to identify the source of the phenomenon. The same reasoning applies to both fiscal drag and benefit erosion; therefore, in what follows, 'fiscal drag' refers to both.

In our view, fiscal drag stems from inflation-driven increases in nominal incomes. When incomes adjust to inflation and the PIT schedule is progressive but its brackets are not indexed—or are adjusted less than incomes—taxpayers pay a higher share of their income in taxes. This further erodes purchasing power, adding to the loss already caused by inflation.

Put differently, when earnings (e.g., wages, pensions) rise in response to inflation, a non-indexed progressive PIT schedule pushes more income into higher marginal rates. Part of the inflation adjustment is absorbed by higher taxes. Crucially for our measurement strategy, disposable income grows more slowly than gross income, creating an implicit transfer from taxpayers to the government. In this sense, fiscal drag acts as a 'stealth tax'.

To summarize, in this work fiscal drag occurs when: (i) the PIT is progressive and its income brackets are fixed; and (ii) nominal income—the PIT tax base—adjusts (fully or partially) to inflation. Nominal income increases not due to inflation (e.g., due to promotions, or higher labor supply, or workers' share of productivity gains), in our work labeled 'real growth effect', do not generate fiscal drag. Similarly, if inflation is positive but nominal incomes fail to adjust fully, the unadjusted portion of inflation

does not contribute to fiscal drag. In that case, the loss of purchasing power comes from wage-setting mechanisms, not taxation.[8]

A simple example illustrates our definition. Suppose an employee's nominal income rises by 5% between year $t-1$ and t: 3% as an inflation adjustment and 2% due to higher labour supply, to a promotion or to workers' share of productivity gains. If PIT parameters remain unchanged, the tax burden will increase by more than 5% because of progressivity. However, only the portion linked to the 3% inflation adjustment constitutes fiscal drag and should, in principle, be restituted by the Government. By contrast, the extra tax burden from the remaining 2% should continue to follow the normal rules of progressivity.

A similar mechanism applies to benefits. If means-testing thresholds are not indexed to inflation-driven income adjustments, benefits shrink (benefit erosion), reducing real disposable income. As with fiscal drag, this shifts purchasing power from households to the government.

According to our definition, a necessary condition for the occurrence of fiscal drag (or benefit erosion) in a progressive tax-benefit system with fixed thresholds is a positive inflation-driven component of the nominal income change: if this component is zero, fiscal drag cannot occur, even under positive inflation. In other words, we rule out the possibility that fiscal drag arises solely from the real erosion of tax brackets, as in the static fiscal drag proposed by Sanz Sanz and Arrazola Vacas (2025) or in UPB (2025). The rationale is straightforward: without changes in taxable income, tax revenues do not vary—a prerequisite for fiscal drag. What proponents of the alternative definition measure is not reflected in official tax revenue dynamics, making such an approach

[8]Unlike Sanz Sanz and Arrazola Vacas (2025), who identify a static component of fiscal drag from inflationary erosion of fixed brackets even when incomes do not change, we do not consider this fiscal drag. As explained in Section 1, our definition captures a component of the actual variation in government revenues, which move only if tax bases change. Measuring fiscal drag using the overall inflation rate would lack such an empirical counterpart.

unsuitable for explaining changes in purchasing power over time as recorded in national accounts.

In conclusion, assessing fiscal drag at the individual level requires identifying nominal income growth due to inflation. We return to this issue in Section 5.

4 Methodology: How Fiscal Drag and Benefit Erosion Affect Disposable Income Dynamics

To discuss our strategy for quantifying the contribution of fiscal drag and benefit erosion to disposable income dynamics, we start by decomposing the growth rate of nominal gross income (i.e., income before taxes and transfers) into two components. The first, denoted by $\omega_{i,t}$, represents the rate at which the nominal income of individual i adjusts to inflation (hereafter, *the rate of nominal adjustment*). Alternatively, and without altering the interpretation of our results, $\omega_{i,t}$ can be viewed as the increase in nominal incomes for a given labour supply or a given worker's share of productivity gains. The second component, denoted by $g_{i,t}$, is the residual share of total growth, which we term *the rate of real growth*: regardless of the interpretation of $\omega_{i,t}$, $g_{i,t}$ captures the part of individual income growth driven by changes in labor supply or workers' share of productivity gains.

This decomposition is essential for identifying the source of fiscal drag and benefit erosion, which—according to Section 3—is linked to $\omega_{i,t}$. In our framework, this term captures the variation in taxable income driven by nominal inflation adjustment of incomes (see Section 5). Conversely, $g_{i,t}$ reflects income growth from other sources, such as promotions, or increased labor supply (e.g., more hours worked for employees) or higher share of productivity. It is worth noting that in Italy, pension incomes are revalued annually only for inflation and are not tied to any growth dynamics in the

economy (for pensions, $g_{i,t} = 0$).

Therefore for a generic individual i we can write:

$$Y_{i,t}^G = Y_{i,t-1}^G(1 + \omega_{i,t} + g_{i,t}) \tag{1}$$

The disposable income of this generic individual, $Y_{i,t}^D$, derives from gross income after deducting social security contributions ($SSC_{i,t}$) and taxes ($T_{i,t}$)[9] and adding social benefits ($B_{i,t}$):

$$Y_{i,t}^D = f_t(Y_{i,t}^G, Y_{i,t-k}^G) \equiv Y_{i,t}^G - SSC_{i,t}(Y_{i,t}^G) - T_{i,t}(Y_{i,t}^G; SSC_{i,t}(Y_{i,t}^G)) + B_{i,t}(Y_{i,t}^G, Y_{i,t-k}^G) \tag{2}$$

where $f_t(\cdot)$ represents the time t tax-benefit system that transforms gross into disposable income. Notice that not only $Y_{i,t}^G$ but also $Y_{i,t-k}^G$ appears as argument of $f_t(\cdot)$. This issue arises because some benefits are means-tested using indicators based on income and asset information from up to k years earlier. This is particularly evident in Italy, where many benefits are assessed through the *Indicatore della Situazione Economica Equivalente* (ISEE). ISEE combines income data reported to tax authorities—typically referring to two years prior—with information on financial wealth and real estate. Several key benefits in the Italian welfare system, such as the *Assegno Unico Universale* (AUU), a child-related transfer, and the *Reddito di Cittadinanza* (RDC), replaced in 2024 by the *Assegno di Inclusione* (ADI), use ISEE as their means-testing indicator.

Table 1 summarizes the potential sources of fiscal drag and benefit erosion across the main components of the Italian tax-benefit system, along with the presence or absence of indexation provisions that may mitigate their effects. Overall, some form of indexation—typically based on the previous year's inflation—applies only to social

[9]The amount of PIT owed by each taxpayer, in turn, depends on the amount of social security contributions paid as they are deductible from total income, thereby reducing the taxable base on which the tax is calculated.

Table 1: Source of fiscal drag and benefit erosion in the Italian tax-benefit system

Tax-benefit system component	**Relevant income**	**Potential source of fiscal drag / benefit erosion**	**Indexation**
Social security contributions (SSC)	Y_t^G	income brackets	to π_{t-1}
Personal income tax (PIT):			
gross tax	$Y_t^G - SSC_t$	income brackets and allowances	none
tax credits, income specific	$Y_t^G - SSC_t$	income limits and credits	none
family tax credits	$Y_t^G - SSC_t$	income limits and credits	none
tax expenditures	various	many thresholds and amounts	none
local surtax	$Y_t^G - SSC_t$	income brackets and allowances	none
Flat-rate tax replacing PIT for self-employed (*regime forfettario*)	revenues	revenues limits	none
Other taxes (e.g., on real and on financial assets)	various	none	none
In-work benefit (*bonus Irpef*)	$Y_t^G - SSC_t$	income limits and benefit amount	none
Benefits for children (*Assegno Unico Universale*)	Y_{t-2}^G (*Isee*)	income limits and benefit amounts	to π_{t-1}
(Old) Benefits for family dependents (*Assegno nucleo familiare)*	$Y_t^G - SSC_t$	income limits and benefit amount	to π_{t-1} only the limits, not the amount
Anti-poverty benefits (*RdC/ADI; bonus bollette*)	Y_{t-2}^G (*Isee*)	income limits and benefit amounts	none

Notes: π_{t-1} denotes the previous year's consumer price index for blue- and white-collar worker households.

security contributions, child benefits (AUU), and the now residual family-dependent benefits (*Assegno per il Nucleo Familiare*, ANF).

We would like to single out the different components of the households' disposable income growth. In particular, we want to focus on the effects of fiscal drag (and benefit erosion) on the variation of household disposable income between $t-1$ and t, while also accounting for changes to the tax-benefit system, i.e changes to $f_t()$.

To perform our decomposition, let's start by defining three *counterfactual* disposable incomes:

1. $(1+\omega_{i,t})f_{t-1}(Y_{i,t-1}^G)$, i.e. the disposable income at time t under three conditions: i) gross incomes grow only for nominal adjustment ($g_{i,t}=0$); ii) the tax-benefit system is unchanged ($f_t(\cdot)=f_{t-1}(\cdot)$); iii) there is no fiscal drag or benefit erosion, meaning that the tax-benefit system is either not progressive or, if progressive, it is perfectly indexed to the nominal adjustment of gross incomes. These three conditions imply that the disposable at time t equals the disposable income at time $t-1$ revalued at $\omega_{i,t}$.

2. $f_{t-1}((1+\omega_{i,t})Y^G_{i,t-1})$, i.e the disposable income at time t under the same conditions i) and ii) defined above, but without excluding fiscal drag.

3. $f_{t-1}(Y^G_{i,t})$, i.e. the disposable income resulting from applying time $t-1$ tax-benefit system to the current gross income $Y^G_{i,t}$.

Note that all these counterfactual disposable incomes can be computed within our microsimulation framework. Adding and subtracting these three counterfactual disposable incomes from the right-hand side of (2) and rearranging yields:

$$\begin{aligned} Y^D_{i,t} - Y^D_{i,t-1} = & \underbrace{\omega_{i,t} f_{t-1}(Y^G_{i,t-1})}_{NA_{i,t}} - \underbrace{[(1+\omega_{i,t}) f_{t-1}(Y^G_{i,t-1}) - f_{t-1}((1+\omega_{i,t})Y^G_{i,t-1})]}_{FD_{i,t}} \\ & + \underbrace{f_{t-1}(Y^G_{i,t}) - f_{t-1}((1+\omega_{i,t})Y^G_{i,t-1})}_{RG_{i,t}} + \underbrace{f_t(Y^G_{i,t}) - f_{t-1}(Y^G_{i,t})}_{PE_{i,t}} \end{aligned} \tag{3}$$

where $NA_{i,t}$ stands for the effect on the variation of disposable income due to the nominal adjustment of gross income (or to the increase in nominal incomes for a given labour supply, under the alternative interpretation of $\omega_{i,t}$), $FD_{i,t}$ captures the effect of fiscal drag and benefit erosion, $RG_{i,t}$ represents the effect of the 'real' growth of gross incomes, and $PE_{i,t}$ is the effect of changes to the tax-benefit system.

