

The Banking Crisis of 2007-2008, and Contemporary Responses

Rodolfo Varela Pinto*¹, Maria Rosa Borges^{#2}

* *European Central Bank*

ISEG (School of Economics and Management), University of Lisbon

Rua Miguel Lupi, 20

¹rodvpinto@gmail.com

[#]*UECE, ISEG (School of Economics and Management), University of Lisbon*

Rua Miguel Lupi, 20

²mrborges@iseg.ulisboa.pt

Abstract - Until 2006, the financial system prospered and was stable, and Basel II rules were viewed as contributing to that stability. The financial crisis of 2007-2008 forced a change in those beliefs, as imbalances spread and risks materialized, affecting banks and other financial institutions, and impairing economic growth. We discuss the causes of the financial crisis, the response measures that were applied by governments, central banks and the changes in supervision and regulation that are being prepared under Basel III, to increase the resilience of banks, and to reduce the risks of future crisis.

Keywords – *Banking Crisis; financial system; Basel II; supervision; regulation.*

1. The banking and financial system up to 2006

A strong banking system, robust and stable, with banks at the center of the credit process and as the main engine of the economy, is a fundamental condition for sustainable economic growth, in which the probability of occurrence of shocks on the real economy is minimized.

Until 2006, the dominant view was that financial systems were stable and resistant to adverse disturbances. The creditworthiness of counterparties to banks - firms and individuals - was considered high, and the macroeconomic and financial environment was favorable. Overall, the banking industry performed well, with increases in profitability and credit volumes registering low levels of impairment. The banks' total capital ratios remained comfortably above the regulatory minimum solvency ratio of 8%, even in the face of an increase in credit volumes.

The prevailing model of financial intermediation – originate-to-distribute model – allowed banks to distribute the credit risks they accepted to other financial agents and institutional investors (e.g. through securitization transactions) and thus release capital (e.g. own funds previously established to cover those risks), which, in turn, could be channeled into strengthening credit activity. The buyers of the credit risks originated by banks were pension funds, insurance companies, investment funds, hedge funds, who took this opportunity to diversify their portfolios.

The means available to ensure the security and stability of the financial systems provided comfort on the responsiveness to possible adverse events, including (i) guarantee funds deposits; (ii) protections for investors; (iii) regulators and supervisors; (iv) auditors and (v) the ability of central banks to grant loans. In this context, the implementation of the regulatory framework known as Basel II, represented a new form of supervision, with greater emphasis on the assessment and monitoring of risks, and allowed to predict the evolution of the risk management systems of banks in areas such as internal governance, technological solutions, and the widespread use of statistical tools in the estimation of risk in areas such as strategy, business and marketing. At the time, this was regarded as a significant step forward in the quality of supervision framework, and on the governance of banks, which was expected to become much more risk-aware and risk-oriented. Additionally, the continued prosperity and stability was proof that the system worked.

2. The financial crisis of 2007-2008

In 2007, the financial stability was significantly affected by a number of shocks originating in the North American subprime mortgage market, giving rise, for its scope and duration, to one of the most

severe episodes of recent economic history (see a detailed account by Acharya *et al*, 2009). In the financial stability report of the European Central Bank, issued in 2007, we can find a survey of the main causes of the crisis, including the following.

At the macroeconomic level, the imbalances related to subprime credit affected the value of the portfolios of sovereign debt, particularly by way of inaccurate pricing of assets issued by certain countries (whose quality was lower than perceived), and a consequent contagion effect to third countries. Additionally, global imbalances resulting from persistently high deficits in the current accounts, led to capital flows from emerging countries to industrialized and rich economies, especially, the United States.

The low level of interest rates potentiated strong credit growth in most industrialized economies (e.g. real estate credit, consumption and for investment in assets with potentially higher returns than bank deposits), which led to a rise in prices of assets and the distortion of the macroeconomic framework in a broad set of countries. Clear signs of these distortions were the significant increases of real estate construction, the consumption of durable goods (especially cars) and the increasing size of the financial sector. Another problem was the fact that agents presumed that bank funding markets would remain liquid, in any circumstance.

