THE DETERMINANTS OF BANKING SYSTEM VULNERABILITY IN THE REPUBLIC OF MOLDOVA

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Abstract

A banking system is more vulnerable when there are felt more negative effects on this as a consequence of the global financial crisis events. In the context of the objective of enhancing financial stability and, in particular, limiting the likelihood of failure of the banking system it is useful to verify how the main characteristics which play a role for banking system vulnerability behaved in the case of the Republic of Moldova: system's liquidity, capitalization, competition, diversification, presence of foreign banks, and wholesale funding. In order to determine how hard was hit the banking system of Moldova by the recent financial crisis in the article are analyzed quantitative and qualitative the above mentioned characteristics and identified the crisis effects on them.

Keywords: financial crisis, banking system, liquidity, capitalization, competition, diversification, foreign banks, wholesale funding

JEL Classification: G01, G21

1. Introduction

The globalization of banking activity determines that shocks affecting a particular bank or country can now affect not only the local real economy but also the financial system and real economy in other countries. Thus the banking systems are more vulnerable to shocks and to contagion now then ever. This contagion effect was felt the most at the beginning of the financial crisis (2007-2009), which started with the bursting of the US housing bubble and the subsequent increase in subprime mortgage loan default rates as triggering the global financial crisis. The critical turning point was when the US government refused to save the financial services firm Lehman Brothers from its collapse on September 15th, 2008. This bankruptcy shocked market confidence and caused financial panic.

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The effects of the crisis rippled further throughout the highly interconnected and overleveraged global financial system. In the months thereafter, what started as liquidity problems transformed into greater solvency concerns about important global financial institutions (Claessens et al., 2010). Eventually, also consumers and firms faced a credit stop, leading to falls in consumption and investment and a real sector slowdown in the US and Western Europe. Thus a systemic economic crisis was born.

Later the crisis has spread to the developing countries through the holding by developing country banks of the same toxic assets that troubled Western banks' balance sheets, or through investments in foreign financial institutions that held such assets. Direct contagion was however limited in most developing countries, due to modest foreign bank penetration (with the exception of CEE countries) and low financial sector complexity. As a result, emerging and other developing economies were largely insulated from the crisis for some months, in part explaining initial optimism about decoupling. The consequences of the crisis for these countries only became noticeable with a lag, from September 2008 onwards. Most analyses (Dooley and Hutchison, 2009) identify four, more *indirect channels of transmission* as most important: trade, private capital flows, remittances and international bilateral aid. Republic of Moldova's economy was affected through two indirect channels: trade and remittances. The downturn of these two variables due to the worsening of the economic situation in the country has worsened the borrowers' financial situation which damages in its turn the banking system.

The methodological base of this research includes in particular qualitative and quantitative analysis of *characteristics* proposed by Degryse (2013) which play a role for banking system fragility: system's liquidity, capitalization, competition, diversification, presence of foreign banks, and wholesale funding. In order to determine how hard was hit the banking system of Moldova by the recent financial crisis it is useful to verify the relation between the above mentioned *characteristics* and the crisis effects, and to detect in this way the main channels of crisis impact.

2. The characteristics of Moldovan banking system vulnerability

The financial sector of the Republic of Moldova is dominated by the banking system, which accounted for 93 % of total financial assets and 96 % of total loans provided by the financial sector at the end of 2012. The local banking system has a low degree of connectivity to European and world banking system due to a very low presence of international banks on the market[1], which has determined *no direct contagion* within the last financial crises. The effects of the crises were felt indirectly by the banks, through the channel of remittances and foreign trade, which have diminished substantially as a result of economic decline in Europe. The decline of private consumption in the euro area has contributed to the decrease in Moldovan exports to EU and of the volume of remittances in 2012. Thus, the general effect of the financial crises on the Moldovan banking system was felt *on the banks' asset side*. The mentioned tendencies have negatively influenced creditworthiness of Moldovan borrowers and respectively the quality of local banks' loan portfolios. There are also some structural shortages which increase the fragility of the local banking system.