Notice that $NA_{i,t}$, $FD_{i,t}$ and $RG_{i,t}$ are calculated assuming the same tax-benefit system as at time $t-1$. The effect of changing rules is captured by $PE_{i,t}$, which is calculated using time t gross income. In another plausible decomposition one can calculate $NA_{i,t}$, $FD_{i,t}$ and $RG_{i,t}$ by assuming time t tax-benefit rules and $PE_{i,t}$ by using time $t-1$ gross income:

$$\begin{aligned} Y^D_{i,t} - Y^D_{i,t-1} = & \underbrace{\omega_{i,t} f_t(Y^G_{i,t-1})}_{NA_{i,t}} - \underbrace{[(1+\omega_{i,t}) f_t(Y^G_{i,t-1}) - f_t((1+\omega_{i,t})Y^G_{i,t-1})]}_{FD_{i,t}} \\ & + \underbrace{f_t(Y^G_{i,t}) - f_t((1+\omega_{i,t})Y^G_{i,t-1})}_{RG_{i,t}} + \underbrace{f_t(Y^G_{i,t-1}) - f_{t-1}(Y^G_{i,t-1})}_{PE_{i,t}} \end{aligned} \tag{4}$$

The results do not change significantly.[10]

To illustrate the four components driving changes in disposable income, we use a graphical representation. Figures 1–4 show gross and disposable incomes for years $t-1$ and t, together with the previously discussed counterfactual disposable incomes.[11]

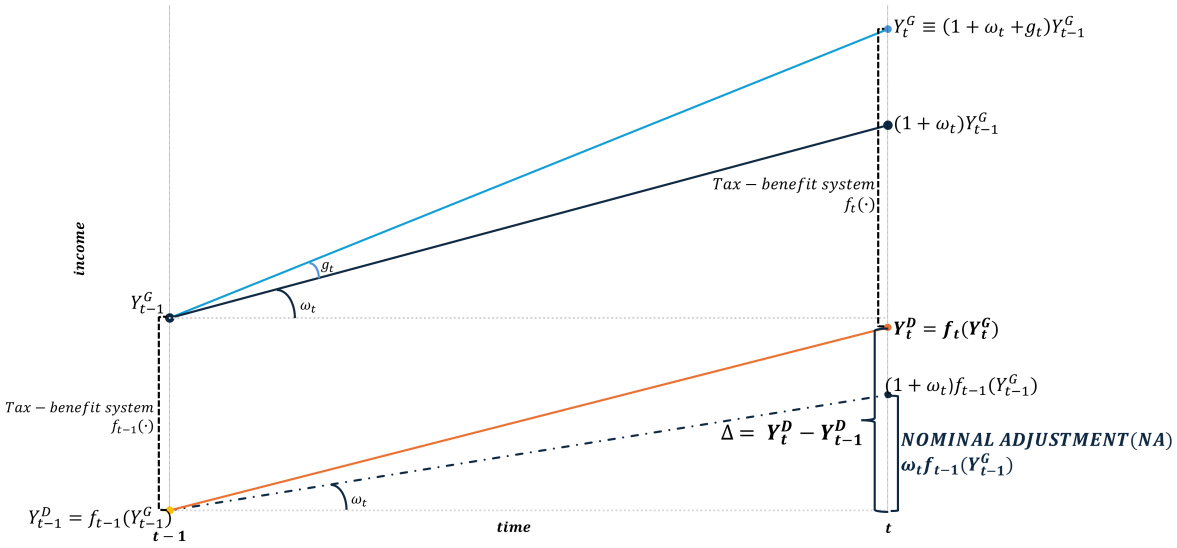


Figure 1

More specifically, Figure 1 shows gross income at time $t-1$, $Y_{i,t-1}^G$, which is transformed into disposable income, $Y_{i,t-1}^D$, by the tax-benefit system of that year, $f_{t-1}(\cdot)$. At time t, gross income increases due to adjustment to inflation, represented by $\omega_{i,t}$, and 'real' growth, $g_{i,t}$. The final disposable income is assumed to be $Y_{i,t}^D = f_t(Y_{i,t}^G)$. Our aim is to explain the variation of disposable income between the two years, $\Delta_i = Y_{i,t}^D - Y_{i,t-1}^D$. The first component of this difference is NA_t, i.e. the variation in disposable income in the absence of real growth (i.e. $g_{i,t}=0$), of fiscal drag and benefit erosion (no progressivity or full indexation) and of changes to the tax-benefit system ($f_{t-1}(\cdot) = f_t(\cdot)$). This equals $\omega_{i,t}Y_{i,t-1}^D \equiv (1+\omega_{i,t})Y_{i,t-1}^D - Y_{i,t-1}^D$.

[10]Tables and graphs as those reported in Section 6 are available for this alternative decomposition upon request.

[11]For clarity, figures omit the subscript i for individual-level variables.

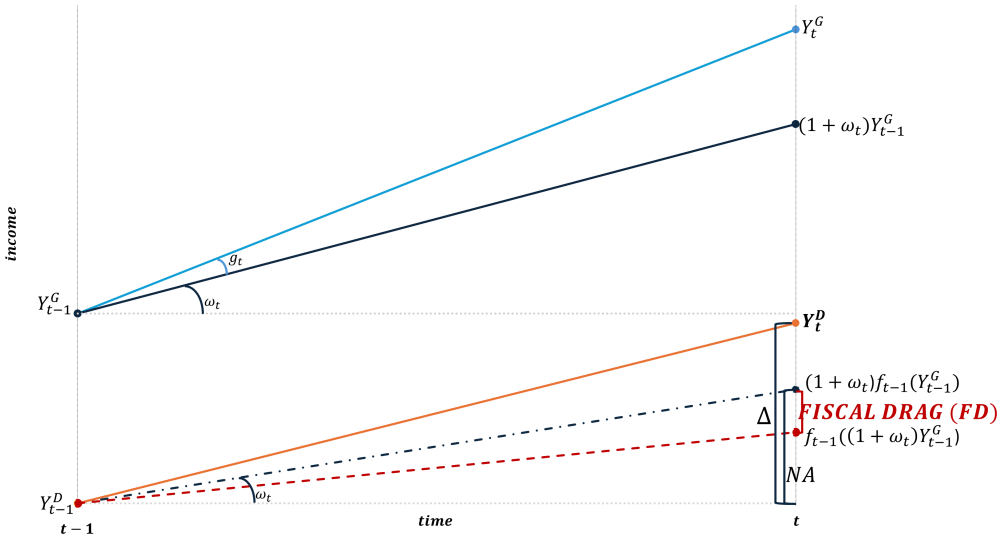


Figure 2

In Figure 2, we introduce the effect of fiscal drag, which offsets the impact of nominal adjustments on disposable income. Fiscal drag reduces the gain from nominal income growth because higher gross income shifts taxpayers into higher brackets, increasing the average tax rate.

Figure 3 illustrates the impact of 'real' gross income growth on disposable income. The tax-benefit rules remain those of period $t-1$ (i.e., the system is still $f_{t-1}(\cdot)$), but we now consider the differential effect arising from using total gross income $Y_{i,t}^G$ instead of the income adjusted only for nominal growth $(1+\omega_{i,t})Y_{i,t-1}^G$.

Finally, Figure 4 adds the last component of our decomposition: the policy effect, which measures the change in disposable income attributable to reforms in the tax-benefit system. In this example, the policy effect is assumed to be positive.

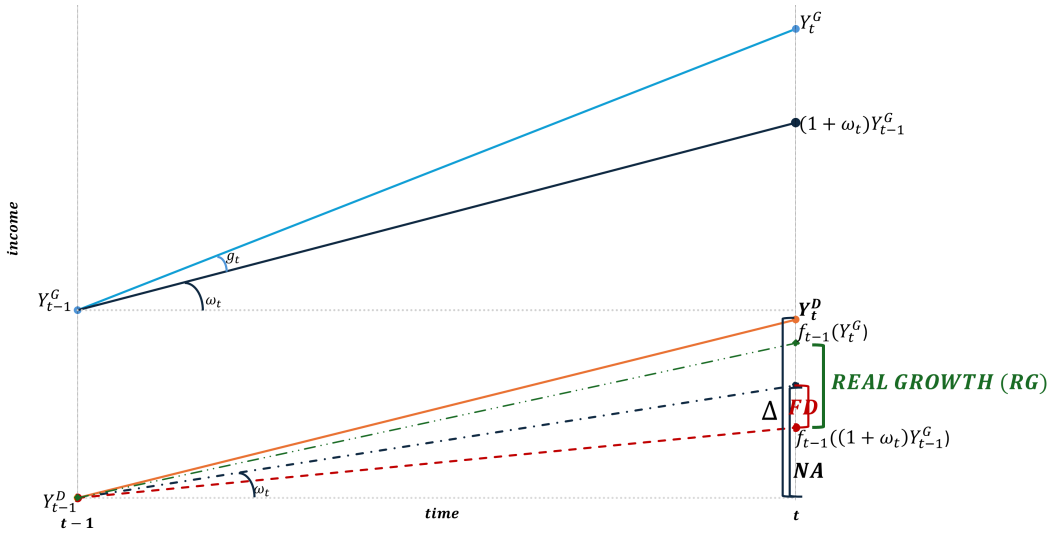


Figure 3

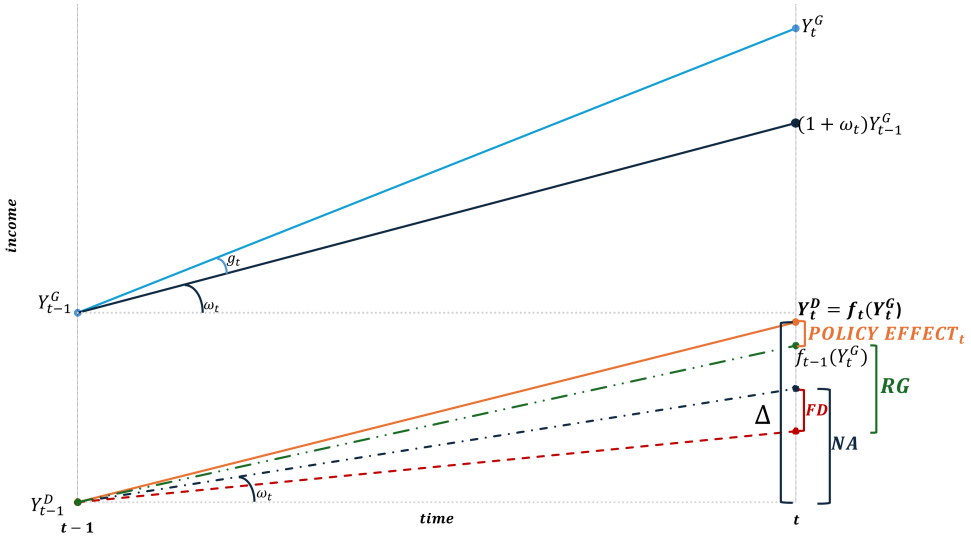


Figure 4

So far, we have focused on the overall effect of fiscal drag and benefit erosion on disposable income dynamics. We now aim to measure these two effects separately and, where possible, identify the contribution of specific components of the tax-benefit system (such as PIT or AUU).

