Discussion

Comment on “Bubbles and capital flow volatility: Causes and risk management”

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Received 13 October 2005; accepted 26 October 2005

Available online 27 December 2005

This paper by Ricardo Caballero and Avrind Krishnamurthy (CK, 2006) presents a serious and original view of emerging market crises caused by randomly bursting rational bubbles. This is exacerbated by self-interested risk management that is not Pareto optimal because of a liquidity externality. They extend their very useful and influential approach to modeling finance in emerging markets with poor property rights. Their earlier approach, Caballero and Krishnamurthy (2001), assumes that due to poor property rights all lending must be collateralized, and that there are two types of collateral—domestic collateral and international collateral. Domestic collateral can be used only to collateralize loans to domestic lenders, while international collateral can be used to collateralize any loan. By assuming these two types of collateral, their previous work has identified liquidity crises that occur when only domestic collateral is available and domestic lenders are short of funds. The current paper further restricts borrowing by assuming that no domestic assets serve as collateral for domestic or foreign loans, and that the only collateral is foreign assets. There is no way to pledge any domestic cash flows or physical assets to anyone. As a result, if there is no bubble, only foreign assets can be used as store of value or collateral.

The authors consider a domestic asset that is a bubble and is used as a way to generate a domestic store of value. The asset is a bubble because it has no collateral or cash flow backing and has value only because it will have future resale value. If the bubble persisted forever, it would solve the problem of the missing domestic store of value.


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The strong assumption here is fully segmented markets, where no foreign capital enters because foreigners have no property rights to any domestic assets (even to bubbles) and absolutely no one has any property rights to cash flows. As a result, all lending requires collateral. It is assumed that two overlapping generations exist and that the young are endowed with foreign assets but cannot use them until date 2. Foreign assets are needed by the old, to serve as collateral to buy inputs from foreigners. In this framework, a store of value is required because even banks must borrow with collateral, and loans themselves do not serve as any form of collateral. The young have endowments of foreign assets to lend to banks, but holding a store of value as collateral is the only way to that a bank can promise them repayment.

The beneficial role of bubbles is both to provide missing collateral and, at the same time, to avoid dynamic inefficiency (where the economy’s growth exceeds the real rate of interest). It creates fake collateral whose market value exceeds the (zero) present value of its future cash flows. However, bubbles are bad (are not second best optimal) because it is assumed that they may burst with some exogenous probability, and it is demonstrated that banks do not choose optimal lending policy anticipating the risk of bursting. The authors show that there are ex-ante policies that can allow a store of value with smaller consequences of bursts and that there may be even better tax policies which allow a domestic store of value without any bubble.

The domestic store of value that works best is one that will not burst in value, and a sufficient condition is that it not be a bubble asset. One interpretation of this is that the asset is government debt backed by sufficient taxation authority (taxation of future cash flows) to allow future domestic cash flows to be pledged to investors. This removes the need for collateralized borrowing against these cash flows. It allows the possibility of borrowing against future cash flows with the help of the government. Another interpretation is that government debt is a bubble that will not burst because the government’s taxation authority need only be used off the equilibrium path. If the government can tax endowments away from any generation that loses faith in the bubble (the generation exogenously refuses to buy the bubble asset), the asset bubble will not lose its value at that point and will not burst. The exogenous burst of the bubble is a pure panic, not based on policies or any economic fundamentals, and taxation authority of the government can eliminate the consequences of the panic (and even eliminate the panic itself).

This is an interesting and reasonably realistic model. I would like to see more development of its detailed empirical implications. In particular, the description of the nature of crises is very similar to Diamond-Dybvig (1983), and its focus on property rights and borrowing more than the market value of the amount of future cash flows that can be pledged to anyone is similar to Diamond-Rajan (2001a, b, 2005). These banking models do not require bubbles or an economy growing faster than the world real interest rate, but they do require a banking system of significant scale.

Diamond-Dybvig (1983) has banks financing long-term illiquid assets with demand deposits due to a demand for liquidity. There is an exogenous threat of a run that can bring down the banking system. This can be prevented if the government has sufficient taxation authority to undo the fire sale losses cases by a run (tax back the gains from those who panic). The difference from the model in CK (2006) is that the taxation authority is used for deposit insurance or bank recapitalization rather than as backing of government debt.
An approach with similar implications to CK (2006) and to Diamond-Dybvig (1983) is developed in Diamond-Rajan (2001a, b, 2005). The major difference is that a crisis in the models of Diamond and Rajan is caused by amplification of fundamentals and not panics, and that the need then for short-term debt contracts that amplify financial shocks is due to poor local property rights or weak investor protection. Short-term deposits and the threat of runs is the way for banks to borrow more than the value of collateral (resale value of loans) and “create liquidity.” Short-term bank deposits are designed to set up a collective action problem and a bank run if the bank does not repay (see also Diamond (2004) for a related model of short-term debt issued by firms). This approach is not based on a co-ordination failure or panic, but has similar observable results. A crisis is exacerbated by short-term borrowing, and the destruction of the banking system in a crisis causes long-run effects (see Bernanke, 1983). The effects of a crisis depend on an observable contract structure in the emerging market economy.

I would like to see an extended description of the empirical implications of the CK (2006) model. The CK (2006) model predicts very high rates of return are offered to savers in emerging markets that do not have capital controls (to compensate them for the risk of a bubble burst). It also implies that bubbles are most likely when poor property rights cause a shortage of domestic collateral. The particular assumptions used also imply that bubbles burst exogenously, but this conclusion will go away if CK (2006) instead modeled beliefs about the bubble with incomplete common knowledge about uncertain growth or liquidity (as in Morris and Shin, 1998). CK (2006) presents an interesting and provocative view of bubbles in emerging markets, but more much work is needed to determine the importance of this view of bubbles.

References