Taking into consideration the *characteristics* of banking system fragility proposed, the following effects of the financial crisis on them were indentified:

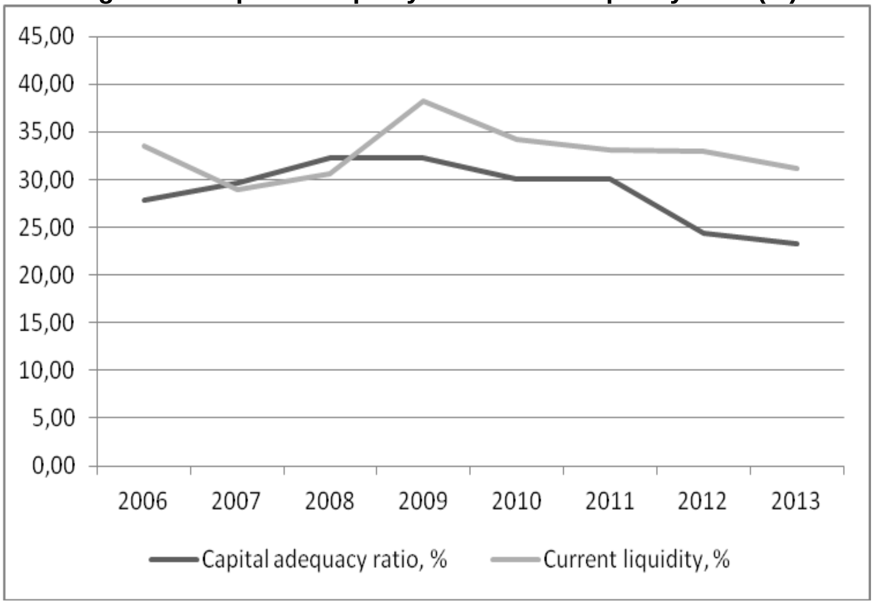
a. Capitalization and liquidity

A higher *capital base* provides a cushion against insolvency and helps in reducing possible contagion effects from individual bank failures in the same country or region. The *liquidity* on a bank's balance sheet serves as a first line of defence against liquidity shocks and enhances the stability of the domestic banking system. The average capital adequacy and liquidity ratio of the Moldova's banking system recorded for 2006-2013 indicates a high degree of banks safety and the potential to perform risky operations without affecting the capital (figure 1). Among countries from Eastern Partnership and some EU countries with similar size

[1] *There are only 4 banks with 100% foreign capital of 14 commercial banks operating in the local banking market.*

and economic problems, Moldova has the highest level of the capitalization and liquidity[2].

Figure 1 - Capital adequacy and current liquidity ratio (%)



Source: National Bank of Moldova database, 2006-2013

Nevertheless these indicators dropped slowly after 2009. Thus the effects of the global financial crisis were felt by the Moldovan banking system, even if the capital and liquidity ratios were significantly higher then the Basel requirements and the values required by National Bank of Moldova[3]. The studies of Degryse (2013) suggest that increases in capital do have an effect in reducing bank fragility but only when capital levels are higher than a threshold of around 7 %. Taking into consideration higher values of capital and liquidity ratios in Moldova I could assume that the banking system is relatively resilient to the crisis.

[2] *World Bank and IMF data base, Financial Soundness Indicators tables 2009-2013*

[3] *The minimum capital adequacy ratio established by National Bank of Moldova is 16% (from June 2012), until then it was 12%. The minimum current liquidity ratio is 20%.*

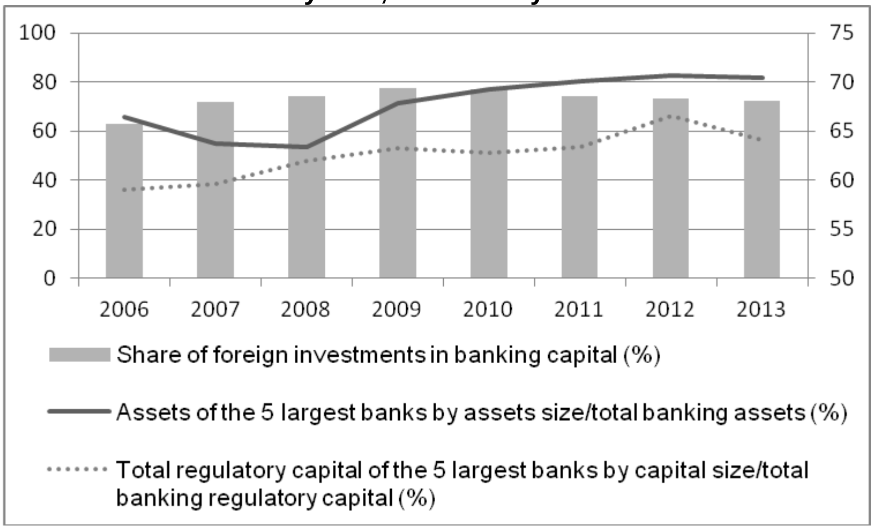
b. Competition, concentration and presence of foreign banks