As defined in Equation (2), disposable income is the algebraic sum of gross income, social contributions, taxes, and social benefits. Within the microsimulation framework, each component is modeled separately, and all interactions between them are fully captured. To isolate the contribution of each component to fiscal drag and benefit erosion, the key is to apply the appropriate rate of nominal adjustment.

Individuals receive heterogeneous sources of gross income—such as labor earnings, pensions, and rental or capital income—each responding differently to inflation. The model explicitly accounts for this heterogeneity, which in turn affects the evolution of tax-benefit components. For example, when constructing the counterfactual disposable income $(1+\omega_{i,t})f_{t-1}(Y^G_{i,t-1})$, the counterfactual PIT at time t is obtained by revaluing its level at $t-1$ using a nominal adjustment factor that reflects the specific composition of each individual's taxable income. Similarly, counterfactual social security contributions are revalued using the adjustment rate for labor earnings only.

Social benefits pose additional complexity because eligibility rules may depend on past income, as in Italy where means-testing uses ISEE, or on current gross income. Nominal adjustment rates for counterfactual benefits must reflect these differences. In our Italian case, we account for the fact that ISEE is based on income from two years earlier.[12]

In summary, counterfactual disposable income is obtained by aggregating counterfactual components, not by applying a uniform inflation adjustment to the previous year's disposable income. The simplified expressions and figures presented earlier are illustrative only. In the actual simulation, nominal adjustments are applied at the level of each income component and each individual unit.

[12]For technical details on the Italian benefit system and how benefit erosion is formalized, see Appendix A.

5 Data

Our analysis relies on BIMic, the Bank of Italy Tax and Benefit Microsimulation model,[13] which, in its latest version, is based on a representative sample of Italian households from the 2022 wave of the Survey on Household Income and Wealth (SHIW). Since our goal is to explain the factors driving disposable income dynamics over 2022–2025, the process of uprating (and back-rating) gross incomes is crucial. As is standard in the microsimulation literature, this process imputes to each 2022 income component a growth rate derived from external sources. All gross incomes are uprated to 2025 and back-rated to 2019.[14] To replicate the variation in disposable

Table 2: The total uprating parameters $(\omega_{i,t} + g_{i,t})$

Type of income	**Data**	**Source**
Employment income*	Domestic wages and salaries by industry (Nace)	National accounts (Compensation of employees and its components by industry); Istat
Pensions	Indexation mechanism in force each year explicitly modelled based on official indexation parametes	
Self-employment income	'Consumer Households': shares of income transferred from "producer households" plus withdrawals from income of 'quasi-corporations'	National accounts; Istat
Industry and services turnover for self-employed workers	Industry and services turnover at current prices	Istat
Imputed rents	'Consumer Households': Gross operating surplus	National accounts; Istat
Rental income (also under the flat-rate tax regime 'cedolare secca')	Consumer price index for blue and white-collar worker households excluding tobacco	Istat
Free lance contracts	Nominal GDP	National accounts; Istat
Other types of income**	Nominal GDP	National accounts; Istat

(*) *Redundancy payments, mobility and collective dismissals payments, unemployment benefits are included.*
(**) *Includes capital income, property income, financial assets and liabilities, as well as other residual income and wealth components.*

[13] For a detailed description of the model and its main features, see Curci, Savegnago, and Cioffi (2017).

[14] Estimates start from 2021 onward. However, given the importance of ISEE for benefit means-testing—and considering that this indicator is based on income earned two years earlier—we need to go back to 2019 to estimate benefits in 2021, which are essential for determining disposable income in that year, our starting point.

income observed in national accounts, uprating (or back-rating) parameters must reflect not only price dynamics (e.g., wages) but also quantity changes (e.g., labor supply). In a microsimulation framework, these parameters ensure that the simulated tax-benefit elements match their actual cost for the public budget. This explains why the methodology is widely used in the literature.

The uprating parameters of gross incomes capturing both price and quantities dynamics ($\omega_{i,t} + g_{i,t}$ in equation (1)) derive from aggregate national accounts indicators (see Table 2 for details).

Our goal is not only to replicate disposable income dynamics but also to identify the drivers of these changes, with particular attention to fiscal drag and benefit erosion. To this end, we must isolate the share of individual income growth attributable to inflation adjustment—or, equivalently, the increase in nominal income for a given labor supply or a given worker's share of productivity gains—as this is the only component relevant for measuring fiscal drag. Consequently, we introduce an additional set of uprating parameters that capture solely this inflation-related component of nominal income growth. According to notation of equation (3), this set of parameters should identify $\omega_{i,t}$ separately.

Table 3: The rate of nominal adjustment parameters ($\omega_{i,t}$)

Type of income	**Data**	**Source**
Private employement income*	Hourly index of wages according to collective labour agreements for private employee by Nace sector and qualification	National labour contracts Enterprises and PA; Istat
Public employement income*	Wages according to collective labour agreements in Public administration by compartment and qualification	National labour contracts Enterprises and PA; Istat
Self-employment income	Corresponding values of Table 2 diminished by real GDP growth rate	National accounts; Istat
Industry and services turnover for self-employed workers	Industry and services turnover in nominal terms, excluding the volume component	Istat

(*)*Redundancy payments, mobility and collective dismissals payments, unemployment benefits are included.*
Other income components are assumed to be fully indexed to inflation; therefore, total uprating coincides with nominal uprating.

The sources of these parameters are reported in Table 3. For employees, we use as a proxy for the rate of nominal adjustment the hourly wage index based on collective

labor agreements. These agreements typically rely on expected inflation to determine contractual wage increases.[15] More specifically, we impute different rates by NACE sector and qualification for private employees, and by compartment and qualification for public employees.

To test the sensitivity of our results to this assumption, we replicated the analysis using wages per hour worked from national accounts instead of the hourly wage index based on collective labor agreements. This exercise, reported in Appendix B, is in principle inferior to our base exercise because the dynamics of wages and salaries in national accounts include also productivity-related payments that in our decomposition are accounted in $RG_{i,t}$; in any case, it yields results broadly consistent with the original ones.

For self-employment incomes, the nominal adjustment is approximated by the growth of the sum of two components, as recorded for 'consumer households' in the national accounts system: i) the shares of income transferred from 'producer households', and ii) withdrawals from income of 'quasi-corporations'. To isolate the inflationary component embedded in this nominal indicator, we deflate the resulting growth rate using the real GDP growth rate. In some cases, such as pensions, the total uprating reflects only inflation, in line with *de lege* indexation mechanisms that is precisely simulated in BIMic. Pension incomes are therefore uprated according to the indexation rules in force each year.

Rental income, scholarships, and alimony are uprated using a specific Consumer Price Index—the one produced by Istat for blue- and white-collar households, excluding tobacco—in line with legal provisions for their official adjustment. The remaining (very

[15] As documented by Fanfani (2025), nominal wage growth based on the hourly wage index from collective labor agreements is strongly correlated with past inflation and only weakly linked to sectoral productivity or unemployment dynamics. These findings support our choice to approximate the inflation adjustment of gross employment income using the trajectory of collectively bargained wages.

residual) income categories are uprated according to nominal GDP growth.[16]

To recap, individual nominal incomes—reported for 2022 in the survey used to construct the model—are uprated and back-rated using the data in Table 2. The nominal income adjustment component of disposable income variation ($NA_{i,t}$) is derived from Table 3, while the real-growth component ($RG_{i,t}$) corresponds to the difference between the figures in Table 2 and Table 3. It is important to note that this measurement strategy likely underestimates the real-growth component of disposable income variation. This is because we attribute the additional labor income generated by higher employment rates to individuals already employed; if this income were instead allocated to new employees, the resulting increase in disposable income would be larger, due to the progressivity of the tax-benefit system.

6 Results

6.1 The average effect

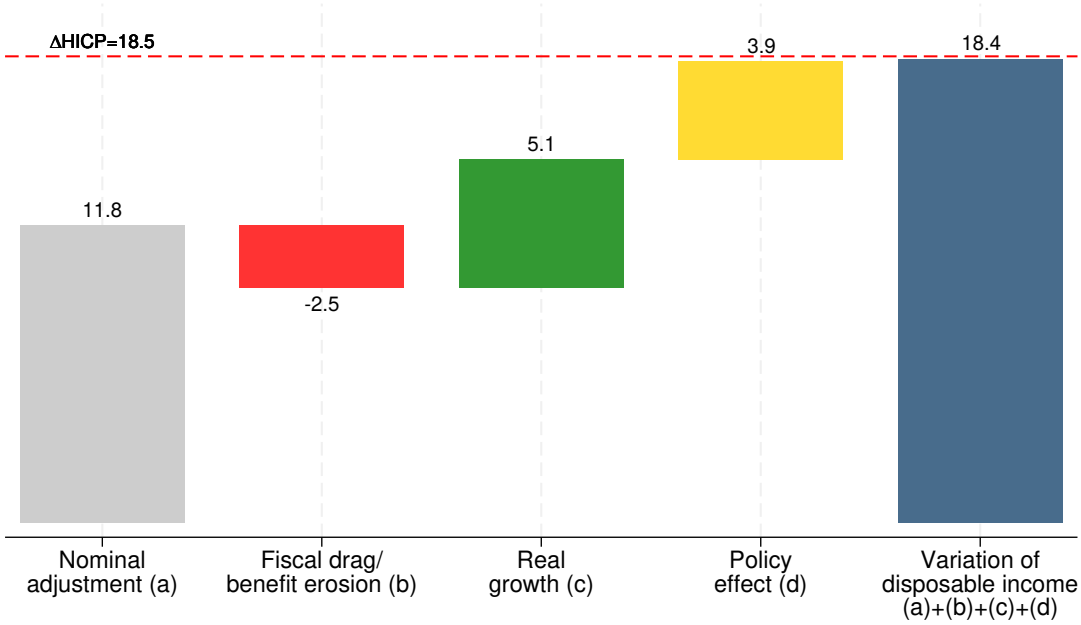
Figure 5 shows the decomposition described in Section 4, i.e., the components of the cumulative variation in Italian households' disposable income between 2021 and 2025.[17] For reference, the cumulative variation of the Harmonised Index of Consumer Prices (HICP) is also reported, indicating that prices rose by 18.5% over the period.[18] According to our estimates, the growth of household disposable income over 2022–2025 (18.4% on average), matched the cumulative inflation rate for the same period, implying that household purchasing power regained the 2021 level. According to Istat national accounts data, real household disposable income—a measure of purchasing power—had

[16] Although this does not perfectly capture the actual evolution of these incomes, it provides a reasonable approximation of their dynamics.

