

Comments

Ernesto Talvi: I found Gourinchas, Valdés, and Landerretche's work to be a nice paper that deals with an important topic. It is rich in material for theorists, provided that some of the stylized facts are proved right.

The paper has two main building blocks. First, it documents a very important set of stylized facts around lending boom episodes for a sample of ninety-one countries, including a subsample of nineteen Latin American countries, for the period 1990–96. A lending boom episode is defined as a period of excessive bank lending followed by a subsequent decline or reversal to normal levels. Second, it attempts to match the key stylized facts that emerge from the paper with the prevailing theories on the origins of lending booms. My comments are thus also divided into two parts, as I address each of these building blocks.

Stylized Facts

The paper characterizes the booms from three different angles: the size, duration, and temporal distribution of lending boom episodes; the behavior of key macroeconomic variables around lending boom episodes; and the likelihood that lending booms are followed by either a banking or a currency crisis. The main findings are the following:

—The lending boom phase (which the authors call the buildup phase) and the reversal (or ending) phase have approximately the same duration (about 2.5 years); this runs contrary to the widely held belief that lending boom episodes run a roller-coaster course, with a protracted boom phase followed by an abrupt reversal.

—Lending booms show a degree of bunching (temporal agglomeration), in that they were especially concentrated in the late 1970s to early 1980s and in the early 1990s. The authors speculate this is related to waves of financial liberalization rather than capital inflow surges.

—Lending boom episodes are associated with the following behavior of macroeconomic variables: an output and investment boom, with a subse-

quent contraction (although output contracts less than investment); a deterioration of the current account followed by a correction; an appreciation of the real exchange rate, with a subsequent depreciation; a decline in trend output growth throughout the lending boom episode; an increase in domestic real interest rates and a subsequent decline; a worsening of the fiscal situation during the boom phase; and a shortening of the maturity of external debt.

—Lending boom episodes increase the likelihood of a banking crisis relative to normal times (by 11 to 53 percent, depending on the threshold used to measure the boom), although the probability of actually experiencing a banking crisis after a lending boom is relatively low (between 10 and 14 percent). In other words, only a relatively small proportion of lending booms actually end in a banking crisis.

—With respect to Latin America, the likelihood of a banking crisis arising after a lending boom episode is actually three times larger than in normal times and is relatively high in absolute value (25 percent).

—Lending boom episodes increase the likelihood of a currency crisis relative to normal times (by approximately 33 percent), although the probability of actually experiencing a currency crisis after a lending boom episode is relatively low (7 percent).

—In Latin America, the likelihood of a currency crisis similarly increases by 34 percent after a lending boom episode, but the likelihood of a currency crisis actually occurring after a lending boom is three times higher than in normal times.

I have two comments concerning the size of lending booms. First, the only information that is systematically presented in the paper is the deviation with respect to a given threshold. It would be very useful if the authors were to characterize the average size of the lending boom phase (from $t-2$ to peak) as well as the average size of the reversal (from peak to $t+2$). It would also be interesting to know whether lending booms are followed by lending busts, that is, a period of abnormally low levels of bank lending. Second, the information that the paper presents on the size, duration, and temporal distribution of lending episodes for the whole sample should also be presented, in exactly the same way, for the subsample of Latin American countries to facilitate comparison in those dimensions.

With regard to the behavior of macroeconomic variables around lending boom episodes, the authors present both intuitive and puzzling results. Output, investment, the current account, and the real exchange rate all

appear to behave in the expected way. However, the decline of trend rate of growth throughout the lending boom episode, the deterioration of the fiscal position in the midst of a boom, the rise in domestic real interest rates when credit is abundant, and the shortening of the maturity of external debt are puzzling. The authors should provide some intuitive discussion on these apparently puzzling facts, after carefully checking whether the alleged facts are, in fact, facts. Is the decline in the trend growth rate related to the fact that credit booms are associated with low-return investments, as appears to be the case during commodity windfalls? Is the deterioration of the fiscal position in the midst of a boom related to the voracity effect à la Tornell and Lane?¹ Is the rise in real interest rates caused by sterilization attempts on the part of the monetary authority?

Finally, two observations with respect to the relation between lending booms and banking crises. First, it would be interesting to measure the proportion of banking crises that were preceded by a lending boom, for both the whole sample and the Latin American subsample. Even though only a small number of lending booms eventually end in a banking crisis, it might be the case that most banking crises are preceded by lending booms. If so, a lending boom should be considered potentially dangerous from a policy perspective, even if the number of lending booms that actually end in crisis is relatively small.

Second, since lending booms appear to make Latin America more crisis prone than the rest of the world, it is important to explore the origins of this contrasting behavior. One possible candidate is the size of the movements of some key macroeconomic variables around lending booms: the real exchange rate appreciation and increases in real interest rates appear to be much larger in Latin America than in the rest of the world, and the terms of trade appear to deteriorate significantly in the ending phase of a lending boom, relative to the rest of the world.

Matching Theory and Facts

The discussion of the different theories on the origin of lending booms has a few visible flaws. First, it leaves out one very important candidate for accounting for lending booms, namely, inflation stabilization (and the

1. Tornell and Lane (1998).

rapid remonetization of the economy that usually follows). Second, the matching of the stylized facts to the alternative theories is at best very superficial in order to take a position on which theory is the most relevant for explaining the facts.

Third, the authors miss an opportunity to actually test the relevance of alternative theories. In this respect, the fact that lending boom episodes tend to be concentrated in certain time periods should prove particularly helpful in narrowing down the possible stories that are consistent with the evidence. Financial liberalization waves, inflation stabilization clusters, and capital inflow surges are natural candidates that can simultaneously account for the main stylized facts and the occurrence of bunching. Furthermore, financial liberalizations, inflation stabilization programs, and capital inflow episodes are easy to date and to measure. Calculating the likelihood of experiencing a lending boom after financial liberalization (relative to normal times), the launching of an inflation stabilization program, or a surge in capital flows could therefore provide some clues on the relevance of alternative explanations.

