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Micro Level Data for Macro Models: the Distributional Effects of Monetary Policy

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Inequality has been largely ignored in the literature and practice of monetary policy but is gaining more attention recently. Some descriptive statistics on income dispersion measures show that unconventional monetary policy (UMP) widened income inequality in the Euro area countries after Q4 2008 as the European Central Bank resumed its zero-interest rate policy and implemented UMP. How monetary policy affects inequality depends on how households are distributed along relevant heterogeneity dimensions, such as wealth and income. In this paper, we investigate the effect of standard and non-standard monetary policy implemented by ECB on income inequality in Italy. The main contribution consists of using the survey micro level data on Income and Living Conditions (EU-SILC, ISTAT) for the first time in a repeated cross section design in order to compute inequality measures over time and for specific incomes and subgroups of individuals (savers vs. non-savers). In particular, we focus on household disposable income, earnings, financial capital income and financial wealth to reflect the income composition channel and the financial channel (i.e., higher asset prices have a positive effect on capital income held by wealthier while an increase in GDP, by expanding employment, could have a positive effect on labour income, offsetting the total effect on inequality).

As a first step, we compute more widely used measures of inequality: the Gini coefficient of level variables which takes values between 0 (perfect equality) and 1 (perfect inequality) and also the log-standard deviation, p90/p10 and p75/p25 ratios. Additionally, to analyse the effects on the distribution we compute the 10th, 25th, 50th 75th, 90th and 99th percentiles. Finally, to cover the entire period of ECB communications, that is starting from 1999, we need a longer time span of the series because the survey, alone, covers from 2003 only. Specifically, we extended the series backwards till 1999, by exploiting the micro data from the Historical Archive of the Bank of Italy's Survey of Household Income and Wealth (SHIW). Using both surveys common span, we compute common coefficients to retropolate EU-SILC inequality indexes.

Finally, we obtain a longer time span 1999-2017 of yearly data useful for macro estimates.

The identification strategy is based on policies surprises estimated in the Euro Area Monetary Policy Event-Study Database database (EA-MPD) by Altavilla et al., 2019. The reactions of free-risk rates at different maturity around the ECB policy announcements allow us to disentangle mostly a pure monetary policy surprise from one that arises from central bank information about the economic outlook. As we are dealing with individual households' information aggregated at annual level, the local projections (Jorda, 2005) are the more suitable econometric technique to evaluate the impact of monetary policy by comparing the performance of the impulse response functions of inequality measures in different policy scenarios: 1999-2012 (pre-QE) and 1999-2017 (including the QE period).

Results tell us that over the period 1999-2017, the income composition channel works in the right direction since inequality of disposable and labor income (in particular that of employees) reduces. These effects are heterogeneous and benefit mostly the bottom of the distribution even tough the overall impact on household incomes is modest. An equalising effect is more evident when we consider the response of disposable income before social transfers (pension excluded), as if fiscal policy did not have a crucial redistributive role in Italy during the crises and the recovery period.

Additionally, savers appear to have been "expropriated" during the QE period because they were not compensated enough by the financial capital income gains while borrowers have benefited for a prolonged period from their higher leverage due to lower interest rates. The financial wealth channel has an ambiguous effect favouring the wealthy households only in the short run where the top 1% reaches the higher benefits. In the long run, the persistent decline of the Gini index reflects some gains at the bottom of the distribution supporting the idea that, differently from the US and UK, equity prices were not the main drivers of rising inequality in Italy. Overall, our evidence suggests that QE is associated with a decrease in Italian households' inequality although its economic size is modest.

The Euro area's experience with unconventional monetary policy may hold important policy implications for government policy choice. Future research could investigate the key role of fiscal and redistributive policies on inequality and the extent to which the monetary-fiscal mix in Italy has been inadequate. Greater reliance on fiscal policy would probably give better results and would certainly be easier to explain than changing the target for monetary policy.

wealth -- in shaping optimal policy prescriptions (Kaplan and Violante 2018). More specifically, an economy where income and wealth are very polarised in the hands of the rich is less reactive to monetary policy stimulus because the very rich are unlikely to boost their already high consumption, while the very poor are likely to be credit constrained due to their low income and wealth. Hence, the poor would not benefit much from the direct effects of easy monetary policy -- the possibility to borrow at cheaper rates -- but rather from its indirect effects through higher employment and better wages.

This paper investigates empirically how income inequality affects the transmission of monetary policy shocks in a panel of advanced economies, as well as across US states. Our results provide broad support for the idea that high inequality weakens monetary policy transmission, and hence provides empirical support to the findings of the recent theoretical literature on monetary policy in heterogeneous-agents models.