[17] All results for 2025 are provisional and based on the most recent available information.

[18] The forecast for 2025 HICP variation (1.8%) is based on figures reported in the Public Finance Planning Document for 2025 published by Italian Ministry of Economy and Finance (MEF).

already exceeded its 2021 level by 1.2% in 2024, the latest year for which data are available (Istat (2025a)). Preliminary data for 2025 suggest a further improvement in households' purchasing power (Istat (2026)). [19] [20]



Source: Authors' elaborations based on BIMic simulations; see the text for details.

Figure 5: Contributions to the cumulative variation in household disposable income between 2021 and 2025, in percentages

The fact that, in our simulation, the total variation in disposable income eventually matches cumulative inflation without exceeding it is consistent with these official data, given that our model likely underestimates the real-growth component of disposable income. As emphasized in Section 5, this occurs because we attribute the additional

[19] In the third quarter of 2025, households' gross disposable income in real terms increased by 1.8% compared with the previous quarter. Comparing the first three quarters of 2025 with the same period of the previous year, purchasing power rose by 2%.

[20] This evidence is not inconsistent with the dynamics of the wage index under national collective bargaining agreements, which in September 2025 was still 8.8% below its January 2021 level in real terms (Istat (2025b)). Although individual nominal incomes did not fully adjust to inflation, real income growth—mainly driven by sustained employment expansion—combined with changes to the tax-benefit system supported the evolution of household disposable incomes.

labor income generated by higher employment rates to individuals already employed; if this income were instead assigned to new employees, the resulting increase in disposable income would be larger, owing to the progressivity of the tax-benefit system.

Nominal adjustment accounts for nearly two-thirds of the overall variation in disposable income. Part of this effect is offset by fiscal drag and benefit erosion, which together reduce disposable income by about 2.5%, with fiscal drag being the main contributor. The remaining variation reflects the 'real' growth of gross incomes (5.1%), primarily driven by employment expansion, while changes to the tax-benefit system add 3.9%.

Factors Contributing to Disposable Income Variation	**2022**	**2023**	**2024**	**2025**	**Cum. 2022–25**
Adjustment of gross incomes to inflation (a)	12.8	34.1	27.9	19.6	94.5
Fiscal drag / Benefit erosion (b)	1.2	5.0	5.8	7.6	19.7
Fiscal drag	*1.2*	*5.9*	*5.8*	*5.0*	*17.9*
Benefit erosion	*-0.1*	*-0.9*	*0.0*	*2.7*	*1.7*
Real growth of gross incomes (c)	21.1	9.1	6.8	4.0	41.0
Policy effects (d)	23.5	-3.6	7.3	4.0	31.3
Targeted anti-inflation measures	*12.7*	*-10.5*	*-1.4*	*1.2*	*2.1*
Structural changes to the tax-benefit system	*8.0*	*1.3*	*4.5*	*14.4*	*28.2*
Temporary reduction of employee social security contributions	*2.7*	*5.6*	*4.2*	*-11.6*	*0.9*
Disposable income variation ΔY_t^D = (a) - (b) + (c) + (d)	56.2	34.6	36.3	20	147.1

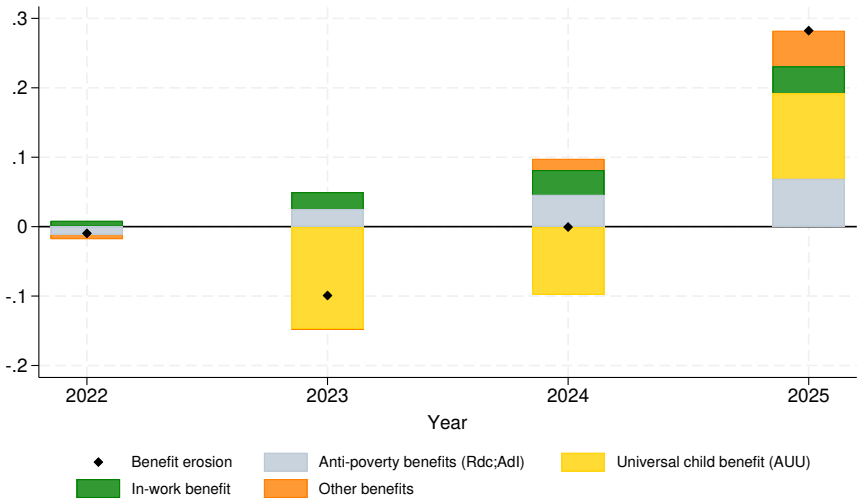
Source: *Authors' elaborations based on BIMic simulations; see the text for details.*
Notes: *When interpreting the figures on policy effects, please consider that temporary measures exert a negative impact on the contribution to disposable income variation in the year they are withdrawn.*

Table 4: Contributions to the variation in household disposable income, in billions of euros.

Table 4 allows us to examine year by year effects, expressed in billions. Policy effects in the table are grouped into three categories: (i) targeted anti-inflation measures, introduced mainly in 2022 on a temporary basis and withdrawn thereafter; (ii) structural reforms to the tax-benefit system, including PIT changes, the introduction of the AUU, and revisions to anti-poverty measures, which account for almost the entire cumulative policy contribution; (iii) temporary reductions in employee social security contributions, withdrawn in 2025 and replaced by a structural PIT cut

combined with a transfer to low-income employees. As we account for both fiscal drag and benefit erosion, in our calculation of the policy effect we include not only changes to the tax system but also all the interventions on the benefit system (see Appendix C for a summary of policy changes we simulate).

Fiscal drag and benefit erosion together amounted to nearly 20 billion euros over the four-year period, while the cumulative impact of policy changes is estimated at approximately 31 billion. Notice that the combined impact of fiscal drag and benefit erosion reached its peak in 2025. This was driven by the strong nominal adjustment in 2023, which had a significant lagged effect on benefit erosion (see Section 4), combined with the still sizable impact of fiscal drag. As expected, both fiscal drag and benefit erosion were limited in 2022, at the onset of the inflationary shock, since gross incomes began adjusting to inflation only from 2023. The contribution of 'real growth' declined over the period, which is unsurprising given Italy's overall economic performance, while nominal income adjustment to inflation peaked in 2023 and declined thereafter.



Source: Authors' elaborations based on BIMic simulations; see the text for details.
Notes: A negative (positive) sign implies a positive (negative) contribution to the variation in household disposable income.

Figure 6: Contributions of benefit erosion to the variation in household disposable income, in percentages.

Figure 6 illustrates the year-by-year dynamics of benefit erosion, highlighting the distinctive effects of nominal income adjustment within the Italian system. In 2022, benefit erosion was almost absent, reflecting previous income and inflation trends. In 2023, as nominal incomes began adjusting to inflation, positive contributions to erosion came from the in-work benefit (*bonus Irpef*)—which depends on current-year income—and from the lack of indexation of anti-poverty benefits. However, these effects were more than offset by the increase in AUU benefits, which that year were indexed to the very high previous year's inflation rate (8.1%). As a result, 2023 recorded a 'benefit anti-erosion' rather than erosion. A similar, though milder, pattern occurred in 2024. In 2025, the lagged effect on AUU materialized: inflation in 2024 was lower than in 2023, while nominal income adjustment in 2023—relevant for 2025 ISEE—had been substantial. For 2026, a similar effect in both sign and magnitude can reasonably be expected.

6.2 Distributional effects

So far, we have examined the average effects across all Italian households. Yet, the distributional impacts are equally important and deserve closer attention. We analyze, in particular, the distribution of households across two dimensions of heterogeneity: the equivalent household disposable income and the prevailing source of household income, focusing in particular on employment, self-employment and pension income.

Starting with the former, to better characterize income groups we consider, Table 5 reports, together with quintiles level, alternative definitions of disposable income valid for each quintile group.

