Research Seminar "Quantitative Economics"

Winter Term 2024/2025

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Abstract

Do Recessions Slow Technology Growth? Evidence from the Firm Level

(Michaela Elfsbacka Schmöller with Olga Goldfayn-Frank and Tobias Schmidt)

Abstract

Do recessions harm investment in technology and thus future aggregate supply? We provide novel evidence on this question using unique, granular data on innovation investment in R&D and diffusion from a representative survey of German firms. Our data allows to identify the crisis-induced innovation investment cuts with mean conditional reductions of-65% (R&D) and-70% (diffusion) relative to pre-crisis investment plans, concentrated in 20% and 25% of firms respectively. We estimate that a 1% cyclical output drop translates into a-0.3% fall in innovation investment. Firm-level financial constraints amplify the innovation reductions. Our findings suggest that short-term shocks affect aggregate supply over at least the medium term, challenging the exogenous technology assumption and the resulting dichotomy between business cycles and long-run growth in standard models of aggregate fluctuations. We show that demand shocks are among the main causes of the cyclical technology investment cuts, supporting the view that demand shocks can manifest as technology shocks. We formalize our micro-level results in a New Keynesian model with endogenous growth through investment in R&D and technological diffusion which determines cycle and trend jointly in general equilibrium.