

## IMF Statistics Department Seminar

### Casting Light on Shadow Banking: Data Needs for Financial Stability

September 23, 2011 (1.30pm-3:00pm)

Speaker:

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The Financial Stability Board has recently described the *shadow banking system* as those credit intermediation institutions and activities outside the regular banking system, where credit intermediation takes place in an environment where prudential regulatory standards and supervisory oversight are either not applied or are applied to a materially lesser or different degree than is the case for regular banks engaging in similar activities.<sup>1,2</sup>

Colombia's case does not fit the definition of *shadow banking* mainly because regulation effectively limits credit intermediation activities to banking institutions (i.e. banks, financial corporations and commercial financial corporations). Non-banking institutions, referred to locally as Financial Services Institutions (i.e. broker-dealer firms<sup>3</sup>, investment funds, pension funds, and special official institutions), are focused on the provision of broker-dealer and asset management services.

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<sup>1</sup> Financial Stability Board, "Shadow banking: scoping the issues", April, 2011. This document provides a narrower definition: "a system of credit intermediation that involves entities and activities outside the regular banking system, and raises (i) systemic risk concerns, in particular by maturity/liquidity transformation, leverage and flawed credit risk transfer, and/or (ii) regulatory arbitrage concerns."

<sup>2</sup> Such differences in prudential regulatory standards and supervisory oversight may be the result of financial institutions (i) not being regulated and supervised by the same agency –or agencies–, or (ii) receiving unequal regulatory and supervisory prudential considerations regarding their activities, even when regulated by the same agency –or agencies.

<sup>3</sup> Broker-dealer firms in the Colombian financial system trade securities and manage assets for its own account and/or on behalf of its customers. Local regulation requires broker-dealer firms to report and manage their own-account and third-party portfolios separately; besides customer's portfolios segregation, broker-dealer firms' usage of customer's assets as collateral is restricted. This regulation also applies for other non-banking institutions providing asset management services.

In line with the customary practice of financial authorities around the world, credit intermediation activities and institutions have been the focus of regulation and supervision in Colombia. This has been supported by the historical prevalence of banking-type crises in which large bank runs were the main source of concern and the foremost objective of financial authorities when designing and implementing financial regulation and supervision (e.g. last-resort lending or deposit insurance); this corresponds to the customary focus on *too-big-to-fail* institutions.

However, the most recent episodes of distress in Colombia's financial system have been characterized by market runs in which local sovereign debt and stock market liquidity vanished. During such periods of financial disorder, non-banking firms (i.e. broker-dealer firms and investment funds) have emerged as systemically relevant institutions and been granted access to the central bank's liquidity, as has been the case in the latest US crisis.

Therefore, although broker-dealer firms and mutual funds (i.e. the most active Financial Services Institutions) are not the most important local financial institutions because of their size, some of them play a major role for financial markets, especially because of their contribution to the connectedness of the large-value payment system and to their brokerage activities within the fixed income and equity markets. In what follows, I will focus on what is nowadays commonly referred to as the *too-connected-to-fail* criteria for financial institutions.

Despite the fact that Colombian non-banking institutions are effectively restricted to non-intermediation activities, they should be considered as posing risks to the financial system, but not under the *shadow banking* category. In order to assess non-banking institutions systemic importance, the *too-connected-to-fail* approach to systemic importance weights some broker-dealer firms' significant contribution to the efficient and safe functioning of the large-value payment system. Their connectedness and leverage further stresses their key role in local market's financial stability.

Implementing the *too-connected-to-fail* as a supplementary approach to systemic importance relies on non-traditional data sources. Unlike the balance sheet-based assessment of size under the *too-big-to-fail* approach (e.g. volume of assets under management, volume of deposits and money market borrowing), a comprehensive assessment of systemic importance requires using information that enables us to recognize that a financial institution might be systemically important because other market participants rely on the continued provision of its services. Moreover, the *too-connected-to-fail* approach to systemic risk also requires designing new metrics because standard banking quantitative assessments such as solvency ratios and

capital adequacy may be ineffective when applied to non-banking institutions or non-intermediation activities.