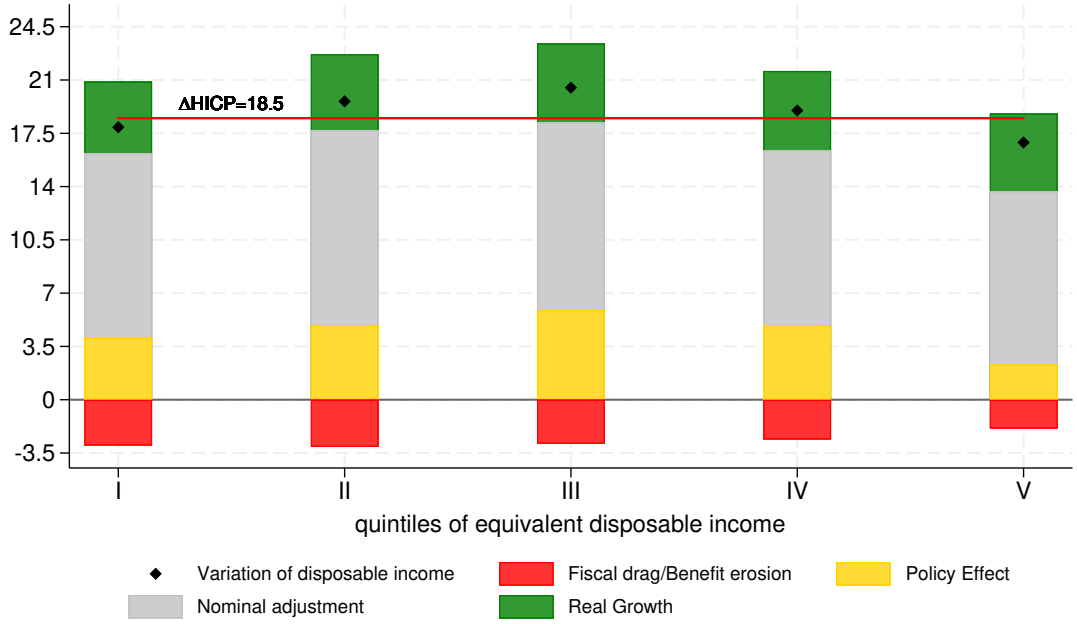
Figure 7 illustrates the distribution of changes in disposable income across households by quintile groups of equivalent disposable income.[21]

[21]Income quintile groups are based on household equivalent disposable income in 2022, the survey's

	Quintile level		Average within quintile group	
	Disposable income	Equivalent disposable income	Disposable income	Equivalent disposable income
I	47,851	10,632	12,074	7,546
II	60,089	14,783	20,628	12,594
III	69,615	20,241	27,591	17,558
IV	100,063	27,749	37,600	23,620
V	-	-	70,528	43,593

Source: *Authors' elaborations based on BIMic simulations; see the text for details.*

Table 5: Distribution of household equivalent disposable income by quintile groups



Source: Authors' elaborations based on BIMic simulations; see the text for details.
Note: Income quintile groups are defined according to household equivalent disposable income in 2022, the reference year for the survey. For the calculation of equivalent income, the 'OECD-Modified' scale is used, which assigns a weight of 1 to the household head, 0.5 to each additional member aged 14 or over, and 0.3 to each member under the age of 14.

Figure 7: 2022-2025 cumulative variation of household disposable income and contributions, in percentage points, by quintile groups of equivalent disposable income.

Between 2022 and 2025, disposable income growth was above inflation for the three middle quintiles groups (19.7% on average). It was broadly in line for the bottom quintile (18.0%). It fell slightly short for the top quintile group (16.9%). This evidence

reference year. Equivalent income is calculated using the 'OECD-Modified' scale, which assigns a weight of 1 to the household head, 0.5 to each additional member aged 14 or over, and 0.3 to each member under 14.

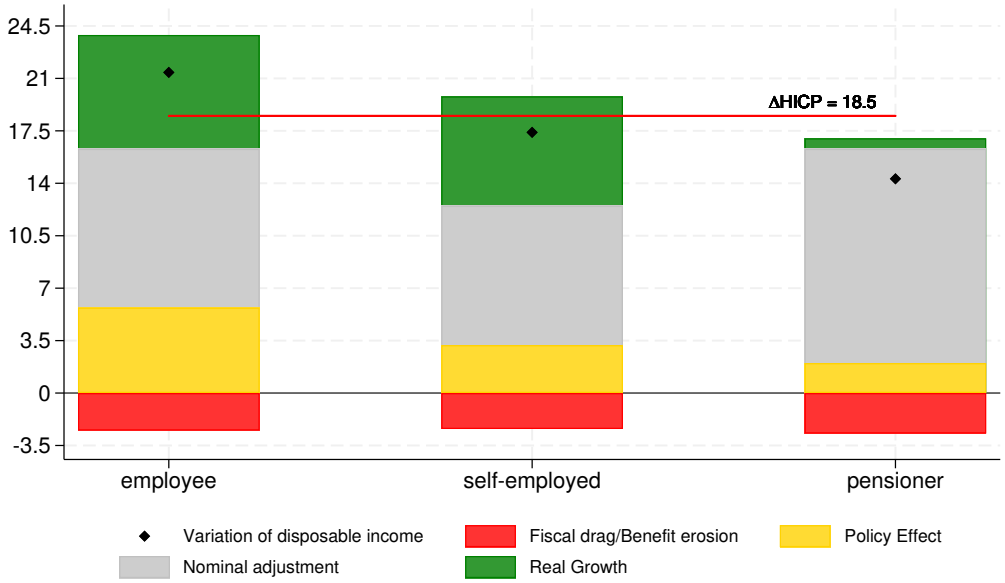
should be interpreted with caution as we can not take into account that inflation may differ across quintile groups.[22] Consumption baskets differ across households, and price changes vary accordingly. Moreover, the recent inflation shock hit goods and services consumed by lower-quintile households disproportionately (see Curci, Savegnago, Zevi, and Zizza (2025)). Thus, whenever we refer to purchasing power by quintile groups, it should be kept in mind that it is calculated using an overall price index, not a quintile-specific one, as would be more accurate.

Interestingly, while the combined effect of fiscal drag and benefit erosion is similar for the first four quintile groups, the latter plays a significant role only in the bottom group (1.3%). This is due in particular to the erosion of anti-poverty benefits, which are not adjusted at all for inflation. Policy effects are strongest for the third quintile, while they are more muted for the lowest and, especially, the top quintile. This result reflects the composition of each quintile group: the bottom quintile group has the highest share of households relying primarily on social assistance income, while the top one includes the largest share of self-employed households, which have been less favored by the policy measures implemented.

As for the second dimension of household heterogeneity, Figure 8 shows three types of households, distinguished by their prevailing income source—employment, self-employment, or pensions. Pensioner households were the most penalized: over four years, their cumulative income growth (14.3%) remained well below the increase in prices. This reflects the absence of real growth, a smaller impact of policy changes, and stronger fiscal drag. The latter stems from a higher degree of nominal adjustment, as pensions are indexed to lagged inflation—though not fully for higher pensions. Comparing employees and the self-employed, the latter are worse-off as employees'

[22] Istat provides a measure of the inflation rate by quintiles of equivalent households expenditure. We cannot use this measure in our estimates as we group households by quintiles of equivalent disposable income.

disposable income benefited more from the tax-benefit system changes implemented. The disposable income growth of the two groups are 17.4% and 21.4%, respectively.



Source: Authors' elaborations based on BIMic simulations; see the text for details.
Note: Income source categories are assigned according to the household's prevailing income source.

Figure 8: Cumulative variation and contributions for years 2022-2025, percentage points, by prevailing income type.

7 A counterfactual exercise: the distributional effects of indexing the 2021 tax-benefit system

It is often argued that automatic indexation of the tax-benefit system represents the most natural way to counteract fiscal drag and benefit erosion. For purely illustrative purposes, we present the results of a counterfactual analysis in which the discretionary measures introduced from 2021 onward are replaced by a policy of *full* (100%) indexation of the 2021 tax-benefit system to the annual inflation rate (HICP).

The analysis remains within the measurement framework outlined in Section 4 and

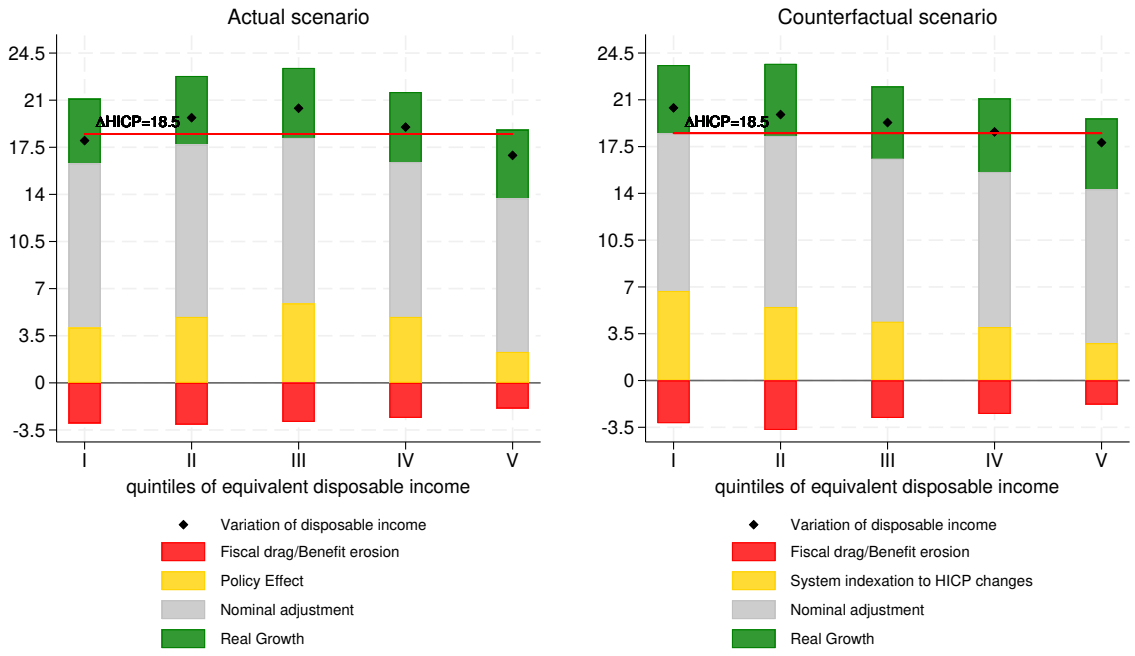
equation 3 continues to define the evolution of individual disposable income. This ensures comparability between the distributional effects of automatic indexation and those of the actual discretionary measures implemented during the period 2022–2025. Formally, the difference between the two scenarios lies in the specification of $f_t(\cdot)$ (i.e., the tax-benefit system) for each year t: under the counterfactual, the structure and rules of the 2021 tax-benefit system are maintained, while all parameters defining income thresholds—across taxes, social security contributions, and benefits—are indexed to the year t inflation rate.[23]

Indexing tax-benefit parameters is intended to eradicate fiscal drag and benefit erosion altogether. However, in our framework we can still identify fiscal drag and benefit erosion (being based on the application of time $t-1$ tax-benefit system to gross incomes only adjusted for inflation) separately from the effect of the parameter automatic indexation to inflation. Formally, in this counterfactual scenario we compute new values of $FD_{i,t}$ and $PE_{i,t}$ and compare them with those reported in Section 6.

Notice that, on average, the counterfactual indexation more than offsets fiscal drag and benefit erosion as long as the inflation indexation rate exceeds the population's average rate of nominal income adjustment to inflation. We estimate that, during the period 2022–2025, gross income adjustments covered on average only 62% of cumulative inflation. This implies that if tax-benefit system parameters are indexed to a percentage of inflation higher than 62%, households would, on average, be compensated for the losses caused by fiscal drag and benefit erosion. Conversely, if the indexation rate is lower, the government is effectively extracting resources from households.