Existing cross-country studies (Demirguc-Kunt and Levine, 2005, OECD, 2010) focusing on systemic stability find a positive effect of both *competition and concentration* on stability. As the study suggests, the positive effect of concentration on stability is likely to depend on better possibilities for larger banks to diversify risk. The main findings focusing on systemic stability are:

- Bank concentration, is (robustly) negatively correlated with financial crises. That is, more concentrated banking systems are less vulnerable to systemic banking crises are those systems (OECD, 2010). There are suggestive evidences (Demirguc-Kunt and Levine, 2005) that concentrated banking systems tend to have larger, better-diversified banks, which may help account for the positive link between concentration and stability.
- The likelihood of a financial crisis is lower in countries where regulation allows more entry, foreign ownership and a wider range of activities, and where the institutional conditions stimulate competition. The *presence of foreign banks* in a region may impact the fragility of the regional banking system in different ways. On the one hand, a greater foreign bank presence may lead to greater banking efficiency and competition in the domestic financial system. On the other hand, foreign banks may provide a channel for cross-border contagion when they transmit shocks from one region to another. Empirical studies have shown that by improving overall operating efficiency, foreign entry helps create the conditions for better financial intermediation and long-term growth (Claessens et al., 2000).

Concentration ratios of the Moldovan banking system range between 60 and 70 per cent for the largest five banks in the system (figure 2) and suggest that Moldova has a moderately competitive system with oligopoly tendencies.

Figure 2 - Structural indicators of the Republic of Moldova's banking system, end of the year



Source: National Bank of Moldova data base, 2006-2013

The graphs suggest that the level of concentration of the local banking system have slowly increased after 2008, which in accordance with the findings of Demirguc-Kunt and Levine (2005) has lead to a decreasing of the system's vulnerability. It is also a result of the orientation of the banks' clients toward the biggest banks of the system with higher visibility. After 2008, two small banks from sixteen have been hit hard by the crisis and became insolvent. It might be concluded that in case of the Republic of Moldova, as in case of Canada and Australia, a more concentrated financial system is more resilient to financial distress, and the biggest banks has bigger capacity to face the risks due to higher capitalization and liquidity.

Regarding the foreign ownership aspect, while foreign participation is considerable (share of foreign investments in banks' capital recorded at the end of 2013 was 72,2 %), the majority of foreign holdings in Republic of Moldova belong to investors that are not internationally highly-rated financial institutions, with a significant percentage of the owners being residents in offshore centres. While those owners who have more than a 5 % stake in a bank have been mostly found to be fit and proper, the ability and willingness of such owners to provide knowhow and capital or liquidity support is not obvious. On the other hand the low presence of foreign banks on the local banking market has protected it from the contagious effects of the crisis.

The *structural vulnerabilities* of the Moldovan banking system are the following:

(i) Uncertainties in the ownership structure still remain vulnerability despite considerable efforts of the NBM[4]. The process of clarifying the ultimate beneficial owners has not been completed. This raises concerns in relation to large exposures, connected lending, and loan concentration, and in establishing whether the owner can provide contingency funds in case of a bank run or other stress situations.

