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PRESS RELEASE

Asymmetric information in credit markets, bank leverage cycles and macroeconomic dynamics

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The ongoing financial crisis has drawn renewed attention to the relationship between bank capital and economic activity. In its Global Financial Stability Report, the IMF argues that the losses incurred by banks caused a contraction in credit supply which in turn contributed to the economic downturn in the United States and beyond. Several empirical studies find that negative shocks to the capital of banks reduce lending and economic activity. At the same time, there is a long line of evidence saying that investment spending is positively related to the net worth of non-financial firms.

This paper develops a model where both bank and firm leverage matter for the cost of external funds of firms by assuming frictions in the bank-depositor and in the bank-firm relationship as in Gertler and Karadi (2011) and Bernanke, Gertler and Girlchrist (1999, henceforth BGG), respectively. These frictions imply that the banks' ability to attract deposits and thus to expand loans today is positively related to its current net worth and its expected future earnings. If a shock lowers current bank net worth or future loan demand and thus future earnings, individual banks will have to cut loan supply today. Thus an expected banking sector de-leveraging increases the current cost of external finance.

The main results can be summarized as follows. First, as compared to a BGG-type model, the response of the economy both to a monetary tightening and an adverse productivity shock is amplified in the model developed in this paper, the former more so than the latter. Both shocks trigger a deleveraging process in the banking sector, implying that banks cut loan supply when the shocks occur, thus amplifying the increase in the cost of external finance relative to the BGG model.

Secondly, in a world with three standard shocks (productivity, monetary policy and government spending), the amplification provided by the moral hasard problem in the bank-depositor relationship allows the model to match the relative volatility with respect to GDP of the external finance premium, investment and other variables US data better than the BGG model. The model also performs well at matching the second moments of the bank capital ratio.

Thirdly, in the model developed in this paper, an adverse shock to entrepreneurial net worth causes an output contraction more than twice as big as in a BGG-type model. In line with the existing empirical evidence, an adverse shock to bank net worth causes a persistent decline of GDP. The shock decreases loan supply by individual banks and thus increases the cost of external finance. For a reasonably calibrated combination of both net worth shocks, the model economy enters a downturn of a persistence and magnitude similar to the ongoing "Great Recession" in the United States.

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