[23] In the counterfactual exercise the treatment of the anti-poverty benefit deserves a special attention. In BIMic, microsimulation of this benefit is carried out in two steps to account for effective take-up. First, we estimate eligibility to the transfer, defining the pool of potential beneficiaries; then, we impute the benefit to specific households within this pool through random assignment, matching the official annual number of beneficiaries. Since in this counterfactual exercise the indexation of eligibility thresholds mechanically enlarges the pool of potential beneficiaries, we preserve the same take-up rate by proportionally increasing the number of beneficiary households.

On average, the growth of household disposable income in the counterfactual scenario would have matched the cumulative inflation rate, as it has happened in reality. The budgetary impact of the counterfactual policy option is also similar to that of the discretionary measures actually implemented: net of the resources absorbed by fiscal drag and benefit erosion, actual policy measures returned 11.6 billion euros to households over the period 2022–2025 (see Table 4), whereas full indexation of the tax-benefit system would have returned 12.1 billion.[24]



Source: Authors' elaborations based on BIMic simulations; see the text for details.
Note: The left panel corresponds to the actual scenario, which replicates the discretionary targeted interventions implemented during 2022–2025 (see also Figure 7). The right panel illustrates the counterfactual scenario, where discretionary measures introduced from 2021 onward are replaced by full indexation of the tax-benefit system to the annual inflation rate (HICP). In both panels, quintile groups are identical and computed according to the actual scenario.

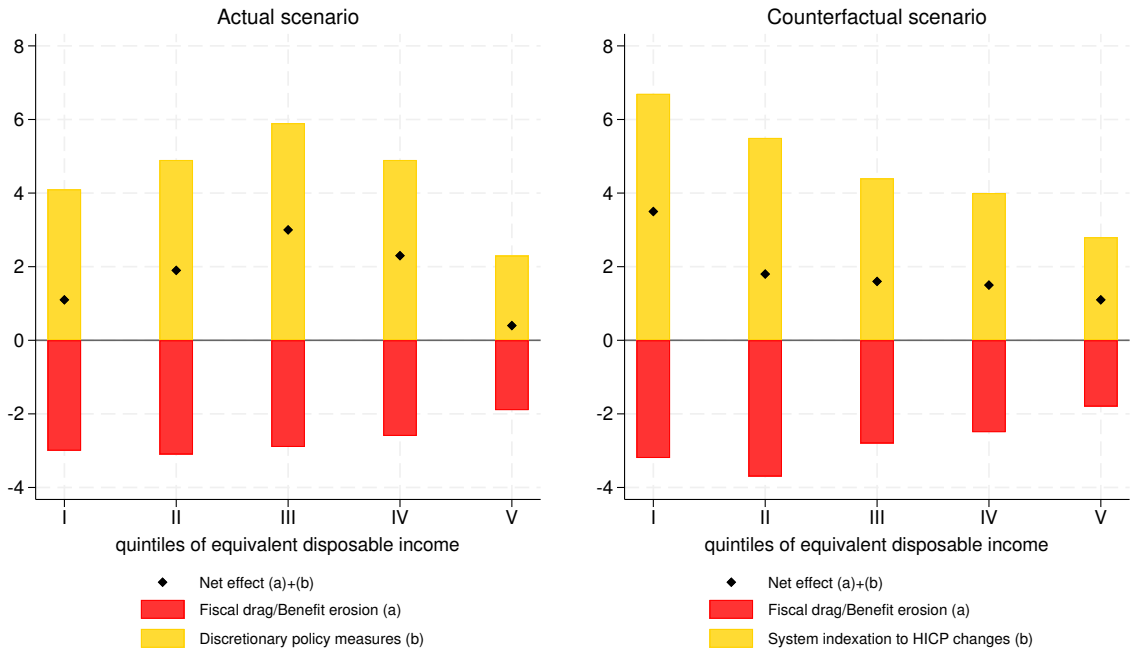
Figure 9: 2022-2025 cumulative variation of household disposable income and contributions, in percentage points, by quintile groups of equivalent disposable income.

[24]This amount results from the difference between the cost of indexing the tax-benefit system (31.7 billion euros) and the sum of fiscal drag and benefit erosion, which in this scenario is 19.6 billion. Notice that estimated amounts of fiscal drag and benefit erosion in the counterfactual scenario differ from those in the actual scenario because the underlying tax-benefit system for each year is not the same.

Figure 9 shows the cumulative change in household disposable income by quintile groups between 2022 and 2025 both under the counterfactual scenario of full inflation indexation (right-hand side panel) and under the actual scenario (left-hand side panel, already shown in Figure 7). This comparison suggests that indexing parameters to inflation would have ensured better protection of purchasing power for the lowest and top quintiles, with the improvement being more pronounced for the former. Gains in purchasing power for the second and fourth quintile groups would have been roughly the same as in the actual scenario, they would have been slightly lower for the third quintile.

This exercise shows that, with an automatic indexation of the system to inflation, the net overall support provided by the tax-benefit system (i.e. taking into account fiscal drag and benefit erosion) would somewhat decline across quintiles. Figure 10 illustrates this point. Compared to the actual scenario, households in the third and fourth quintile groups are worse off under the counterfactual and those in the second are indifferent. Households in the remaining two quintiles are better off—especially those in the bottom quintile, which in particular would benefit from the automatic indexation of the anti-poverty benefit. A crucial factor behind this result is that, in the counterfactual exercise, the anti-poverty measure in place is still *RdC*, which is more generous than *AdI*, its subsequent version introduced in 2024. For the bottom quintile group the counterfactual scenario has the double advantage of preserving a generous anti-poverty benefit and addressing one of its main weakness, namely its lack of inflation indexation.

Overall, the two scenarios have a similar effect on inequality levels across Italian households. The Gini index between 2021 and 2025 declined —by 0.5 percentage points—to 35% in the actual scenario, while it would have declined by 0.4 percentage points under the counterfactual scenario.



Source: Authors' elaborations based on BIMic simulations; see the text for details.
Note: The left panel corresponds to the actual scenario, which replicates the discretionary targeted interventions implemented during 2022–2025 (see also Figure 7). The right panel illustrates the counterfactual scenario, where discretionary measures introduced from 2021 onward are replaced by full indexation of the tax-benefit system to the annual inflation rate (HICP). In both panels, quintile groups are identical and computed according to the actual scenario.

Figure 10: Contribution of fiscal drag, benefit erosion and policies to the cumulative variation in household disposable incomes for years 2022-2025, percentage points, by quintile groups of equivalent disposable income.

8 Conclusions

This paper has examined the evolution of Italian households' disposable income in the aftermath of the 2022-2023 inflationary shock, with a particular focus on the role of fiscal drag and benefit erosion. By leveraging a microsimulation approach, we proposed an operational definition of fiscal drag grounded in observable tax revenue dynamics and we computed it for each individual in our model. In addition, we extended the analysis to benefit erosion—an aspect often overlooked in the literature. We find that, on average, households' purchasing power returned to pre-crisis levels,

supported by employment growth and discretionary policy interventions. However, there are differences across household groups: over 2022-2025 disposable income growth was slightly higher than inflation for households in the three middle income quintile groups. It was broadly in line with inflation in the bottom quintile. It fell slightly short in the top quintile group. Households with pensions as their main income source suffered, on average, the highest loss in purchasing power; also those relying on self-employment income experienced a change in disposable income below inflation but with a smaller gap; on the contrary, households dependent on wages and salaries experienced an increase in real disposable income. Finally, for purely illustrative purposes, a counterfactual exercise suggests that full automatic indexation of the 2021 tax-benefit system, would have similar effects in terms of budgetary costs and disposable income dynamics; from a distributional viewpoint, it would have been more favourable for the bottom and for the top quintile group and slightly less favourable for the third.

These results should not be interpreted as providing a comprehensive welfare evaluation because regaining in 2025 the same purchasing power as in 2021 does not offset the cumulative losses incurred in the interim. Moreover, since the factors contributing to the recovery may have opposing effects on individual utility (for example, higher income having a positive effect while increased labor supply has a negative one), higher purchasing power—if achieved through greater labor supply—may actually imply lower utility.

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Appendix A

A focus on Benefit Erosion

A key contribution of this paper is the ability to quantify how eligible social benefits change when incomes adjust to inflation—a phenomenon we refer to as benefit erosion. This Appendix formalizes how we calculate benefit erosion.

The Italian tax–benefit system includes three main categories of benefits (as summarized in Table 1):

1. Benefits based on current-year gross income, such as the in-work benefit (*bonus Irpef*), one-off bonuses introduced in 2022, and family allowances.
2. Benefits based on the ISEE indicator, with fixed thresholds and amounts (e.g., anti-poverty transfers). The ISEE indicator uses income and wealth from two years earlier.
3. Benefits based on ISEE but indexed to the previous year's CPI (e.g., AUU).

For category (1), benefit erosion is:

$$BE_{i,t} = b_{t-1}((1+\omega_{i,t})Y^G_{i,t-1}) - (1+\omega_{i,t})B_{i,t-1}, \tag{5}$$

where $b_{t-1}((1+\omega_{i,t})Y^G_{i,t-1})$ is the counterfactual benefit under previous rules applied to inflation-adjusted income and $(1+\omega_{i,t})B_{i,t-1}$ is the benefit without erosion. Figure A1 illustrates this case.

For category (2), erosion depends on the nominal adjustment observed in $t-2$:

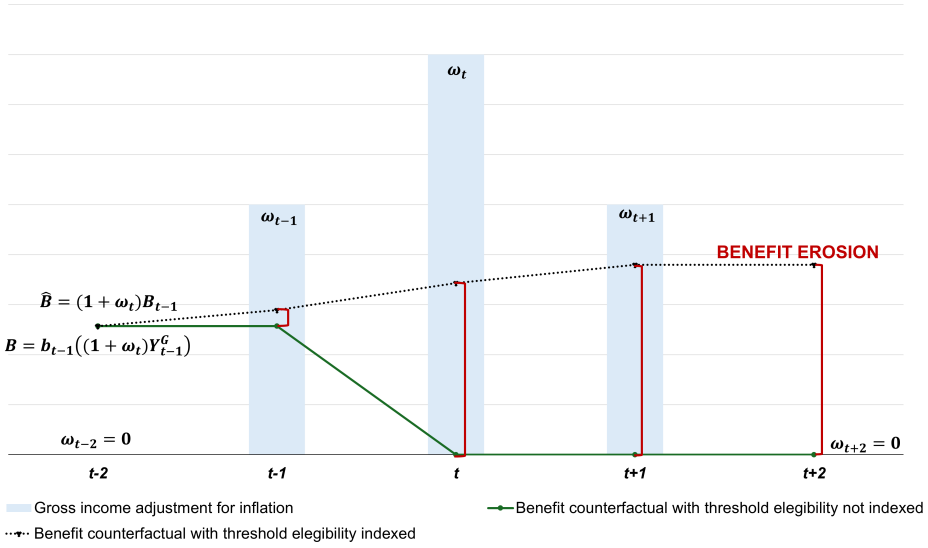
$$BE_{i,t} = b_{t-1}(I((1+\omega_{i,t-2})Y^G_{i,t-3})) - (1+\omega_{i,t-2})B_{i,t-1}, \tag{6}$$

where $I(\cdot)$ is the ISEE function. Figure A2 shows this lagged effect.

