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SYSTEMIC RISK IN BANKING SECTOR

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Abstract:
The current financial crisis reveals new dimensions of the concept of systemic risk in banking. This crisis has shown how interconnected the financial world has become and showed how a shock coming from a region can propagate very quickly, with an impact on financial stability around the world. History has shown once again the fragility of the banking sector. Compared to other sectors banking financial contagion spreads faster and negative externalities have much stronger effects. This article provides a conceptual framework for examining systemic risk, the negative effects of this event but also models for assessing systemic risk and systemic banking crises.

Key words: systemic risk, financial stability, bank contagion, systemically important banks

JEL classification: G01, G21

INTRODUCTION

Financial crises that have occurred in recent years, including the economic crisis started in 2007, emphasizes the key role that financial stability has in respect of the financial system and the economy as a whole. Growth of international banking activity has led banks to become too big and too interconnected and in terms of supervisory authorities too important for financial stability. Also intensification of the interlinkages between banks in recent decades has greatly expanded the scope for financial shocks to spread and to become systemic risk and enhances contagion effects. In this context, our paper focuses around "financial stability", "systemic risk" and "bank contagion" concepts that require a thorough analysis. The present study tries to reveal the definitions for financial stability, we also try to identify and analyze the systemic risk, to describe models of systemic risk assessment, and to make recommendations to avoid contagion in the banking sector.

FINANCIAL STABILITY

Although the concept of financial stability is a fairly new concern, in the banking system there is concern to achieve stability since 1900.

European Central Bank defines financial stability as "a state in which the financial system - comprising financial intermediaries, markets and infrastructure - is able to withstand financial shocks and imbalances in the financial intermediation process." (Schinas, 2004) believes that "a financial system is in a range of stability when it is able to facilitate (rather than impeding) economic performance and to remove any financial imbalances that arise from within or as a result of adverse and unanticipated events."

Other authors such as (Svensson, 2012) considers financial stability as "the situation in which the financial system can perform the essential functions (payment services, transforming savings into finance / investment and risk management services) resisting any shocks that threaten

these functions". Unlike the previous approaches, Svensson also focuses on specific risk management function on the financial system.

Systemic risk and financial instability are discussed by (Davis, 2001) in relation to financial crises. In his view a financial crisis is a collapse of the financial system so powerful that it has become unable to provide payment services or to allocate credit to the most productive investment opportunities.

Difficult to define the concept of financial stability is understood, in particular, by the absence of financial crises. From this perspective, the situation of financial stability means generally no systemic risk event or general lack of impact problems. We can also say that financial stability is characterized not reaching safety thresholds but rather passing critical thresholds, generating systemic crisis.

Financial stability is particularly important for any economy. For this reason, ensuring it is not left only to banks own risk management systems. In every country there are institutions that regulate banking financial activities, monitors compliance and ultimately remove out of the market those entities that threaten the interests of the banking system and can lead to trigger a systemic crisis.

SYSTEMIC RISK IN BANKS - IDENTIFICATION AND ANALYSIS

One of the most feared events in banking is the alarm of systemic risk. It can be likened to fire alarm that is triggered in a public space. But unlike fire, systemic risk is not clearly defined. Moreover, unlike the firefighters who often are able to turn off the fire, bank regulators have been accused many times of the contribution that they had in amplifying systemic risk.

Systemic risk precise meaning is ambiguous; it means different things to different people. A review of the literature reveals few guidelines. Systemic risk can be defined as "an event that has an effect on the entire banking, financial and economic system, rather than just one or a few institutions" (Bartholomew & Whalen, 1995). Systemic risk impact extends from the individual level, affecting a single entity by a financial difficulty to the general affecting other institutions and can lead to the breakdown of the entire system. The impact of systemic risk can be identified at national, regional or international level. Kaufman one of the famous authors in this field believes that systemic risk is "the risk of chain reactions that cause collapse of interconnected institutions".

In a 2009 report the International Monetary Fund and the Financial Stability Board believes that systemic risk is "the risk of disruption of financial services caused by major problems arising in the financial system as a whole or a part of it, a situation that has the potential to cause serious negative consequences for the real economy ", bringing serious externalities, namely economic and social costs in areas that fall outside the sphere of responsibility of shareholders, creditors and employees of financial institutions in trouble.