At the microeconomic level, economic agents faced with various distortionary incentives. Individuals and firms maintained relationships with banks and investments made in firms (financial and non-financial) without getting properly informed about their financial situation. Managers of financial institutions contributed to the undercapitalization of institutions, via strong growth in financing by issuing bonds, with the aim of leveraging results, in order to increase the dividends payable to shareholders. Compensation schemes encouraged managers to make decisions neglecting the long term view, in favor of short-term objectives. Contracts for the transfer of credit risk were not structured in a way that ensured the right incentives, and that adequate resources were used, by the risk originating banks to continue to manage and control the underlying risks of credit activity, which potentiated the increase in defaults. The rating agencies attributed overly high ratings, in particular the bond issuers' entities, inadvertently contributing for the increase of systemic risk. The auditors developed their activity

subject to a conflict of interests with their customers, because they are paid by those they audit.

Banks used inappropriate processes for monitoring and managing credit risk, using statistical tools based upon historical experience which, combined with a long period of relative stability, led to the perception that risk would be permanently low, thus under estimating it. This situation was compounded by the difficulty of estimating risk of new financial instruments to the extent that, with no historical data, these tools were not adequate to measure their risk.

Banks tended to accept the ratings of rating agencies at the expense of their own effort to evaluate the risks incurred. The positions taken by banks in complex financial products, as well as the actual perimeter of the potential exposure (e.g., via the designated structured investment vehicles) were, in general, opaque, hindering the identification and valuation of risks assumed. The largest international banks took excessive leverage and allowed the gradual erosion of the quality level of their capital base.

The matching of assets and liabilities showed a strong imbalance, with many banks holding insufficiently liquid assets. Additionally, some banks relied too much in wholesale funding markets in the very short term, in the incorrect assumption that it would always be possible to obtain liquidity in the markets.

Financial institutions found ways to move their business out of the regulatory perimeter, surpassing the limitations on leverage resulting from regulatory capital requirements, increasing their risk level, with the primary purpose of increasing profits. The result of these imbalances was the breakdown of the largest and most liquid financial markets in the world, triggering a severe contraction in real economy. The moment widely accepted as marking the loss of confidence in the financial system was the bankruptcy of the Lehman Brothers investment bank.

While the tools of risk assessment and pricing, and the management systems of financial institutions, were able to keep up with the innovations of financial products, the originate-to-distribute model contributed positively to the stability of the financial system. However, the financial crisis revealed weaknesses that were not supposed to exist in banks, insurance firms, investment and pension funds

managing firms, and even governments, increasing the fear of a global system breakdown.

The originate-to-distribute model itself contributed to the amplification of the effects of the crisis, facilitating wider risk transfer. The risks that large banking groups had transferred to others, sometimes unexpectedly returned to the origin, through a link of successive financial instruments. Also, the holding of volatile assets (e.g. most vulnerable to abrupt changes in the conditions of the capital markets) contributed to a risk liquidity exposure greater than perceived.

Simultaneously, the financial turmoil affected the access to funding in wholesale markets, including money markets. The stress on liquidity gave rise to concerns about the credit quality of the portfolio and the adequacy of the capital levels. In turn, these concerns increased with the loss of investor confidence in the ability of certain financial institutions meeting their obligations.

In credit, the retail segment showed high vulnerability to adverse disturbances, given the high leveraging and the rising of short term interest rates. In firms, credit ratings downgrades became more frequent than upgrades, even though there was no increase in the frequency of defaults. Asset prices in credit markets began to adjust, by widening spreads in the renewal of transactions. However, in general, banks made no significant changes in their credit policies, maintaining a growth trend, and thus averting any immediate effect on the real economy.

3. Crisis response measures

The scenario of crisis and turmoil in financial markets, coupled with strong fears of propagation to the global economy, in third quarter of 2008, led to a concerted action of governing bodies, including governments and supervisory authorities, which adopted unprecedented intervention measures, in an attempt to prevent blocking of financial innovation and a reduction of the system efficiency.

