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Information sharing, credit booms, and financial stability: lessons for developing economies*

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Abstract

The global financial crisis has highlighted the vulnerability of financial systems and stressed the need for improving the management of financial vulnerability. The financial stability issue in low-income countries has received less attention in recent years, insofar as they have been less impacted by the global financial crisis than emerging economies. Guérineau and Léon (2016) investigated the determinants of financial fragility in advanced and developing countries, focusing on the interaction between credit booms and credit information sharing systems. The results showed that credit information sharing reduces financial fragility in both groups, but transmission channels are different. For advanced and emerging countries, credit information sharing reduces the likelihood of credit booms and mitigates their detrimental impact on financial fragility. For less developed countries, credit information sharing mainly has a direct effect by improving credit portfolio quality.

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Financial stability in developing countries

The global financial crisis has highlighted the vulnerability of financial systems. It has consequently stressed the need for improving the management of financial vulnerability. A number of studies have investigated this issue, mainly in the case of advanced and emerging countries. Several factors have been advanced as tools to reduce financial fragility. For instance, since the onset of the financial crisis, we have observed a rapid expansion of macro-prudential policies to complement existing tools to reduce both risk-taking of individual financial institutions and interdependence between them. Early empirical studies have indicated that these measures had relatively good efficiency in curbing housing price growth, bank leverage and credit growth.

The financial stability issue in low-income countries (LICs) has received less attention in recent years, insofar as they have been less impacted by the global financial crisis than emerging and advanced economies. The question of whether less developed economies are more vulnerable to financial crises than emerging and high income economies is ambiguous. Financial vulnerability depends on the balance between risk exposure and the capacity to deal with these risks. However, a better understanding of financial fragility mechanisms in LICs is crucial. First, financial vulnerability does exist. The experience of LICs shows that they could suffer sharp increases in non-performing loans and banking crises, and that the cost of banking crises is high[1], even if the banking sector is small. Second, the current dynamics of financial development in many LICs will, in parallel with its beneficial effects on access to financial services, increase the risk of financial instability, unless financial regulation is progressively adapting to this evolution. New risks arise from the increase in the relative size of the financial sector, from the diversification of financial products and from the deepening of domestic and international financial integration.

Until now, the main threat for financial stability in LICs has been an excessive growth of credit (credit boom/bubble) that leads to a jump of non-performing loans (NPLs), without an adequate increase in financial provisions for loan losses. The most frequent sequence is the following: (i) a strong increase in credits accompanied by a decrease in the quality of loan screening, (ii) with some delay, a strong increase of NPLs, (iii) a strong inertia of growth in NPLs when the NPL surge is identified. Indeed, even if the screening is tightened on new loans, the existing stock for old loans will induce an upward trend of NPLs for several years. The end of the NPL episode may be either a banking crisis (including bankruptcies and/or a restructuring of the banking system), or "only" a phase of writing off bad loans and a recapitalization of banks having suffered significant losses. In both cases, a credit fall after the NPL cycle is frequently observed.

A large number of studies have shown that excessive credit booms are one of the main drivers of financial crises. Many empirical works have shown that credit growth increases the probability of a banking crises. Recent studies have confirmed this fact using long-run data.[2] However, a credit boom does not necessarily induce a financial crisis. In addition, the larger and longer a boom is, the more likely that it ends badly. A credit boom may however reflect an improvement in investment opportunities and some episodes of strong credit growth correspond to a catch-up phenomenon[3], therefore other determinants of financial fragility must also be taken into account.

1. See Laeven and Valencia (2013)

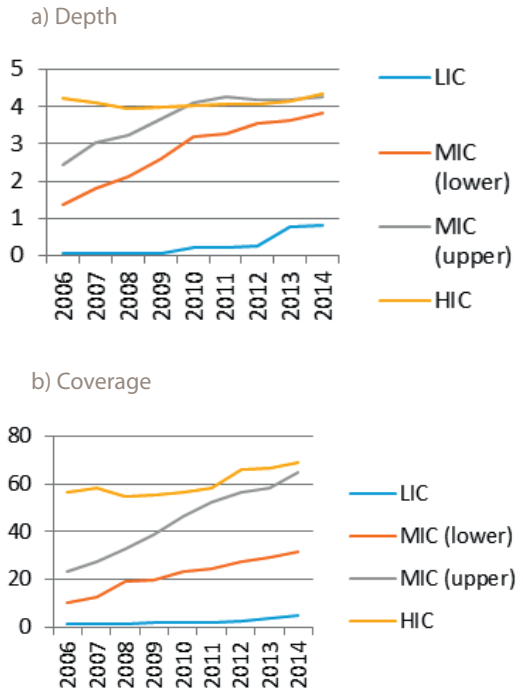
2. Among recent papers: Reinhart and Rogoff, 2009; Schularick and Taylor, 2012; Aikman et al., 2015

3. Dell'Ariccia et al. (2016), using data for 170 countries over the period 1970-2010, showed that only one in three credit boom episodes were followed by a crisis.