(ii) *Foreign strategic investors*[5] *own less than 20 % of the banking sector's assets.* The investments of first-tier banks in Moldova are welcome. The main arguments for this are: the implementation of highly efficient risk management practices within the local banking system and the injection of long term financial resources in the Moldovan economy. The supervisors should continue to exert pressure on the banks to consolidate ownership in individual banks through strategic investors.

c. Funding structure

The recent financial crisis has shown that *banks' funding structure* is important to their resilience. Banks can finance themselves with both depository funding and *wholesale funding* (i.e. funding from other banks, money market funds, corporate treasuries and other non-bank investors) relying mostly on wholesale funding have been severely affected by the crisis. Banks in Australia and Canada, for example, have been very resilient to the crisis because they have relied mostly on depository

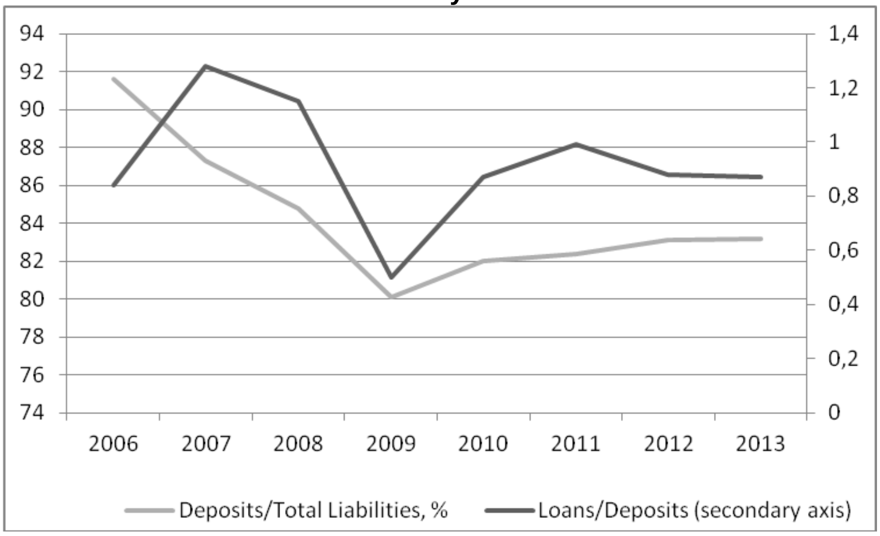
[4] *The threshold for significant shareholding was reduced to 5% from the previous 10%. Banks are obliged to submit information on their shareholders exceeding this limit. In case of noncompliance, the NBM limits the operations of the banks that do not support the enforcement of the regulation. In addition, the NBM requires that information be provided on shareholders with holdings between 1-5%. This requirement attempts to prevent connected parties from circumventing the regulation by splitting holdings into portions not exceeding 5%.*

[5] *BC „Mobiasbancă – Groupe Société Générale" S.A., B.C. "EXIMBANK-Gruppo Veneto Banca" S.A., B.C. ProCredit Bank S.A., BCR Chişinău S.A.*

funding, much of which came from retail sources such as households (OECD, 2010). Reliance on non-core deposits as a funding source, wholesale funding, could prove to be a more volatile source of funding that may accentuate regional banking fragility.

Moldovan banks demonstrate a high level of resilience to the crisis due to their *funding structure*. They finance themselves with both depository funding and wholesale funding, but they rely mostly on depository funding. Deposits to liabilities ratio reached the amount of 85,4 % at the end of 2013, much of which came from retail sources (figure 3).

Figure 3 - Funding structure of the Moldova's banking system, end of the year



Source: National Bank of Moldova data base, 2006-2013

It was recorded a sudden drop of deposits to liabilities ratio in 2009, as a result of remittances' and trade revenues decreasing. Another indicator - loans to deposits ratio - has recorded a sudden drop in 2007 till 2009, and still remains at a low level. These tendencies suggest that Moldovan banks have a strong preference for maintaining liquidity during the financial crisis. This is mostly due to the uncertain macroeconomic outlook and the recent history of banking sector instability.

However, the intermediation function of Moldovan commercial banks is undermined: although the level of liquidity in the system is one of the largest in the region they are very cautious in granting loans. The central issue of undermining is the mutual crisis of confidence: of the individuals and companies towards banks, and of commercial banks towards potential borrowers. It explains the conservative approach of local banks risk management, the reluctance in their lending activity and the maintenance of a high level of liquidity. This conservative approach has become even more acute during the recent economic crisis. It reveals that the lack of resources is not the essential issue of passive lending, and the high level of liquidity may be a consequence of this reluctance to credit activity.