According to (Moinescu, 2006) "a key element of systemic risk definition consists of an *initially shock* and *transmission mechanism*". Shocks can be identified at individual or global level. Individual shock initially affects only one entity, while systemic shocks affect simultaneously all institutions. Regarding the transmission mechanism, bear in mind that in the center of systemic risk concept is the notion of contagion, specifically the spreading of negative effects.

Starting with the national experiences in recent years international organizations have identified five models of systemic risk assessment:

- Aggregate indicators of imbalances, which are either macroeconomic data, or monetary data sheet and which are used to signal the strengthening of risk in the financial sector or the economy as a whole. Most countries have chosen a couple of consisting data on the dynamics of credit growth and asset price.
- Indicators of financial markets considering risk appetite and liquidity conditions.

- Indicators of risk concentration in the financial system. They are particularly important because they call into question the element that was missing from the analysis of financial stability before the 2007 crisis, namely contagion. Extension of risk depends on complex connections between financial institutions, financial sectors, markets and national economies. Basel Committee has given special attention to this type of indicators and since July 2011 has published a methodology for supervision enabling supervision risk of contagion for global systemically important banks.
- Macroeconomic stress tests, for each national and international economy are focused on two risk factors for the financial system: economies of scale on the demand side (network effect) and mutual influence of poor development of economic and financial conditions (adverse feedback effect).
- Integrated monitoring systems, such as risk maps or a set of compounds indicators.

Systemic risk and systemic crises often are regarded as rare events. However banking crises have become, in recent decades increasingly more common, especially in countries in transition. Due to the essential role of banking in the economy, of fragile nature of banking and globalization with implications for free movement of capital a bank failure is regarded as an event with multiple connotations that can be a warning concerning the solvency of other banks from the system and can eventually trigger systemic banking crisis.

Systemic banking crises may result from causes that may occur either separately or in combination:

A possible cause of the systemic crisis is *mismanagement of credit risk*, this phenomenon is known in the literature as directional credit. In this case, the loans offered by banks are not profit-motivated and hedging. This situation that arises when banks are used as instruments in implementing economic and fiscal policies or when high level of interest rates is used as a tool to increase savings and, in this case, lending rates are compressed to meet preferential borrowers.

Another scenario is a functional banking system affected by *strong macroeconomic shocks*. If banks' funding costs rise sharply starting from the fixed interest rates on loans, banks must support the emergence of losses and are forced into costly financing with short-term maturities. If this situation lasts longer banks come to be undercapitalized. The effect is similar to that obtained in the case of a severe and prolonged recession affecting the quality of the loan portfolio.

Another possibility is that the banking system is affected by *currency crises*. In this case, debtors banks that have borrowed in other currencies or commercial contracts in other currencies suffer large capital losses due to currency shock, propagating this phenomenon in banks by reducing porfotoliului credit quality. On the other hand, banks that borrow in interbank markets or foreign capital without achieving a suitable hedging these positions will be undercapitalized due to the impact of currency crisis.

Banking liberalization measures unsupported by adequate prudential supervision can be another cause of systemic banking crises. Original image is that of oligopolistic banking system, protected from competition with foreign banks that do not have access to the market and to non-bank financial intermediaries within the economy. Being launched liberalization forces newcomers who are hardly regulated at early stages to provide services at lower prices due to lower capital costs. Banks balance already on the market will deteriorate. Banks will be undercapitalized, they will be losing best customers and increased cost of funding.

Finally and most prominent in the current crisis, chain bank failures may occur due to *counterparty risk in derivative transactions*. In this case if the institution X fails to establish its derived position with the institution Y, both X and Y will fail. If Y itself can not solve its positions, other institutions will fail. Therefore contagion in the banking system must be analyzed from several points of view and negative economic effects should be treated very carefully by supervisors because they affects a large number of markets:

Whatever the causes of systemic crisis, its effects are very harmful and affects all categories of people involved in banking. Starting from depositors, customers debtors, creditors, to managers, shareholders and even the Supervisory Authority. We can say that the effects of bank insolvency affects the entire economy, in Table 7 we tried to synthesize these effects.

