

# Employment Growth, Inflation, and the Distribution of Household Labour Income\*

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Fondazione Tor Vergata–MEF  
Rome, January 28th, 2026

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\*The views expressed in this paper do not necessarily reflect those of INPS and Bank of Italy

# Inflation, employment, and inequality

- During Italy's post-pandemic recovery:
  - prices grew very rapidly;
  - gross wages did not react.
- After three years real wages are still 6% lower than in 2019 (Istat data).

At the same level of 2000 in Italy. Inflation is typically considered regressive

  - poorer households face higher effective inflation (OECD, 2023)

# Motivating evidence: Inflation, wages and employment

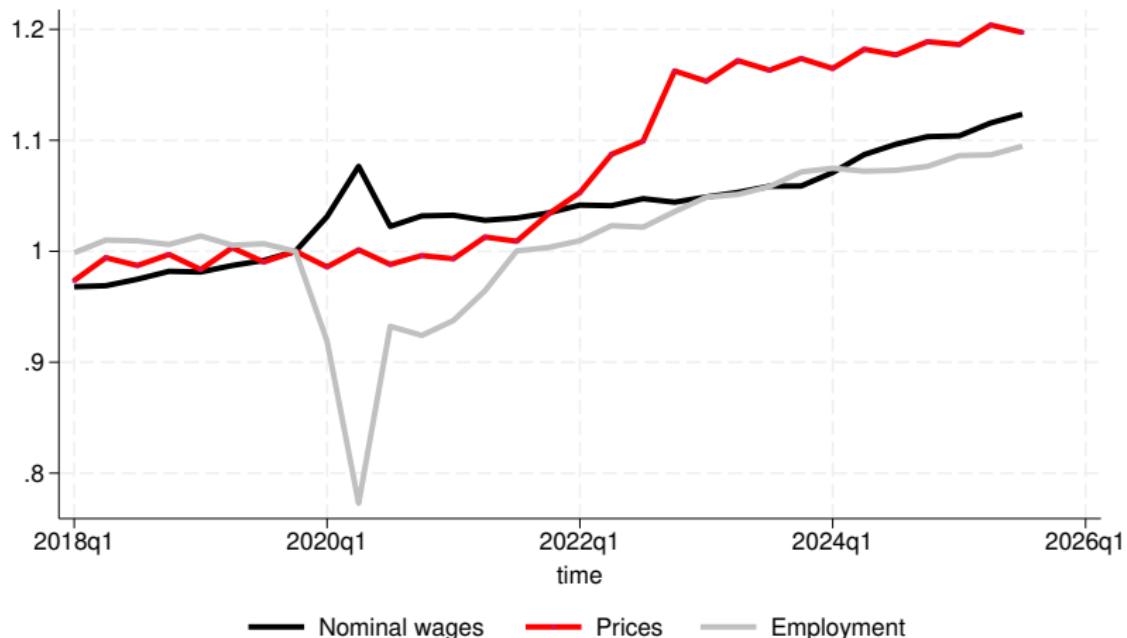


Figure: Nominal wages, inflation and employment in Italy (2019=1)

# Inflation and distribution: what we know

- Inflation affects households asymmetrically
  - heterogeneous consumption baskets
  - limited scope for substitution at the bottom
- As a result:
  - inflation is typically regressive in partial equilibrium
- Ex ante, rising prices should increase inequality. (Charalampakis et al., 2022 for EU and Curci et al., 2022 for Italy)

