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Incentives and financial crises: Microfounded macroprudential regulation ☆

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ABSTRACT

We provide a micro-based rationale for macroprudential capital regulation of financial intermediaries (banks) by developing a model in which bankers can privately undertake a costly effort and reduce the probability of adverse shocks to their asset holdings that force liquidation (*deterioration risk*). A decline in the *fundamental risk* of assets ameliorates funding conditions, boosting the banks' ability to expand their balance sheets. In principle, a higher continuation value would improve incentives to put effort. However, the rise in asset demand and prices also increases the payoff in liquidation, eventually reducing the equilibrium optimal effort. Poor incentives impose socially inefficient liquidation and can be corrected through a regulatory capital requirement. We show that the requirement should be high when fundamental risk is low. Therefore, the model suggests a theoretical foundation for macroprudential regulation and the countercyclical capital buffer of Basel III.

1. Introduction

With the unfolding of the financial crisis that erupted in 2007, many analysts and policy-makers acknowledged the existence of several flaws in the regulatory environment. Microprudential regulatory frameworks, by focusing on the soundness of financial institutions taken in isolation and

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disregarding the effects of macroeconomic variables and exposures to common risk factors, were identified among the culprits of the crisis (Borio, 2008). In this scenario, a new macroprudential orientation of financial regulation has been a key direction of the G20 reform roadmap. General macroprudential principles have been transposed to the global regulatory framework by the Basel Committee. While the system-wide perspective cannot be circumscribed to it, most of the policy measures have focused on procyclicality. In particular, the Committee introduced countercyclical capital buffers above minimum capital requirements that banks are required to build-up in buoyant economic conditions. However, the debate on the functioning of macroprudential tools is still lively and answers to relevant questions are not yet conclusive. Indeed, some jurisdictions – including the EU – decided to go beyond the Basel countercyclical toolkit, introducing further and different macroprudential instruments. Above all, a general agreement on the underlying market failure and distortions that increase the likelihood and the severity of financial crises is still lacking.

This paper builds a simple theoretical setup to (i) examine the mutual interaction between micro and macro-variables to improve our understanding of the financial cycle and (ii) frame the macroprudential regulation of financial intermediaries as an effective policy tool to curb socially inefficient risk-taking. The model shows that the procyclicality of financial systems (Adrian and Shin, 2010b; Brunnermeier and Pedersen, 2009, for a survey see Panetta et al., 2009) may well be responsible for the distortion of incentives of managers of financial firms (henceforth, for the sake of brevity, bankers). The banker can reduce the probability of adverse shocks to asset holdings (*deterioration risk*) that force liquidation, by seeking sound risk management strategies (monitoring) that have a private cost. In good times, i.e. when the *fundamental risk* of assets is low and/or balance sheets are robust, banks face easy funding conditions. The large balance sheet capacity boosts asset demand and prices. The equilibrium market price of assets positively affects the payoff of the banker in the event of liquidation. Therefore, it emerges as a key driver of incentives and determines the overall deterioration risk in the economy. A distortion of incentives in good times is the building block of our model. We further expand the baseline framework and show that the distortion of incentives may generate a financial crisis, with plunging asset prices and a credit crunch. The rational expectation of buoyant asset prices fosters asset quality deterioration that ultimately forces many banks to liquidate at the same time. Our argument has direct policy implications in terms of financial regulation. These are the key questions and the main results of the paper:

Asset prices and risk-taking. Is there a specific role for asset prices in the build-up of risks along the expanding phase of the cycle? Fundamentals (e.g. funding conditions) and balance sheet variables of the leveraged financial sector determine the price of risky assets. In good times, the large balance-sheet capacity of banks boost the demand and the price of assets, so increasing the banker's income in liquidation and reducing the optimal effort in monitoring. One implication is that endogenous deterioration risk is high when the exogenous fundamental risk of assets is low.

Regulation and the cycle. New macroprudential rules envisage cycle-dependent capital regulation. Why should capital requirements evolve along the business cycle? Deterioration risk eventually imposes socially inefficient liquidation that can be corrected with a capital requirement that aligns bankers' incentives. The equilibrium capital requirement is macroprudential in nature as it considers the effects of macro variables on micro-behavior and is higher in good times. As a byproduct, microprudential rules that disregard those effects would perform poorly. In this sense, the model provides theoretical underpinnings to the countercyclical capital buffer presented in the Basel III proposal.

The rationale of macroprudential regulation. A passive capital buffer accumulation in good times or an active countercyclical policy?[1] We are of the view that the cycle is endogenous to the behavior of financial institutions (Borio et al., 2001). Our model explicitly illustrates how financial firms take

[1] The most pragmatic view advises one not to exaggerate the potential of macroprudential tools: they should only aim at ensuring that financial intermediaries accumulate sufficient resources in good times (when they are cheap and when risk is underestimated) that can be run-down in bad times with few or no repercussions on financial stability (for a survey, see Galati and Moessner, 2010).