

A model of aggregate excess reserves and the federal funds market

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Abstract:

This paper extends a small-scale DSGE model with an explicit banking sector by a new kind of financial friction. While the aggregate banking sector extends loans to goods-producing firms using a common Leontief production function, each individual bank faces idiosyncratic uncertainty about the volume of deposit inflows it actually receives from private households on the liability side of its balance sheet.

Before this uncertainty is resolved, the bank must commit to a level of bank-specific capital in order to satisfy a capital requirement condition that mimics the Basel II accord. Banks are thus subject to an occasionally binding liquidity constraint that can only be circumvented by borrowing and lending in a stylized market for federal funds.

The model predicts that, under certain conditions, access to the interbank market is largely irrelevant for the propagation of aggregate supply and demand shocks. At the same time, the federal funds market attenuates the impact of uncertainty shocks, i. e. an increase in the variance of deposit inflows, on the real economy.

Moreover, an economy that relies on interbank lending is more susceptible to a change in the accessibility of the market for federal funds.