Such information may be available to financial authorities when shifting from institution-centric to systemic approaches, where financial institutions' behavior and dynamics within the system become apparent. This systemic approach may be obtained when supplementing financial institutions' traditional balance sheet data with information from financial infrastructures such as large-value payment systems and central counterparties. Using financial infrastructure data may be convenient due to the following advantages:

- ✓ Balance sheet data are presented at an aggregate level; it is difficult to identify financial exposures by counterparty for all participating financial institutions. Financial infrastructure data are particularly dynamic and granular (i.e. originator, destination, value) and cover all transactions involving the money, equity, foreign exchange, derivatives and securities markets.
- ✓ Balance sheet data are insufficient to measure, analyze and understand the numerous activities and services provided by non-financial institutions, especially when dealing with increasingly complex and obscure financial products. Financial infrastructure data on financial institutions' transactions may help identify the type, volume and risk profile of the activities and services provided by each type of institution, even at the firm level;
- ✓ It is not clear whether off-balance positions are being captured or not when using claims, whilst payment, clearing and settlement data comprise all transactions between the system's participants;
- ✓ Failure or insolvency are not the only sources of systemic shocks. Mere failure-to-pay or non-payment of transactions can gridlock the entire financial system<sup>4</sup>;
- ✓ Unlike claims or balance sheet positions, relying on payments allows liquidity to be considered as a key factor in systemic risk;

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<sup>4</sup> Kodres, L., "The Road to Re-Regulation: Repainting the Center Line and Erecting more Guardrails", The World Bank and Banco de España International Conference: "Reforming Financial Regulation and Supervision: Going Back to Basics", Madrid, June 15, 2009.

- ✓ Central banks and other financial authorities are usually involved in financial infrastructure management or oversight, which facilitates information gathering.<sup>5</sup>

It is important to emphasize that infrastructure data are by no means a substitute for balance sheet information. Combining both data sources provides an inclusive portrait of the relevance of banking and non-banking institutions, where firm-centric (e.g. balance sheet data) and system-wide (i.e. financial infrastructures such as the payment systems or central counterparties) information would allow for a macro-prudential approach to systemic risk. This combination of data sources could provide useful information for effectively measuring *size*, *connectedness* and *substitutability*, which are suggested by IMF/BIS/FSB<sup>6</sup> as the main criteria for effectively assessing the direct and indirect channels that relate systemic importance to its potentially large negative impact on the financial system and the real economy.<sup>7</sup>

Colombia's experience with combining both –balance sheet and the large-value payment system- data has allowed the Central Bank to make a first comprehensive approach to the systemic importance of banking and non-banking financial institutions. According to preliminary figures, the credit intermediation activities by banks are the foremost significant source of systemic importance, with their size and contribution to the large-value payment system as the main explanatory criteria. This concurs with the *too-big-to-fail* approach to systemic importance.

Additionally, despite being insignificant in size (i.e. volume of deposits and money market borrowing, and volume of financial assets under management) because of mandatory portfolio segregation, some broker-dealer firms have shown a high level of connectedness within the local financial system, making them systemically important because of their contribution to the payment system. This type of analysis is shown in the following figure:

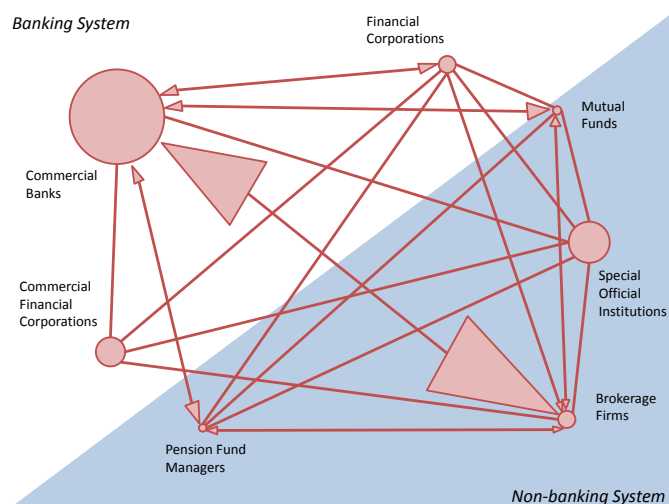
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<sup>5</sup> The World Bank reports that 96% of 142 large-value payment systems surveyed are owned and managed by the central bank. World Bank, "The evolution of Real-Time Gross Settlement", Financial Infrastructure Series, February, 2009.

<sup>6</sup> International Monetary Fund (IMF); Bank for International Settlements (BIS); Financial Stability Board (FSB), "Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations", October, 2009.

<sup>7</sup> The IMF/BIS/FSB's document suggests that size and non-substitutability relate to the direct impact, whilst connectedness relates to the indirect impact.

## Size and Connectedness of banking and non-banking institutions



Each node's diameter represents the asset's market value (from balance sheet, non-third party data only).  
 Arrow head represents the (ingoing-outgoing) value of payments (from large-value payment system).

Besides using balance sheet and large-value payment system data, some central bank's proprietary data may also be helpful. Usage of the central bank's liquidity facilities by financial institutions (e.g. Open Market Operations, intraday and overnight repos) and their money market funding provides first-hand information about the frequency and volume of their reliance on other sources of liquidity. Analyzing this information has been helpful for adverting financial institutions' practices or circumstances that may be considered to be unsafe or unstable.