# Inflation by consumption quintiles

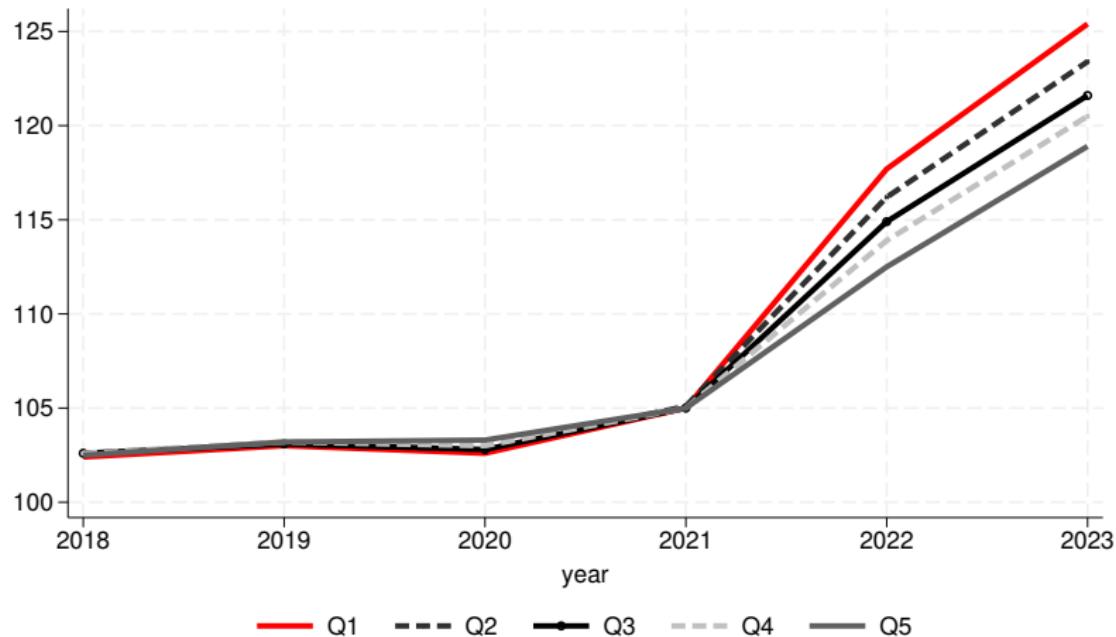


Figure: Cumulative inflation rate (%) between 2018 and 2023 by expenditure quintile  
(Source: ISTAT)

# Inflation, labour markets, and inequality

- Distributional effects of inflation depend on labour-market adjustment [Blinder and Esaki, 1978, Cardoso, 1992]
- Employment dynamics matter more than prices per se
  - job losses amplify inequality
  - job creation can offset real income losses
- Demand-driven inflation may coincide with employment growth. In the US this lead to higher wages at the bottom [Autor et al., 2023]

# Why Italy and Europe are different?

- The wage response to labour-market tightness is weaker in Europe [Arce et al., 2024]
  - compared with the United States
- Institutional features of wage setting:
  - collective bargaining
  - delayed contract renewals
  - partial indexation
  - lower responsiveness to labour market tightness
- Adjustment to shocks occurs mainly through employment, not wages

# This paper

- We study the joint distributional effects of:
  - heterogeneous inflation exposure
  - employment growth along the extensive margin
- Administrative earnings data linked to household surveys
- Focus on labour income and employment transitions
- Quantify the role of fiscal policy during the inflation surge

# What we do

- ① We merge INPS data on employees with EU-SILC data to follow households;
- ② We match the dataset in 1 with HBS to recover expenditure quintiles and assign each household its specific inflation rate;
- ③ We follow households until 2023 and look at the distribution of household real labour income (in equivalent terms);
- ④ We determine whether changes in labour income depend on employment or wages, and on changes in labour supply;
- ⑤ We simulate net individual income to uncover the impact of fiscal policies on the distribution of real labour income;

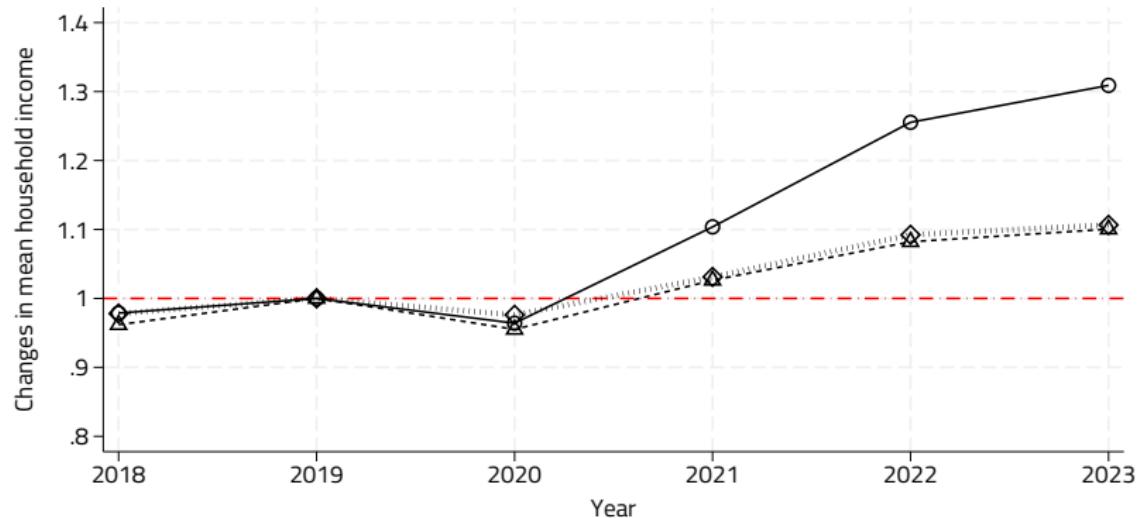
## Preview of the results

- ① We find a decline in income inequality because of improvements in the relative position of poorer households;
- ② This was mainly driven by the fact that labour demand involved mainly low skilled workers (over-represented among poorer households);
- ③ Some limited effect of wages at the bottom;
- ④ Fiscal policy contributed to reduce inequality further (but the largest effect is still due to labour demand).