For category (3), thresholds and amounts are indexed to the change in the CPI of the previous year:

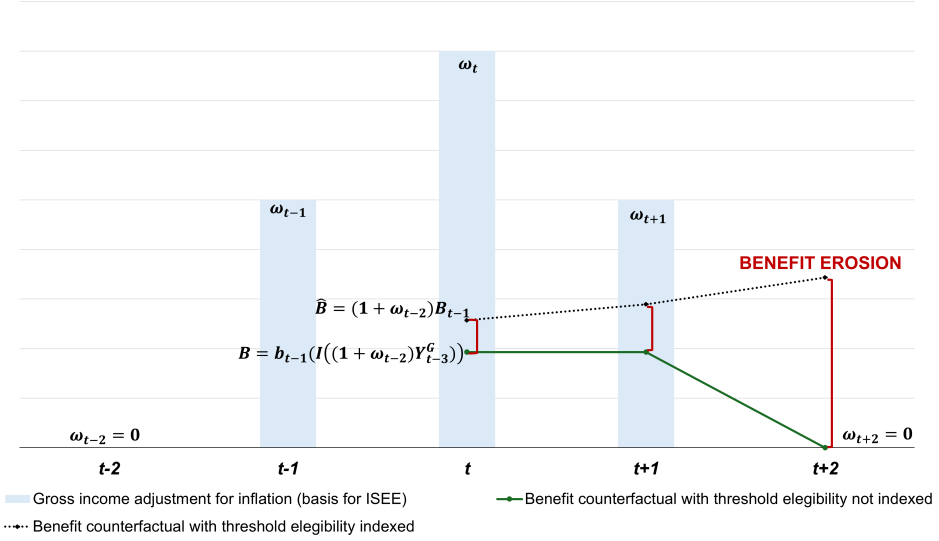
$$BE_{i,t} = b_{t-1}(I((1+\omega_{i,t-2})Y^G_{i,t-3}); \pi_{t-1}) - (1+\omega_{i,t-2})B_{i,t-1}, \tag{7}$$

where π_{t-1} is the CPI change. Figure A3 illustrates the lagged effect: if $\pi_{t-1} > \omega_{i,t-2}$, benefits rise (anti-erosion); if $\pi_{t-1} < \omega_{i,t-2}$, erosion occurs.



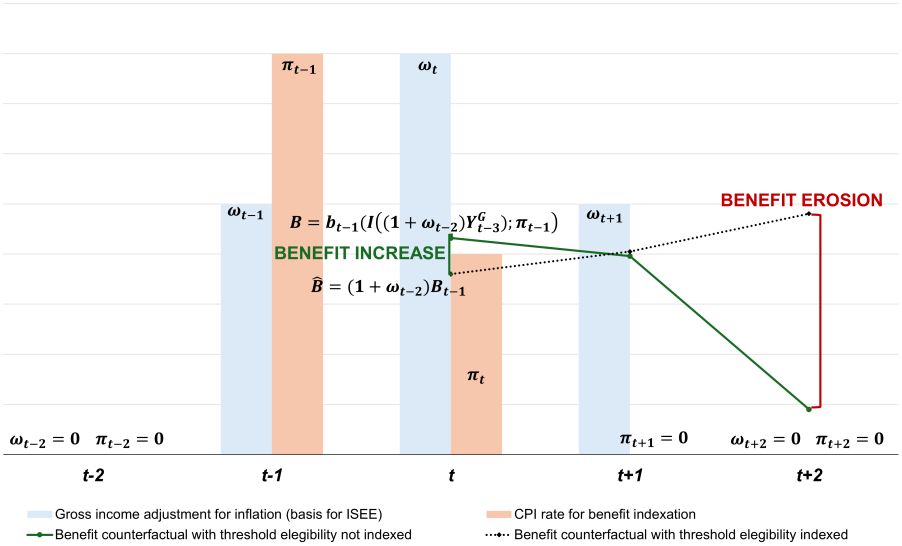
Note: The dotted line represents the counterfactual benefit, increasing proportionally with $\omega_{i,t}$, while the solid line shows the actual benefit computed using the previous year's rules and the inflation-adjusted gross income. In this example, we hypothesize a loss of benefits from t , caused by the fact that nominal adjustment of incomes push them above the eligibility threshold.

Figure A1: Benefit erosion for benefits based on gross income



Note: The dotted line represents the counterfactual benefit, which evolves with the nominal-adjusted gross income from $t-2$, while the solid line represents the benefit computed according to the $t-1$ legislation (using time t ISEE that derives from $t-2$ incomes). In this example, we simulate a loss of benefit in $t+2$ caused by crossing the eligibility threshold after the nominal adjustment.

Figure A2: Benefit erosion for benefits based on ISEE



Note: The dotted line again represents the counterfactual benefit—linked to gross incomes adjusted for inflation in $t-2$—while the solid line corresponds to the benefit computed under the $t-1$ rules using the ISEE derived from those same incomes. A 'lagged' benefit erosion effect occurs, for example, when π_{t-1} does not equal the rate of nominal adjustment observed two years earlier. Specifically, when $\pi_{t-1} > \omega_{i,t-2}$, the eligible benefit actually increases and the opposite of benefit erosion occurs, as benefit amounts are adjusted following a higher rate than time $t-2$ nominal adjustment rate, which is the relevant one for benefit eligibility and calculation; conversely, when $\pi_{t-1} < \omega_{i,t-2}$.

Figure A3: Benefit erosion for indexed benefits based on ISEE

Appendix B

Robustness Check

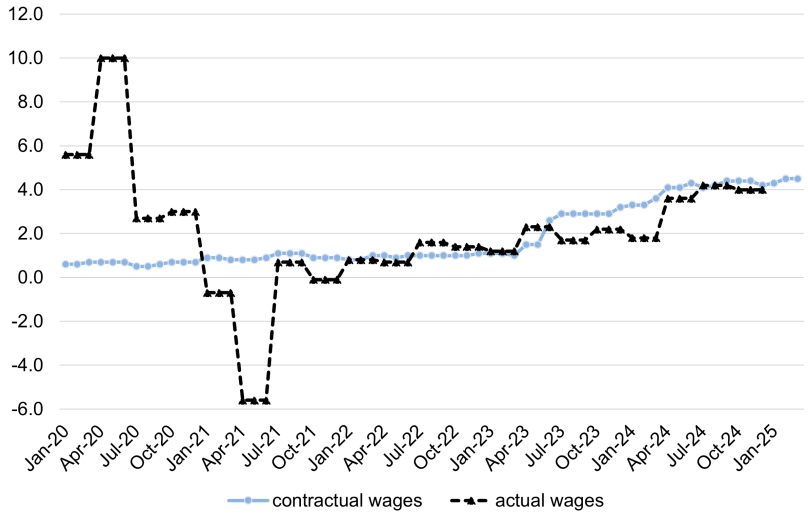
To test the sensitivity of our results to the use of rate of nominal adjustment the hourly wage index based on collective labor agreements, we replicated the analysis using wages per hour worked from national accounts.

The differences between the main exercise and this robustness check (see Table B1) are more a matter of timing than of overall magnitude. The cumulative contributions over 2022–2025 are identical, indicating that the overall impact remains unchanged. The divergence lies in the year-by-year effects (see Figure B1). In the robustness scenario, the underlying indicator (gross hourly actual wages) began to rise earlier, in 2022, resulting in a front-loaded effect on nominal adjustments, and consequently on fiscal drag, benefit erosion, and real growth. In contrast, in the main exercise, which relies on gross hourly contractual wages, adjustments occurred more gradually and were realized later. Therefore, the differences observed in 2022–2023 reflect the earlier acceleration of actual wages, while for 2024–2025, the two indicators converge.

Factors Contributing to Disposable Income Variation	**2022**	**2023**	**2024**	**2025**	**Cum. 2022–25**
Adjustment of gross incomes to inflation	18.5	30.8	26.0	19.6	94.8
difference respect to the main scenario	*5.7*	*-3.3*	*-2.0*	*-0.1*	*0.3*
Fiscal drag / Benefit erosion	2.6	3.8	5.6	7.4	19.5
difference respect to the main scenario	*-1.5*	*1.2*	*0.2*	*0.2*	*0.1*
Fiscal drag	*2.3*	*5.1*	*5.5*	*5.0*	*17.8*
difference respect to the main scenario	*-1.1*	*0.8*	*0.3*	*0.0*	*0.1*
Benefit erosion	*0.3*	*-1.2*	*0.2*	*2.5*	*2.0*
difference respect to the main scenario	*-0.4*	*0.4*	*-0.2*	*0.2*	*0.0*
Real growth of gross incomes	16.9	11.2	8.6	3.8	40.6
difference respect to the main scenario	*-4.2*	*2.1*	*1.8*	*-0.1*	*-0.4*
Policy effects	23.4	-3.4	7.3	4.0	31.3
difference respect to the main scenario	*-0.1*	*0.2*	*-0.1*	*0.0*	*0.0*
Targeted anti-inflation measures	*12.7*	*-10.3*	*-1.4*	*1.3*	*2.3*
difference respect to the main scenario	*-0.1*	*0.2*	*0.0*	*0.1*	*0.1*
Structural changes to the tax-benefit system	*8.0*	*1.3*	*4.5*	*14.4*	*28.2*
difference respect to the main scenario	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Temporary reduction of employee SSC	*2.7*	*5.6*	*4.2*	*-11.7*	*0.8*
difference respect to the main scenario	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*
Disposable income variation ΔY_t^D	56.1	34.7	36.2	20.0	147.1
difference respect to the main scenario	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*