Abhijit V. Banerjee: This is a very useful paper. As a profession, we do not reward enough people who take the trouble to put together a large body of purely descriptive evidence, and not surprisingly, there are always too many theories chasing too few facts. The large body of facts so clearly and carefully presented in this paper is a clear windfall for those of us working on the role of credit in macroeconomics.

The big question in all of this is, of course, what should one make of lending booms? In particular, do speed limits on lending offer an effective tool for avoiding booms? As I see it, there are three competing views on lending booms. On one side is the view that lending booms are part of the real business cycle—that they are simply a manifestation of the fact that productivity shocks create a need for the capital stock to grow faster than GDP over a period of time. The credit-to-GDP ratio therefore increases sharply, which is gradually moderated as the debt gets repaid and the extra investment stimulates faster GDP growth. Essentially, a boom must come to an end because the productivity shock only generates a one-time increase in the demand for capital.

At the other extreme is what I call the superfluous-credit view. The boom starts because of overlending that stems from moral hazard on the part of

either borrowers or lenders (loan pushing, in the latter case); it ends when the costs of overlending become manifest.

Between the two extremes are a set of theories in which there is usually a good reason for the boom to start (such as a productivity shock or an increase in the creditworthiness of the borrowers), but it still ends badly. I call this the mixed-blessing view. At the heart of such theories is the idea that extra credit increases the demand for some factor in the domestic economy that is in short supply. This factor could be a standard nontraded good such as real estate or skilled labor, or it could be the banking sector's capacity to manage lending or the government's capacity to manage the banking sector. The consequence is that the price of this factor goes up and less of it gets used per unit of lending: there is a real appreciation that squeezes profits, or the quality of the loans goes down, or the banking sector starts behaving irresponsibly. Any or all of these factors contribute to a hard landing. Lending booms, in this view, tend to be associated with large distortions in the allocation of resources, and they tend to end in tears.

The data that the authors have put together are useful for discriminating among these views; they also help to clarify which, if any, of the various versions of the hard-landing story are worth taking seriously. While both questions are important, my view (and perhaps the authors do not agree) is that the first objective is the more important one. If we accept the real business cycle view, speed limits would only interfere with the natural working of the market system. If, on the other hand, the extra capital is largely superfluous, speed limits look very attractive. Finally, if booms start for good reasons but end badly, there is an obvious trade-off: speed limits will eliminate not only the hard landing but also the benefits of the early inflow of capital. Perhaps, in the words of Alfred Tennyson, "'Tis better to have loved and lost / Than never to have loved at all." Perhaps not.

What do the data tell us? My sense is that the evidence is rather mixed in ways that I find confusing. The strongest fact seems to be that domestic interest rates are very high during lending booms. *Prima facie* this suggests that the economies that have lending booms are capital scarce, and this condition does not seem to be driven by a fall in savings—the consumption-to-GDP ratio seems to be below trend during booms. Moreover, output is slightly above trend during most of the boom. All this tends to argue for either the real business cycle view or the mixed-blessing school of thought. Within the class of mixed-blessing views, the evidence seems to indicate that while a boom does lead to real appreciation, it does not sig-

nificantly increase the probability of a banking crisis or a currency crisis (except if we were to use the absolute deviation criterion with the most stringent definition of a boom). Finally, the authors argue that lending booms are more or less symmetrical over time—booms do not end any faster than they start. This, too, seems to go against the view that lending booms end in a crisis. Although nothing is definitive, this seems to add up to a case for the real business cycle view. (It is also consistent with Aghion, Bacchetta, and Banerjee's view, which emphasizes the real appreciation generated by the lending boom.)¹

If we look at the evidence more closely, however, the results are much less clear-cut. The most disturbing fact seems to be that the growth rate is lower than trend for the entire length of the boom. The lending boom seems to start after the output boom has ended, which is consistent with a loan-pushing theory. This is reinforced by the specific case of Latin America: The fall in the growth rate associated with a boom is 1.4 percent in Latin America. Why is capital rushing into an economy that is almost entering a recession? On the other hand, the superfluous-capital view does not square with the high domestic interest rates. One possibility is that when domestic lenders stop lending in anticipation of a period of irresponsible borrowing, people turn to foreign lenders. This requires a particularly cynical view of foreign lenders, however.

The evidence of the absence of a crisis at the end of the boom is also questionable. The claim about the symmetry of the boom episode is perhaps overstated. Short-term borrowing increases sharply and asymmetrically at the end of the boom, and the international real interest rate also increases. In other words, while total lending does not fall dramatically, expensive short-term borrowing is rapidly replacing cheaper long-term borrowing, which is consistent with the view that the borrowers are increasingly desperate. The case of Latin America reinforces the suspicion that the real business cycle view does not tell the whole story: banking crises are much more likely in the region after a boom. The relation between booms and banking crises is almost nonexistent outside Latin America, however.

What does one make of all this? My guess is that there are really several different types of booms. Some booms result from an inflow of superfluous capital; in others, which may well be the normal case, the capital is necessary. Even among those in which the capital was initially useful, some lead to hard landings and others to a slow return to trend. Latin America

1. Aghion, Bacchetta, and Banerjee (1999a).

seems to have a higher-than-usual share of the unhappy endings, though I am not sure why this is the case.

To see if I am right, it would be useful to go back to the data. One could look in the data, for example, to find out if those booms that end in banking crises are clearly different from other booms. One could then ask whether the booms that end in crises can be identified before they start unwinding. Like most really good papers, then, this paper is a beginning. There is much more work to be done.

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