Table 1. - Adverse effects of systemic risk event on the economy

Effect	Means of expression
Banking disintermediation	Insolvency of a bank may decrease confidence in the entire banking system and lead to massive and contagious cash withdrawals by depositors
Inefficient allocation of resources	Allocation of loans to large borrowers facing problems. Bank will refinance and renew loans to them to not aggravate their condition by stopping their funding,, phenomenon called crowding out.
Increasing interest rates	Instability in the banking system will lead to higher interest rates which may adversely affect the real economy by decreasing investments and rising prices.
Fiscal and monetary distortions	The nationalization or the financing of the banks in difficulty will lead to increase of fiscal cost and will be reverberating in the bugetary deficit
Ineffective macroeconomic policies	Monetary policy decisions adopted by the central bank would become ineficient in the case of bank insolbability.

Source: author processing

BANK CONTAGION IN THE CONTEMPORARY ECONOMY

A striking feature of the financial crisis of 2007 was the swiftness with which to spread, causing a situation in which only two years later, governments worldwide had to provide massive support to banks. International banks have played a key role in this bank contagion. History has shown once again the fragility of the banking sector.

In general, the banking system is considered more vulnerable to contagion than other industries since banks are viewed as more susceptible to failures. In one of his works (Kaufman, 1994) examined how bank contagion occurs. Also this paper presents the characteristics and elements that distinguish banking contagion from contagion to other financial markets:

- Contagion spreads more rapidly in the banking sector compared to other financial sectors.
- Negative externalities of bank contagion have a stronger effect than other financial markets.
- Compared to other sectors, in the banking market a larger number of institutions go bankrupt in case of contagion.
- Banking contagion can be caused both by the unfavorable development of the banking industry and of individual private bank. This is due to the fact that depositors are not sufficiently informed about the performance of the bank where they placed the resources or about the performance of the entire banking system.

Traditionally, according to (De Bandt and Hartmann, 2000), the contagion occurs through two channels:

- *The information channel* refers to massive and contagious cash withdrawals (bank runs) by depositors imperfectly informed about the type of shocks affecting banks. It also refers to ways through which bad news from one bank lead to the conclusion in the market that other banks are also in trouble, leading to adjustments of contracts with other partners.

An example of this is a perfectly solvent bank in Rhode Island USA who in 1991 was forced to declare bankruptcy after CNN presented a report about bank failures showing pictures of this specific bank.

- *The exposure channel* results from real exposures in the interbank market and in payment systems. Insolvency problems of one bank can trigger a chain reaction leading to other bank failures; this channel refers to the potential for emergence of "domino effect".

Once identified channels through which pass the contagion, in order to curb the effect of contamination, it is necessary to identify systemically important financial institutions. Determining what systemically important institutions means proved to be difficult. Internationally there are differences of opinion regarding their definition.

It is considered that an institution is *systemically important* if a failure or a malfunction causes a large problem. From the point of view of the Federal Reserve Bank, financial institutions are systemically important if "their failure to honor obligations to clients and creditors have significant adverse effects on the financial system and the entire economy."

The consultation paper prepared by Basel Committee on Banking Supervision deserves to be remembered. This document is characterized by an attempt to develop a methodology for identifying systemically important banks (Global Systemically Important Banks G-SIB).They are defined as" dangerous financial institutions due to the size, complexity and systemic interconnection, unable to leave the market without triggering a catastrophe of proportion".

Although internationally was not yet developed a universally accepted definition of systemically important banks, (Mutu, 2012) identified several features that are found in all documents prepared by supervisors. So common elements systemically important banks are:

- their size - banks too big to accept their collapse "To Big To Fail" TBTF
- close connections - banks too interconnected to accept their collapse "too Interconnected To Fail" TITF
- importance - banks too important to allow their bankruptcy "To Important To Be Allowed To Fail" TITAF

Although systemically important banks play a special role in bank contagion and spread negative effects on the real economy, it is noteworthy that the smaller size banks, local banks and the shadow banking system can generate systemic adverse events with repercussions on the banking system and the economy too.

CONCLUSIONS

Compared to other financial sectors, in banking contagion spreads faster and negative externalities have much stronger effects. In order to achieve financial stability and to reduce systemic risk and bank contagion effects, the design of prudential regulation and early identification of systemically important institutions is needed. It also requires a macro-prudential risk approach and creates risk measures that take into consideration the links between banks and their connections with other financial institutions.

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