Research Statement

Pascal Paul, September 2020

I am a macroeconomist working on monetary economics, financial economics, economic history, and applied econometrics. In my research, I aim to further our understanding of the effects of monetary policy, the connection between the financial sector and the macroeconomy, and econometric methods for identification in macroeconomics. My research is not tied to one particular approach but includes both theoretical models and empirical methods, as well as macroeconomic and microeconomic data. In a set of papers described below, I study how monetary policy affects asset prices (Paul, 2020*d*), household consumption (Holm, Paul and Tischbirek, 2020), bank-firm lending (Greenwald, Krainer and Paul, 2020), and determines bank profitability (Paul, 2020*a*). Two additional projects focus on the determinants of financial crises based on long-run historical data (Paul, 2020*b*) and how such evidence can be used to discipline macroeconomic models that incorporate financial crises (Paul, 2020*c*).

The time-varying effect of monetary on asset prices. Recent research finds that rapid increases in equity and house prices raise the likelihood and severity of financial crises (e.g., Paul, 2020*b*). To prevent such events, central banks could react to asset price booms by raising interest rates. But even if monetary policy is conducted in this way, it is unclear how much asset prices actually respond to a monetary tightening, especially in times of frenzy. In Paul (2020*d*), I develop a novel methodology to study such questions. The econometric identification approach I propose uses instruments as proxies for structural shocks within vector autoregressive (VAR) models. My method identifies the true relative impulse responses within a constant parameter VAR and can easily be extended to allow for time-varying coefficients. Based on this approach, I obtain empirical evidence on the response of output, inflation, and stock and house prices to monetary policy shocks for the U.S. since the late 1980s. I find that stock and house prices always decrease following a monetary tightening, but their response varies substantially over time. In particular, compared to output, the response of stock and house prices was particularly low before the Great Recession. Hence, attempts by the Federal Reserve to lean against the house price boom before the crisis may have been less effective.

The transmission of monetary policy under the microscope. There is a wide consensus that interest rate changes by central banks have an impact on aggregate consumption. However, several aspects of this link cannot be assessed based on macroeconomic aggregates alone and therefore they have remained in the dark for a long time: Through which channels are households predominantly affected by policy rate changes? Is there significant heterogeneity in their reactions? What is the role played by household portfolios and borrowing constraints? While these questions have received considerable attention in recent theoretical contributions, in particular based on Heterogeneous-Agent New Keynesian (HANK) models, empirical evidence has proved difficult to obtain. In recent research (Holm, Paul and Tischbirek, 2020), we use administrative tax data covering all individuals registered in Norway between 1996 and 2015 to shed light on the effects of monetary policy at the household level. We find that low-liquidity but also high-liquidity households show strong responses, interest rate changes faced by borrowers and savers feed into consumption, and indirect effects of monetary policy outweigh direct effects, albeit with a delay. Overall, the results support the importance of borrowing constraints, cash-flow channels, and heterogeneous effects of monetary policy.

The credit line channel. Aggregate bank lending to firms tends to expand following adverse macroeconomic shocks, such as the outbreak of COVID-19 or a monetary policy tightening. In Greenwald, Krainer and Paul (2020), we use loan-level supervisory data to explain this counterintuitive fact. We show that the aggregate response is almost entirely explained by large firms drawing on their credit lines. But funding stability for large firms may come at a cost for smaller, constrained firms which face crowding out of the credit market. We show that such an externality was in play during the early stages of the COVID-19 outbreak, when banks that experienced larger drawdowns of credit lines restricted their term lending supply by more. Using a structural model, we show that credit lines are necessary to reproduce the flow of credit toward less constrained firms after adverse shocks. While credit lines increase total credit growth, their redistributive effects can in fact exacerbate the fall in investment.

Banks, maturity transformation, and monetary policy. An inherent feature of financial intermediation is maturity transformation. Banks invest in long-term assets, funded by short-term liabilities. Due to this institutional characteristic, the typical textbook view is that banks are strongly exposed to interest rate risk and are highly sensitive to conventional monetary policy. However, recent research questions this view and argues instead that banks are not at all exposed to interest rate risk, rather they offload such risk to their creditors and borrowers. In Paul (2020*a*), I provide new evidence on banks' interest rate risk exposure for the United States. I show that (i) banks' net interest margins have historically comoved with term premia, (ii) their stock prices sharply fall in response to an increase in expected future short-term interest rates but rise if term premia increase, (iii) both of these responses are muted for nonbank equity but amplified for banks that engage more heavily in maturity transformation, and (iv) banks' net interest margins rise following term premium shocks, but fall in reaction to an increase in future expected short-term interest rates. Taken together, my results show that part of the aggregate interest rate risk remains with the banking sector.

Historical patterns of inequality and productivity around financial crises. The 2007-09 global financial crisis has been the defining event of economics in recent times, confronting economic research with challenging questions: Why do financial crises occur? Are they more likely to take place after particular macroeconomic developments? And, once a crisis breaks out, what determines the severity of the following recession? To understand the macroeconomic determinants of crises, previous research has mainly focused on developments closely related to financial markets. For example, rapid growth in credit, stock prices, and house prices are found to be robust early-warning indicators of crises. In contrast, in Paul (2020*b*), I consider changes originating in the real economy as drivers of financial instability. To this end, I assemble a novel data set of long-run measures of income inequality, productivity, and other macrofinancial indicators for advanced economies. I find that rising top income inequality and low productivity growth are robust predictors of crises, and their slow-moving trend components explain these relations. Moreover, recessions that are preceded by such developments are deeper than recessions without such ex-ante trends.

A macroeconomic model with occasional financial crises. Before the 2007–09 crisis, the workhorse macroeconomic models used by many central banks around the world largely excluded financial institutions and, therefore, did not account for the possibility of such events. Over the past decade, many advances have addressed these shortcomings. However, up to this point, a common approach to integrate financial

crises into macroeconomic models has not yet emerged. In Paul (2020*c*), I argue for applying a useful guiding principle: models that researchers use to understand financial crises should be able to replicate stylized facts gathered from historical data as in Paul (2020*b*). I focus on four empirical facts about financial crises: (1) crises are rare, (2) they occur out of credit booms, (3) they are severe macroeconomic events, and (4) they are not necessarily the result of large shocks. The model in Paul (2020*c*) reproduces these real-world regularities and illustrates how standard macroeconomic models can be extended to incorporate occasional financial crises. Such a framework provides a suitable laboratory for additional research that can help policymakers understand how to reduce the likelihood and severity of future crises.

References

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