Credit information sharing and financial stability

In the last decade, financial systems have experienced a steady development of public credit registries (PCR) and private credit bureaus (PCB), which are two credit information sharing (CIS) institutions (see Figure 1). Both institutions provide information to lenders about borrowers to reduce information asymmetries and are expected to enhance access to credit. Such mechanisms tend to be particularly effective in expanding credit access in LICs.

Figure 1. Evolution of depth and coverage of information sharing, by groups of countries

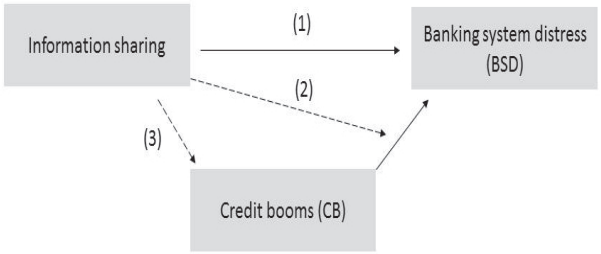


Recent works have highlighted that the development of CIS may also strengthen financial systems. The theoretical literature has explored three channels by which CIS reduces banking fragility. First, information sharing can reduce moral hazard and enhance the borrowers' incentives to repay. Borrowers repay their loans because they know that defaulters will be blacklisted, thus reducing external finance in the future. Second, CIS reduces adverse selection by improving bank's information about credit applicants. Third, CIS reduces the risk of over-borrowing as individual lenders can access information on the overall indebtedness of borrowers from all lending sources. While CIS reduces individual risks of default, it has ambiguous effects at the macro-level due to the composition effect. CIS may lead to greater access to credit for riskier borrowers and banks' portfolio quality can be reduced. Recent empirical papers have documented that greater information sharing leads to a reduced likelihood of financial crisis, suggesting that the composition effect is not large enough to increase financial fragility.[4]

CIS and credit booms

Guérineau and Léon (2016) have investigated the interaction between CIS, credit boom and financial fragility, with the aim to identify channels through which information sharing impacts financial fragility (see Figure 2). Banks in less developed countries operate in a context of institutional failures and high degree of opacity. Sharing information about borrowers could help them to cherry pick the best clients and avoid extending loans to bad borrowers. Therefore, channels through which information sharing act may differ across countries.

Figure 2. Information sharing, credit booms and financial fragility



4. See Houston et al. (2010) and Büyükkarabacak and Valev (2012).

While CIS may directly affect financial stability through its impact on portfolio quality, it can also attenuate the negative effect of credit booms and/or limit the occurrence of such booms (cf. dashed lines in Figure 1). First, CIS can mitigate the negative effect of credit booms. A rapid growth of credits can weaken the quality of credit screening. During credit booms, credit officers cannot devote sufficient time to correctly screen new projects and bad projects have a higher probability of being financed. The presence of efficient CIS institutions could attenuate the negative effect of credit booms with screening. In addition, credit booms often fuel a rapid rise in asset prices (real estate and equity bubbles). Since assets may be used as collateral, the price rise will itself help an acceleration of credit growth ("financial accelerator") and reinforce the deterioration of screening. The presence of information sharing mechanisms may allow banks to diversify their portfolio. This diversification can limit the increase of asset prices induced by rapid credit growth, and therefore limit the detrimental impact of such episodes. Second, CIS might affect the occurrence of credit booms, even if its effect is theoretically unknown. On the one hand, information sharing may curb credit growth by avoiding some customers borrowing from several banks. On the other hand, a reduction in the information asymmetries across banks may lead to an easing of lending standards and, in turn, an increase in the volume of lending (lending boom).