As with some non-banking firms in the US, the externalities resulting from the number and the intensity of broker-dealer firms' connections within the local financial system may complicate monetary and financial stability analysis. The policy response to such risk may come in different forms which can tackle the (i) possible failing party, (ii) the non-failing party, (iii) the payment system, or all of the above.

The first of these options aims at reducing the probability and impact of having a defaulting party. This could be achieved by enhancing the regulation on institutions' activity by establishing limits or requiring greater liquidity reserves, etc. The other two forms try to make the system less vulnerable to an individual failure, either by reducing the counterparty risk and settlement risk<sup>8</sup>, or by providing liquidity alternatives to the non-failing parties in order to prevent contagion from an

<sup>8</sup> Counterparty risk may be reduced by moving Over the Counter contracts to Central Counterparties, whereas settlement risk may be reduced by establishing DVP, PVP settlement when appropriate, or allowing payment netting.

institution which fails to pay. In Colombia, some actions have been taken to move ahead in these three areas, but we look forward to further improving policy response capabilities.

Finally, it is important to highlight the following issues:

- ✓ Complexity and lack of transparency was a key factor in the crisis. In order to attain financial stability, efforts should be made to effectively understand and oversee financial institutions' activities. Part of these efforts may take the form of enhancing Over the Counter market risk management and transparency, moving Over the Counter contracts to Central Counterparties –as has been widely suggested since the crisis- and implementing new methodologies for assessing interconnections and identifying activities within financial institutions.
- ✓ It is worthwhile to combine different sources of information in order to attain a granular but comprehensive portrait of the functioning of the financial system as a whole. This combination would allow financial authorities to identify hidden sources of systemic risk, especially for financial institutions whose activities are not effectively captured by aggregate information sources such as balance sheet data.
- ✓ Informational granularity is important, but an aggregate view of the system is also helpful. Thus, it is relevant to identify conglomerates within the financial system in order to enhance the understanding of financial institutions' behavior and to better identify and deal with sources of systemic importance.
- ✓ As stated by the Financial Stability Board and the IMF, efforts concerning Global-Systemically Important Financial Institutions (G-SIFI) are the most important ones in the G-20 Gaps Initiative. Efforts should comprise banking and non-banking institutions.<sup>9</sup>
- ✓ For local financial markets, it is important to match efforts concerning Systemically Important Financial Institutions. Identifying Systemically Important Financial Institutions may support changes in the capital requirements, limits on leveraging, countercyclical policies and improvements in risk management.

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<sup>9</sup> Financial Stability Board (FSB) and International Monetary Fund (IMF), "The financial crisis and information gaps – implementation progress report", June, 2011.

- ✓ As suggested by the Financial Stability Board, regulation and supervision should be extended to ensure that all activities that pose economy-wide risks are covered and known to a systemic stability regulator [...]. In addition, institutions should have disclosure obligations to allow the authorities to determine their contribution to systemic risk and to differentiate the intensity of prudential oversight accordingly.
- ✓ Due to the lack of correspondence between standard banking metrics (e.g. solvency ratios, capital adequacy or non-performing loans) and non-banking activities, it is important to design and implement metrics that correspond to non-banking institution activities.
- ✓ As raised by the latest crisis, (i) customer's assets should be segregated from those of its broker-dealer or asset manager in order to reduce client's incentives to run when facing adverse news, and (ii) firm's ability to pledge customer's assets as collateral should be limited to avoid their withdrawals causing damage to the firm's financial strength.<sup>10</sup>
- ✓ Using infrastructure data, and designing and implementing appropriate methodologies suitable for its analysis (e.g. network theory) would make it possible to recognize the increasing importance and frequency of market runs and market liquidity, where financial institution connectedness and non-substitutability may be key criteria for identifying systemically important financial institutions.
- ✓ Due to the lack of correspondence between standard tools for banking crises prevention and management (e.g. last resort lending, deposit insurance), it is important to design and implement appropriate mechanisms for preventing and managing non-banking crises.
- ✓ It is important for financial authorities to cooperate and harmonize efforts in order to better understand, regulate, supervise and oversee the financial system. Sharing information and research among agencies and designing a crisis resolution manual are essential for an efficient safety net within the financial system. The Financial System Supervisory Coordination Committee, which comprises officers from Colombia's central bank, finance superintendency, central government and deposit insurance agency, has such objectives.

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<sup>10</sup> French, K.R. et al., "The Squam Lake Report – Fixing the Financial System", Princeton University Press, 2010.