# Data

- INPS data (Rapporti di Lavoro and Estratti conto): employment and income over 2018-2023.
  - Income measure: annual earnings, weekly wage.
  - Self employment non considered (income declaration is censored).
  - we only focus on households that in 2018 had no income from self-employment or retirement. Only prime age individuals (i.e. below 59 years old, to avoid retirement decisions).
- IT-SILC: household composition in 2018.
  - Carbonaro [1985] equivalence scale adopted.
  - Household income: sum of individual incomes.
- Household Budget Survey (HBS): consumption (for household specific inflation rate).
  - We assign to each family the average **inflation rate specific** to its respective consumption fifth. We follow standard procedures also applied by Istat.[Donatiello et al., 2014]

# Nominal household labour income, by expenditure quintile

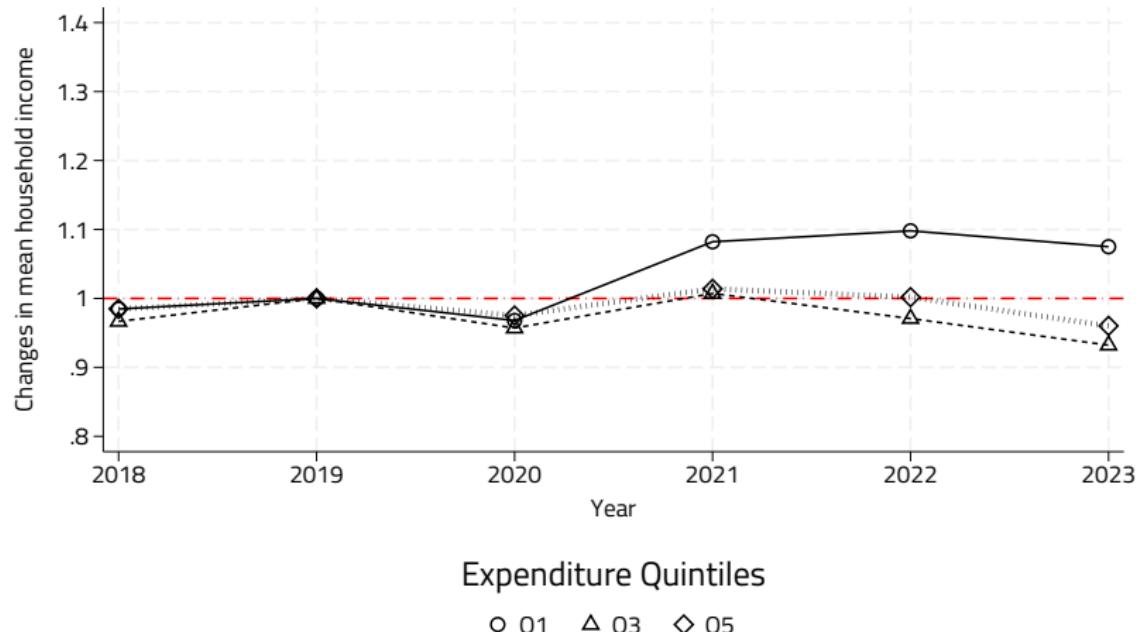


## Expenditure Quintiles

○ Q1    △ Q3    ◇ Q5

**Notes:** All series are expressed relative to 2019. Household labour income is equivalized using the Carbonaro scale [Carbonaro, 1985].