Methodology

In order to identify the impact of information sharing and its transmission channel, Guérineau and Léon (2016) built a dataset combining a bank-level and country-level database. The sample included 159 countries with 79 developing countries and 80 emerging and developed countries over the period 2008-2014. To study whether developing countries differ from other countries, two groups of countries were distinguished: countries with a GNI per capita below US$ 4,125 in 2014 (n=79, called developing countries) and countries[5] with a GNI per capita exceeding US$ 4,125 (n=80, called developed and emerging countries).

Financial fragility was assessed by scrutinizing annual changes in the ratio of NPL to total loans. Episodes of financial fragility were identified every time this ratio jumped by at least 3%. The experience of developing countries showed that financial systems were able to withstand for a long time moderate levels of NPLs without undergoing a crisis if bank capital structure (larger interest margins, higher equity ratios) was consistent with this level of NPLs. However, financial stability was threatened by a rapid increase in NPLs, which did not allow the financial structure to adapt, since the latter could only evolve slowly. For instance, the peak of the ratio of NPLs to loans in 2009 was a signal of the banking crisis in Nigeria, albeit the level of NPLs was moderate in previous years. This measure based on the NPL ratio variation enabled capturing all episodes of financial distress and not only the extreme ones (banking crises).

The development of CIS was assessed by the depth index and the coverage of PCRs and PCBs. The depth index was computed by Doing Business. The index ranges from 0 to 6, with higher values indicating the availability of more credit information. Doing Business also provides the coverage of CIS mechanisms. Credit bureau (or credit registry) coverage reports the number of individuals and firms listed in a credit bureau's (or registry's) database relative to the number of adults. The sum of the credit bureau coverage and credit registry coverage provides the total coverage of information sharing. A credit boom is defined as starting whenever a country experiences at least three consecutive years of positive growth in credit over GDP that averages more than 5%.

5. According to World Bank's classification, this cutoff separates countries into two groups: (i) low-income and lower-middle income countries and (ii) upper-middle income and high income countries.

Results and policy implications

Estimations confirmed findings from other papers by highlighting the stabilizing impact of CIS. The paper also documented that this result held for both less developed countries (GNI per capita below US$ 4,125) and other countries (advanced and emerging). In a second step, the complex relationships between CIS, credit booms and financial fragility were analyzed. Econometric estimations pointed out several important results: (i) information sharing development had a direct effect on financial stability, even when the impact of credit booms was taken into account; (ii) the higher the scope of information collected, the lower the likelihood to observe a credit boom (but the coverage of CIS did not matter); this effect was smaller and less significant in developing countries; (iii) CIS mitigated the detrimental effect of credit boom but this result held only for advanced and emerging countries; and (iv) credit booms were strong predictors of financial vulnerability, especially in advanced and emerging countries.

These results have several policy implications. First, credit growth is a key variable for macro-prudential policies in low and middle-income countries. Second, current efforts to develop CIS schemes should be strengthened, since the latter allow for credit expansion without excessive increase in the overall credit risk. Third, CIS has little impact on credit booms in developing countries, which justifies the extension of other tools – such as macro-prudential policies - to prevent excessive credit growth. Finally, extending the coverage of information sharing systems is not enough, since depth of information sharing is more efficient in avoiding credit booms.

References

- Aikman, D., Haldane, A. G. and Nelson, B. D. (2015), "Curbing the credit cycle", *The Economic Journal*, 125, p.1072–1109.
- Büyükkarabacak, B. and Valev, N. T. (2012), "Credit information sharing and banking crises: An empirical investigation", *Journal of Macroeconomics*, 34, p.1247-1256.
- Dell'Ariccia, G., Igan, D., Laeaven, L. and Tong, H. (2016), "Credit booms and macrofinancial stability", *Economic Policy,* X , p. 299-357.
- Guérineau, S. and Léon, F. (2016), "Information sharing, credit booms, and financial stability", Working paper, link to the Project website.
- Houston, J. F., Lin, C., Lin, P. and Ma, Y. (2010), "Creditor rights, information sharing, and bank risk taking", *Journal of Financial Economics*, 96, p.485–512.
- Laeven, L. and Valencia, F. (2013), "Systemic banking crises database", International Monetary Fund (IMF) *Economic Review*, 61, p.225-270.
- Reinhart, C. M. and Rogoff, K.S. (2009), *This time is different: eight centuries of financial folly*, Princeton, NJ: Princeton University Press.
- Schularick, M. and Taylor, A., (2012), "Credit booms gone bust: monetary policy, leverage cycles and financial crises, 1870–2008", *American Economic Review*, 102(2), p.1029–1061.

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