Default Risk and Aggregate Fluctuations in an Economy with Production Heterogeneity (joint work with Aubhik Khan and Julia K. Thomas)

Tatsuo Senga (Keio University)

Abstract

We study aggregate fluctuations in an economy where firms have persistent differences in total factor productivities, capital and debt or financial assets. Investment is funded by retained earnings and non-contingent debt. Firms may default upon loans, and this risk leads to a unit cost of borrowing that rises with the level of debt and falls with the value of collateral. On average, larger firms, those with more collateral, have higher levels of investment than smaller firms with less collateral. Since large and small firms draw from the same productivity distribution, this implies an insufficient allocation of capital in small firms and thus reduces aggregate total factor productivity, capital and GDP. We consider business cycles driven by exogenous changes in total factor productivity and by credit shocks. The latter are financial shocks that worsen firms' cash on hand and reduce the fraction of collateral lenders can seize in the event of default. Our nonlinear loan rate schedules drive countercyclical default risk and exit. Because a negative productivity shock raises default probabilities, it leads to a modest reduction in the number of firms and a deterioration in the allocation of capital that amplifies the effect of the shock. The recession following a negative credit shock is qualitatively different from that following a productivity shock. A rise in default alongside a substantial fall in entry causes a large decline in the number of firms. Measured TFP falls for several periods, as do employment, investment and GDP. The recovery following a credit shock is gradual given slow recoveries in TFP, aggregate capital, and the measure of firms