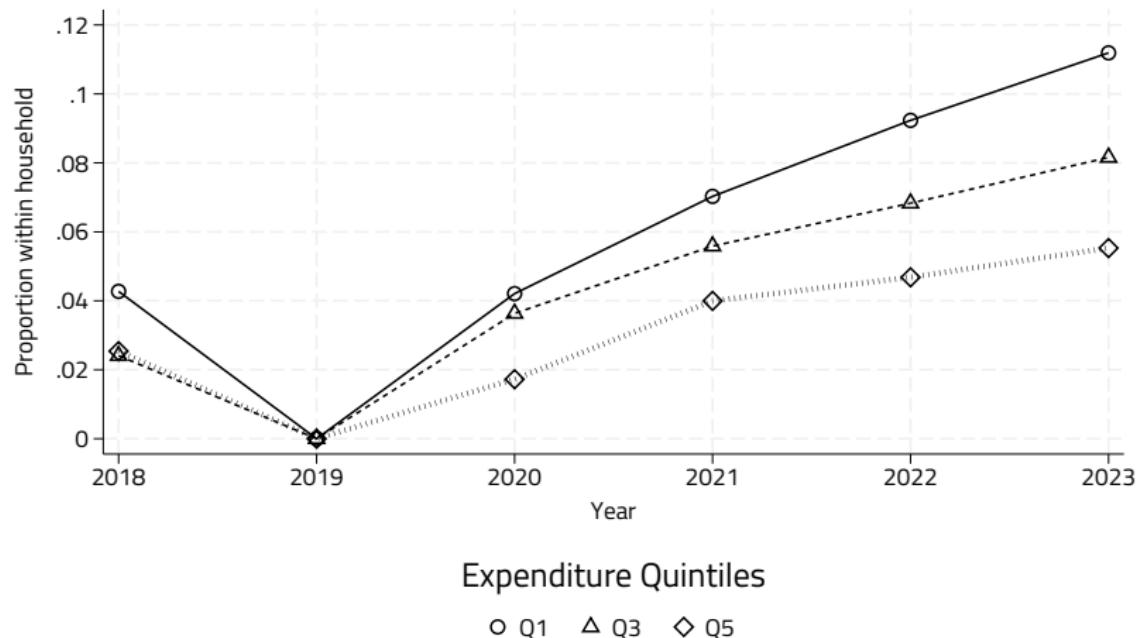
# Real household labour income, by expenditure quintile



Notes: All series are expressed relative to 2019. Household labour income is equivalized using the Carbonaro scale [Carbonaro, 1985].

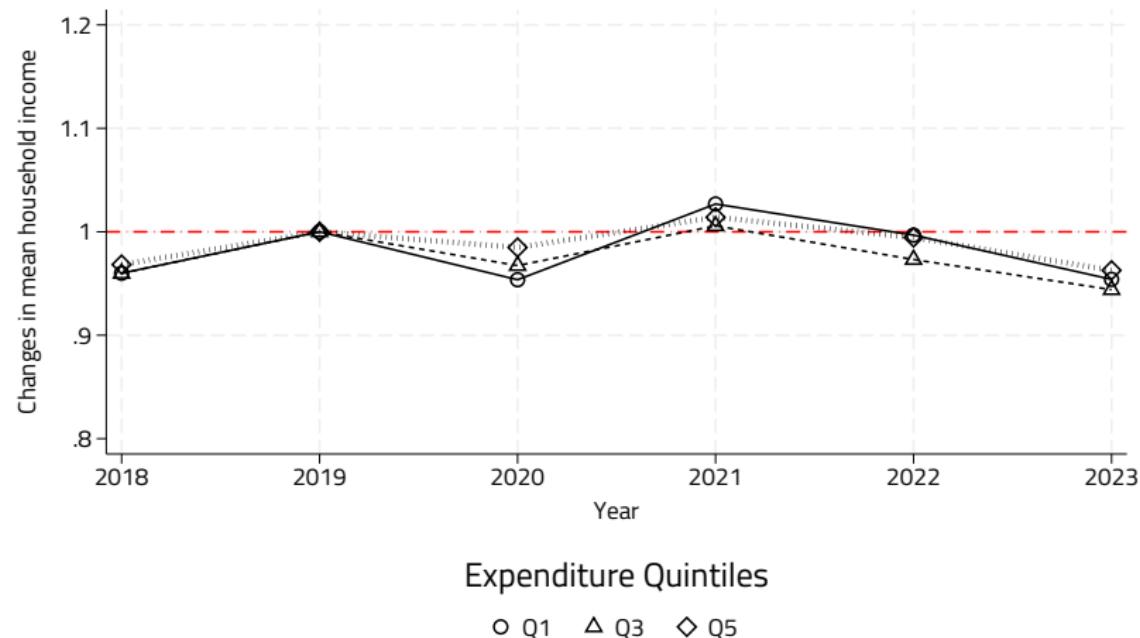
# Inspecting the mechanism: entry

Figure: Share of unemployed in 2019 who become employed



# Inspecting the mechanism: Stayers

Household income excluding unemployed members in 2019 who become employed.



# Stayers: wages or intensive margin? First quintile

Decomposition of nominal household income growth for stayers: weeks worked vs. weekly wages.



