Title: How Vulnerable are European Households? Evidence from Microdata

Abstract: The cost-of-living crisis is eroding real incomes with the burden falling disproportionately on lower income households as they spend a larger proportion than average on food and energy and have therefore been relatively more affected by the recent sharp price increases of these items. Financial conditions have also tightened significantly as central banks in Europe have increased policy rates to tame inflation. These developments weigh on households' debt servicing capacity. Leveraged households are particularly vulnerable as the tightening of financial conditions has pushed up their debt servicing ratios sometimes beyond affordable levels after years of low borrowing costs and rising housing prices. Financially stretched households may be forced to cut back on essential spending, default on their debt obligations, or spend less on non-essentials fueling adverse macroeconomic feedback loops. While the European banking system as a whole appears well capitalized, a pronounced deterioration in the macroeconomic outlook could imply a renewed increase in credit risk which may weaken banks' balance sheets, amplifying the impact of the downturn. Growing policymaker concerns have led the European Systemic Risk Board to issue a general warning of rising systemic risks to financial stability in September 2022. At the same time, the current cost-of-living crisis has prompted many European governments to put in place measures to shield consumers from soaring food and energy prices. In the European Union (EU), the Commission presented new, targeted and exceptional measures under the cohesion policy framework to support vulnerable households in October. While many policy measures are being implemented, there is limited information on their cost-effectiveness to protect households.

Against this backdrop, the paper addresses the following questions: How vulnerable are European households to the rise in living costs and the tightening of financial conditions? What households are more likely to be adversely affected, and could this lead to rising consumption inequality? What might this vulnerability mean for (i) the macroeconomic outlook as financially stretched households cut back on consumption, and for (ii) the financial sector as overburdened borrowers are unable to service their debt? Given that the probability of tail-risk scenarios materializing has increased since the beginning of 2022, how is the vulnerability of European households likely to evolve under adverse macroeconomic scenarios? And how effective will announced policy measures be in addressing household vulnerabilities, supporting consumption, and preventing a wave of defaults?

Using microdata from the EU-SILC and the ECB Household Finance and Consumption surveys, we quantify the vulnerability of the household sector, estimate the share of overburdened households, *mortgage-at-risk*, *consumption-at-risk*, and quantify potential bank losses for twenty European economies. The paper uses simulation techniques to project a measure of households' overburden rate that adjusts for living conditions (including food and energy) under the baseline October 2022 IMF World Economic Outlook projections and a range of adverse scenarios over 2022-2023. Based on country-by-country logistic regressions, we forecast default rates on mortgages and other retail loans as a function of households' overburden rates controlling for macrofinancial conditions and the household income distribution. We map default rates into banks' balance sheet data drawing on the EU-wide Transparency Exercise and project bank capital ratios. Finally, we conduct a cost-benefit analysis to assess the effectiveness of announced policies in protecting affected households and supporting the real economy. In our framework, the cost of government support measures is driven by the scope of the measure (targeted vs broad), the type of measure (price caps vs cash transfers), targeted households' share of gross income, and their overall spending in essential consumption. The benefit of government policies is measured by the share of households saved from financial distress (financial stability measure), and the share of saved consumption (macroeconomic measure).

Preliminary results suggest that around 14 percent of European households are currently overburdened, with wide dispersion across countries. Under an adverse cost-of-living scenario, one out of four households could become overburdened, holding 30 percent of mortgage debt and accounting for one fifth of household consumption. Households in the bottom tercile of the income distribution could be severely affected, with the share of overburdened households climbing from 50 to over 70 percent across countries. While the impact on European banks is manageable on average, capital depletion could be significant in countries where households are more indebted, where adjustable interest rate mortgages are more prevalent, and where households spend a larger share of income on essential consumption. The materialization of cyclical risks in the residential real estate sector from rising mortgage rates could create further pressures on banks' capital position in countries with large mortgage books and vulnerable borrowers. Food and energy subsidies targeting low- and median-income households could save around 10 percent of households from financial distress under adverse conditions, and 7 percent of consumers at risk, with higher benefits for Eastern European economies. The paper shows that carefully calibrating policy support measures is critical to shield households, contain fiscal costs, protect the real economy, and safeguard financial stability.

Keywords: Cost-of-living crisis, household vulnerability, fiscal policy calibration, financial stability