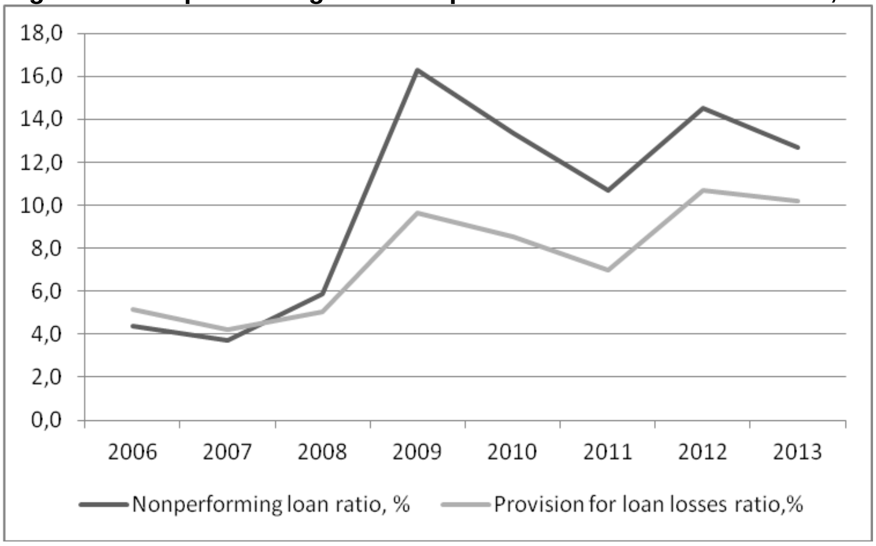
d. Diversification

Whether diversification in banking activities leads to financial stability or increase the vulnerability is a question addressed in many research studies (Stiroh, 2006, Baele, De Jonghe and Vander Vennet, 2007, Laeven and Levine, 2007, Schmid and Walter, 2009). Various financial innovations were conceived in the early 2000s as ways to improve risk sharing and risk management. However, they led to increased leverage and risk taking. Banks introduced a wide range of new instruments to transfer credit risk. Initially, these instruments allowed banks to gain very large spreads. Then, they substantially decreased due to global competition involving not only banks but also other financial institutions. De Jonghe (2010) finds that banking system fragility, aggravates when a bank engages in non traditional activities. Since interest income is less risky than other revenue streams, it is argued that specialization in traditional activities result in lower systemic banking risk. It is theoretically argued that even though diversification may reduce risk of the individual bank, from the financial system’s point of view it may increase the likelihood of systemic crisis as diversifying banks become more similar. In case of the Republic of Moldova, banks do not use such a wide range of financial innovations as the banks from developed countries. These preferences for traditional activities that generate incomes have contributed to a higher level of resilience during the recent financial crisis. The level of diversification, determined by the ratio of loans to total assets, has recorded a high level 62,3 % in 2012, demonstrating the Moldovan banks’ focus on traditional loan-making activities.

e. Others sides of vulnerability

Vulnerabilities also could arise *on the banks' asset side*. The worsening of the economic situation due to the crisis in the country (GDP has decreased in 2008 by 0,8 %) has worsened the borrowers' financial situation which damages in its turn the banking system. Thus a high level of bad loans (12,7 % in 2013) became an alarming feature of the domestic banking sector (figure 4).