# Stayers: wages or intensive margin? Fifth quintile

Decomposition of nominal household income growth for stayers: weeks worked vs. weekly wages.



# Is the employment expansion a labour supply response to high inflation?

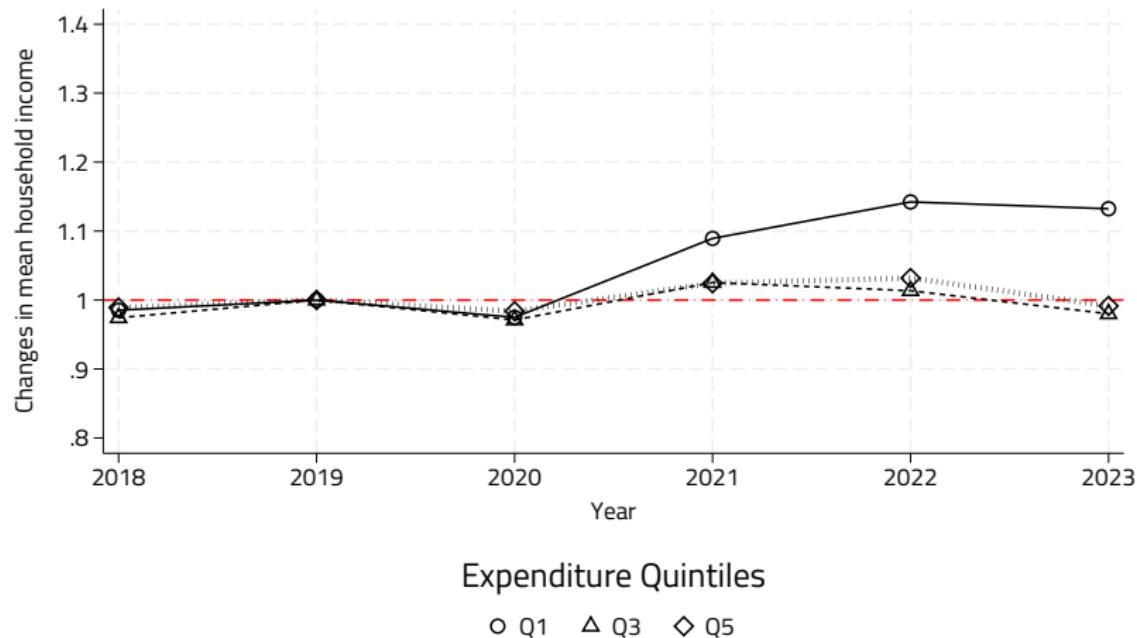
- Relevant for welfare considerations.
  - Oaxaca–Blinder framework: *explained component* captures how much of the observed gap is accounted for by differences in observable characteristics. *unexplained component* reflects differences in job-finding (or job-loss) probabilities conditional on these characteristics. Characteristics matter: those who found employment disproportionately concentrated in poorer households. No change in behaviour.
  - Consumer Expectations Survey (CES). we estimate individual fixed-effects regressions relating job search to inflation expectations. No evidence of changes in job search behaviour.
  - Exploit heterogeneity in automatic wage indexation across sectors (metalworking and wood industries—covering roughly 15% of dependent employees). If inflation-induced income declines stimulated job-search effort or labour supply, households headed by non-indexed workers should exhibit larger increases in employment during the high-inflation period.(Difference-in-differences specification). No effect.

# Fiscal interventions to sustain households at the bottom of the distribution

<b>2020</b>	Bonus contributivo	Permanent reduction in ssc for $y < 40,000$ .
<b>2021</b>	Payroll tax cuts	Temporary reductions in ssc for low-income workers.
<b>2022</b>	IRPEF reform	Reduction in the number of income tax brackets and lower marginal rates in the second and third brackets (from 27% to 25% and from 38% to 35%).
<b>2022-23</b>	New tax credits	Integrated system of employee tax deductions for $y < 28,000$ .

# Real Net HH income

## Equivalent Household income after taxes



Notes: All series are expressed relative to 2019. Household labour income is equivalized

# Sum up and Conclusions

- Substantial redistribution in favour of poorer households.
- Within our sample:
  - 8% increase in equivalent HH income determined by the labour market (mainly new entry into employment of the unemployed members) for households in the first fifth. Declines in the other fifths (by around 5% in 2023);
  - 4% (in 2023!) fiscal measures, for HH in the first fifth. No effect on the others.
- Significant decline in the Gini index (both gross and net HH income)
- The nature of the inflation shock determines its distributional consequences.

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