Source: *Authors' elaborations based on BIMic simulations; see the text for details..*

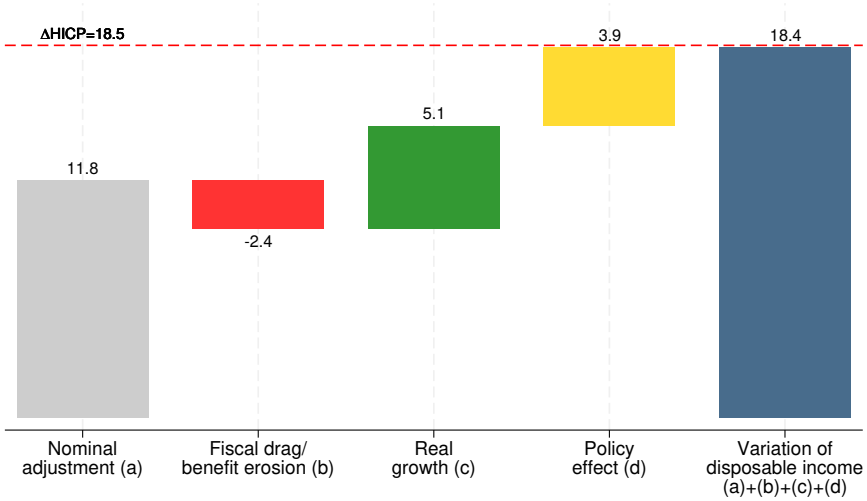
Table B1: Contributions (and difference respect to the main exercise) to the variation in household disposable income, in billions of euros.



Source: Bank of Italy (2024), Annual Report 2024, Chapter 8.

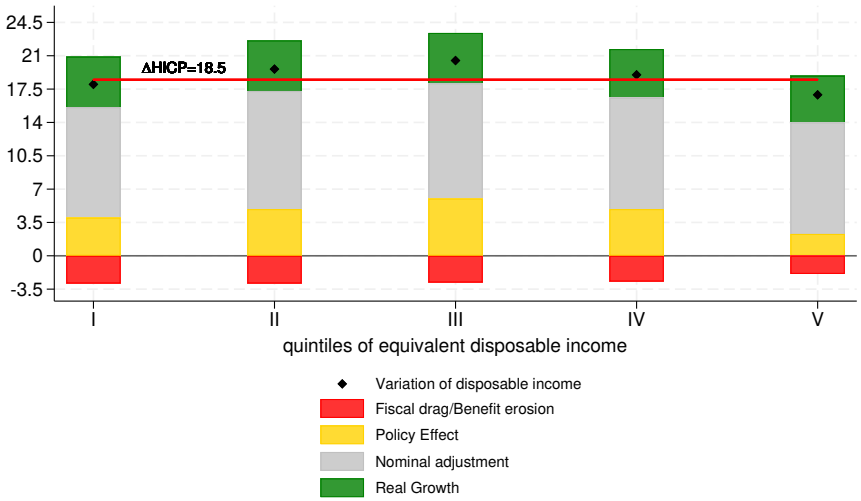
Figure B1: Percentage changes relative to the corresponding period of actual and contractual wages.

Below, we report the figures, as shown in Section 6, now constructed using the alternative indicator of actual wages.



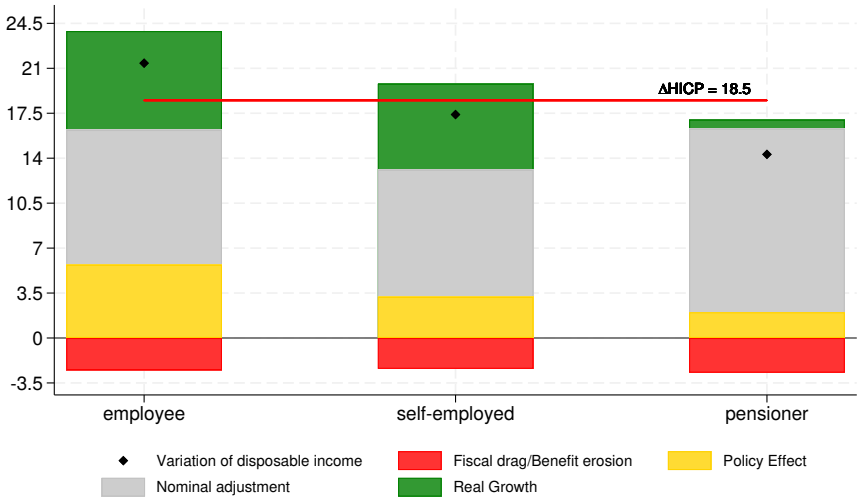
Source: Authors' elaborations based on BIMic simulations; see the text for details.

Figure B2: Contributions to the cumulative variation in household disposable income between 2021 and 2025, in percentages.



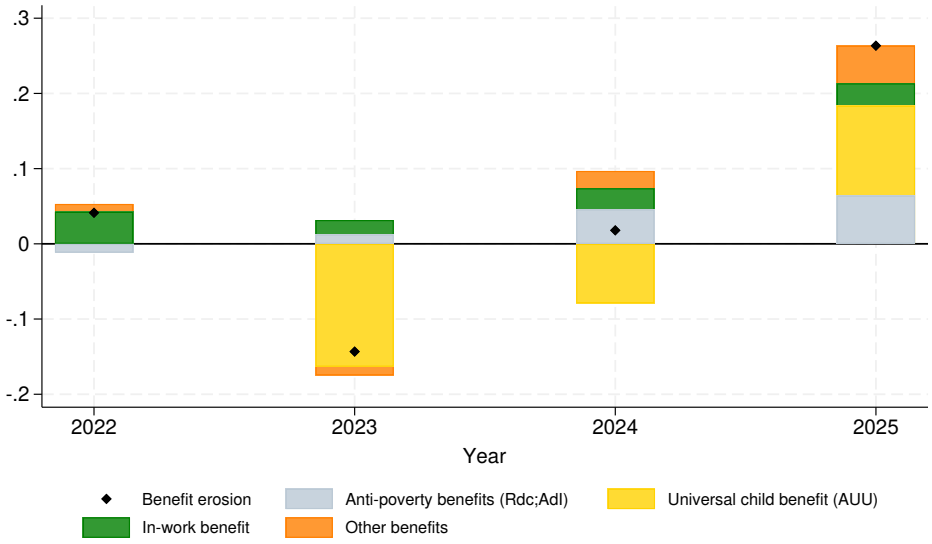
Source: Authors' elaborations based on BIMic simulations; see the text for details.

Figure B3: Cumulative variation and contributions for years 2022–2025, in percentage points, by quintile groups of equivalent disposable income.



Source: Authors' elaborations based on BIMic simulations; see the text for details.

Figure B4: Cumulative variation and contributions for years 2022–2025, in percentage points, by prevailing income type.



Source: Authors' elaborations based on BIMic simulations; see the text for details.

Figure B5: Contributions of benefit erosion to the variation in household disposable income, in percentages.

Appendix C

Summary of Simulated Policy Measures

Table C1: Simulated policy changes

Year	Tax-benefit component	Changes relative to previous year
2022	PIT and In-work benefit	PIT: from 5 to 4 tax brackets with changes to tax rates/brackets. Changes to tax credits for employees, self-employed and pensioners.*Bonus Irpef*: abolition for the large part of employees.
2022	SSC	Cut for employees with gross earnings up to 35,000 €/year (0.8 p.p. from Jan–Jun; 2 p.p. for the rest of the year).
2022	Benefit	New universal benefit for children: *Assegno Unico e Universale* (abolishing all previous measures for children).
2022	Benefit	Bonus for households' energy expenditure: ISEE threshold increased to €12,000 (to €20,000 for large families with more 4 children) and enhancement of amounts.
2022	Benefit	*One-off bonus*: €200 and €150 for some categories of employees, pensioners, unemployed, self-employed, collaborators, domestic workers.
2023	SSC	Cut of 3 p.p. (2 p.p.) for employees with gross earnings up to €25,000 (from €25,000 up to €35,000.)
2023	Benefit	*Reddito di cittadinanza* limited to max 7 months. Exemptions: households with minors or individuals aged 60 or over.
2023	Other taxes	Flat-tax for self-employed (*Regime forfettario*): eligibility threshold raised from €65,000 to €85,000.
2023	Benefit	AUU: increment for newborns and for children up to 1 year old.
2023	Benefit	*Carta Dedicata a Te*: new support for low-income households.
2023	Benefit	Bonus for households' energy expenditure: ISEE thresholds increased to €15,000 (to €30,000 for large families with more than 4 children).
2024	PIT	From 4 to 3 brackets; reform of no-tax area; €260 reduction of selected tax credits for incomes of €50,000 or more. Changes are only for 2024.
2024	SSC	Cut of 7 p.p. (6 p.p.) for employees with gross earnings up to €25,000 (from €25,000 up to €35,000.).
2024	Benefit	New anti-poverty benefit, *Assegno di inclusione*, replaced *Reddito di Cittadinanza*. This new benefit excludes households with components in working-age limits and without children.
2024	Benefit	Bonus for kindergarten expenses: increase of the amount for some households.
2024	Benefit	*Carta Dedicata a te*: mount increased to €500.
2024	Benefit	*Bonus Natale*: one-off up to €100 for employees with income up to €28,000 and at least 1 dependent child.
2024	Benefit	Bonus for households' energy expenditure: ISEE threshold returned to the pre-crisis level, €9,530.
2025	PIT and In-work benefit	Reduction to 3 brackets and changes to no-tax area become permanent. New bonus for employees with income up to €20,000 with different rates applicable to the employment income: 7.1% for incomes up to €8,500; 5.3% for incomes between €8,501 and €15,000; and 4.8% for incomes between €15,001 and €20,000. Additional tax credit (for employees with taxable income between €20,001 and €40,000): €1,000 fixed credit for incomes between €20,001 and €32,000, and a tapered credit for incomes between €32,001 and €40,000.
2025	SSC	General SSC cuts repealed, except for working mothers with 3 or more children that maintain the same cut.
2025	Other taxes	*Regime forfettario*: the maximum amount of additional employment or similar incomes permitted to self-employed for accessing or remaining in the flat-rate regime raised from €30,000 to €35,000.
2025	Benefit	New mothers' bonus (monthly €20 bonus) for working mothers with two dependent children.
2025	Benefit	Bonus for households' energy expenditure: extraordinary bonus of €200 for households with an ISEE not exceeding €25,000.