

Research module: Quantitative Macroeconomic Dynamics – Shocks, Debt, and Policy

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Outline: This research module introduces students to quantitative models of short-run macroeconomic fluctuations. We will get to know examples of influential modern business cycle models as well as the numerical methods which are necessary to work with them. The tools introduced in this research module are used in central banks (e.g., ECB, Fed, Bundesbank), national governments (e.g., Ministry of Finance), and international organizations (e.g., European Commission, IMF, World Bank, OECD).

Specialization 1 (Gregor Boehl): The focus of the first specialization will lie on macroeconomic shocks and frictions. The students will develop a sound economic intuition on how the macroeconomy responds to policy innovations or external events. To sharpen this intuition, we rely on numerical simulations to study impulse-responses of dynamic New Keynesian models for several types of nominal and real frictions to associated economic shocks. To solve for the aggregate dynamics, we use nonlinear computational method as it is implemented in the EP package (<https://econpizza.readthedocs.io>). The package provides a generic framework to specify and simulate a wide range of dynamic general equilibrium models. If time permits, we analyse how the introduction of household heterogeneity changes the transmission of economic shocks.

Specialization 2 (Joachim Jungherr): This specialization will focus on the role of debt and credit markets in shaping macroeconomic fluctuations. The focus will lie on debt issued by firms (i.e., non-financial firms and financial intermediaries). We will learn empirical facts about debt and balance sheets in the economy and how they fluctuate over time. We will use the Modigliani-Miller theorem to understand under what circumstances credit markets are important for macroeconomic policy. We will proceed to work with quantitative incomplete market models in which credit markets shape macroeconomic fluctuations and the effects of macroeconomic policy (e.g., conventional and unconventional monetary policy).

Useful previous knowledge: Basic Module Macroeconomics, Advanced Module Dynamic Methods and Applications, Advanced Module Macroeconomics II.

Grading: Grading will be based on a final paper (60%), and presentations given in class (40%).