Figure 4 - Nonperforming loan and provision for loan losses ratio, %

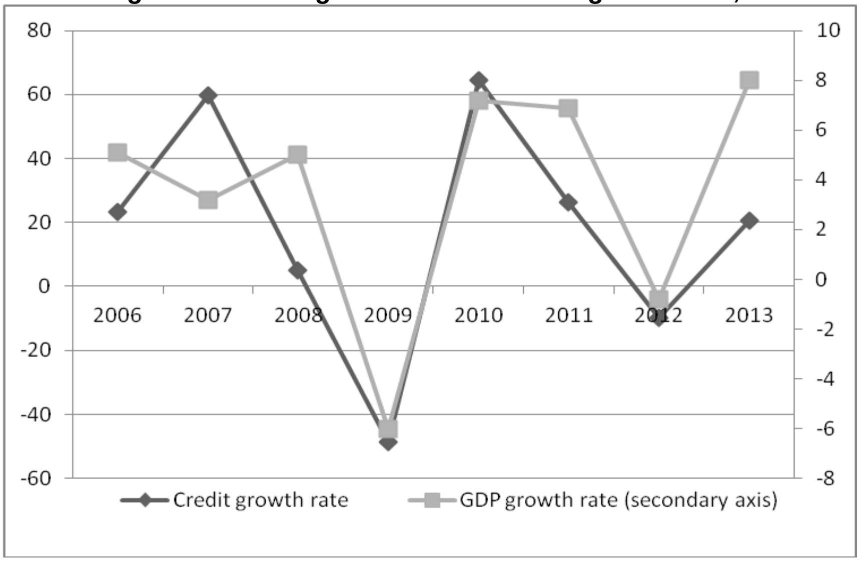


Source: National Bank of Moldova data base, 2006-2013

Economic crisis in 2009 caused a significant increase in non-performing loans from 5,9 % in 2008 to 16,3 % in 2009. Sudden increase of credit risk during this period led banks to restrict lending and to significantly increase the allowances for loan losses. With few exceptions, the trend of deterioration in loan quality continued to be a common feature for the European banking market in 2012 due to sovereign debt crisis.

In addition to the mentioned above characteristics of the banking system vulnerability to crisis, Moldovan banking system is *highly sensitive* to macroeconomic changes and expectations, showing a *pro-cyclical character*. Given the pro-cyclical nature of the banking system, relatively favourable macroeconomic situation in Moldova recorded in 2013 was fully reflected in increased banking credit activity (figure 5). While this credit growth is from a very low economic base, possibly reflecting catch-up growth, a continued increase will require careful attention to pre-empt deterioration in banks' credit portfolios.

Figure 5 - Credit growth rate and GDP growth rate, %



Source: National Bank of Moldova data base, 2006-2013

The danger is now that the banks' internal risk management systems are not good enough to pre-empt nonperforming lending. In this context, it would be useful for the NBM to develop an *early warning system* that would signal any emerging macro prudential risks to the financial system.

Another characteristic of the Moldovan economy which increases the vulnerability of the banking system is the dependence on remittances. It is one of the highest in the world (24,5 % of GDP), and enhances the financial system vulnerability to potential volatility in these inflows. For 2012, Moldova ranks the fifth, in the world (World Bank, 2013). Thus, the dependence on the economic conditions of the main destinations for Moldovan emigrants (Russia and the EU) could influence significantly the local banking system. Should these conditions worsen, or enforcement of immigration and labour laws in those countries tightened, the inflow of remittances may slow down considerably. This would put the exchange rate under pressure and diminish the availability of financial resources for the financial sector. It could also increase credit risk, as part of bank lending is based on the borrowers earning/receiving remittances.

3. Conclusions

The main conclusions of the article in the context of verifying how the main characteristics of the banking system vulnerability have behaved in the case of the Republic of Moldova are the following:

- Taking into consideration higher values of capitalization and liquidity of the banking system in Moldova the assumption is that it is relatively resilient to the crisis.
- The level of concentration of the local banking system have slowly increased after 2008, which in accordance with the findings has lead to a decreasing of the Moldovan banking system's vulnerability.
- The majority of foreign holdings in Republic of Moldova's banks belong to investors that are not internationally highly-rated financial institutions, with a significant percentage of the owners being residents in offshore centers. As e result the low presence of foreign banks on the local banking market has protected it from the contagious effects of the crisis.
- Moldovan banks demonstrate a high level of resilience to the crisis due to their funding structure.
- In case of the Republic of Moldova, banks do not use such a wide range of financial innovations as the banks from developed countries. The banks' preferences for traditional activities that generate incomes have contributed to a higher level of resilience during the recent financial crisis.
- Economic crisis has caused a significant increase in non-performing loans. Sudden increase of credit risk during this period led banks to restrict lending and to significantly increase the allowances for loan losses.
- Moldovan banking system is highly sensitive to macroeconomic changes and expectations, showing a pro-cyclical character.

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An appropriate institutional structure is critical for preventing banking vulnerability in Moldova and for reducing their undesirable effects if they should occur. NBM has made progress in developing and implementing a basic stress testing toolkit, although the lack of capacity to change stress testing scenarios to accommodate newly emerging risk factors, is vulnerability. More work is needed to identify additional risk factors and properly assess credit and liquidity risks. In this context, it would be useful for the NBM to develop an early warning system that would signal any emerging macro prudential risks to the financial system.

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