The overall intervention by governments and central banks contributed to stop the negative effects of the interaction between the financial system and the economy, limiting the size of the economic downturn. This is critical, as systemic crises imply high costs, in terms of lost output, employment and fiscal costs (Reinhart and Rogoff, 2009). To this end, central banks implemented accommodative monetary policies, complemented with measures aimed at

enabling the financial system to access liquidity and mitigating the disruptions in interbank money markets. Governments implemented fiscal and economic stimulus measures to support the financial system, with the goal of ensuring the stability of the latter and promoting the recovery of economic activity.

The main measures were: (i) reduction of interest rates to near zero (monetary policy); (ii) expansion of the balance sheets of central banks; (iii) government aid packages; (iv) fiscal stimulus on aggregate demand; (v) support by the central bank to financing needs of banks (providing liquidity) and (vi) direct support to the governments of credit to firms and households (e.g., in the form of guarantees to banks).

The commitment to avert the crisis, demonstrated by the implementation of successive measures, coupled with direct government support, calmed markets and prevented the collapse of the system, and several countries reached a more stable situation, by 2009, which continued in 2010.

4. Responses at the regulatory level

Prior to the beginning of the financial crisis, Basel II was seen as an important tool for strengthening risk management and prudential supervision, which would be conducted based on the perceived risk. Presumably, the conditions would be met to ensure that the banking systems in general and banks in particular, maintained a level of sustainable and adequate capital against the risk held.

However, the triggering and worsening of the crisis exposed a number of vulnerabilities and weaknesses in the international financial system and its regulation, uncovering a set of behaviors of agents that resulted from a misalignment of incentives. Consequently, and despite the fact that the Basel II regulatory framework includes stress testing, and rules that should ensure that banks can assess the potential losses they may incur from unlikely but plausible scenarios, a general consensus on the need to improve some elements of Basel II emerged (Blinder, 2010 and Moosa, 2010).

While in Basel I and II, the main focus was on the solvency capital, Basel III gives more focus to the problems too much leverage and inadequate buffers, by requiring different levels of reserves for different forms of bank deposits. The guidelines of Basel I and II were not abandoned, but are complemented with

new requirements, that aim to correct the problems and imbalances revealed by the financial crisis of 2007-2008.

Thus, the Capital Requirements Directive II and III were prepared for the purpose of reviewing and improving Basel II, and the development of a package of supplementary prudential measures, called Basel III, was initiated, focusing mainly on: (i) strengthening the quality of capital banks and their solvency ratios, (ii) reducing leverage in the financial system (iii) harmonization of liquidity requirements, both in the short and in the long run and (iv) the introduction of countercyclical macroprudential measures. Basel III will raise the minimum capital requirements, and banks will face higher capital charges for market risk, for exposures to off balance sheet vehicles and derivatives and for the credit risk of trading counterparties (see Chouinard and Paulin, 2014).

A new non risk based leverage ratio defined as tier 1 capital to total assets, with a maximum of 3%, will act as a safeguard against the modelling and measurement of risks, and will also constrain leverage to rise during economic booms, and subsequent reducing, during recessions. Two new liquidity standards will be introduced, assuring that banks have adequate liquidity sources over a 30 day period, and also that they use stable sources of funding over the long run. Additionally, Basel III introduces a countercyclical capital buffer with the aim of moderating the amplitude of credit cycles, and avoiding credit crunches to the real economy, during economic downturns. These revisions and new measures will be phased in over the period 2013-2019.

Additionally, a consensus emerged that supervision and regulation should be improved and more centralized, with more specific rules, promoting best practices in risk management and internal governance, and correcting the misaligned incentives. Basel III imposes that, among other measures all banks must conduct much more rigorous analysis of the risk inherent in certain securities such as complex debt packages, and that banks implement much more complete disclosures than before the crisis, including their exposure to off-balance sheet vehicles, how they are reported in the accounts, and how banks calculate their capital ratios under the new regulations.

Some professionals worry that the rules of Basel III are too stringent, and may have gone too far, and that there is a real danger that reform will limit the

availability of credit and reduce economic activity. Allen et al. (2012) claim that the problem is not higher capital and liquidity requirements per se but rather the difficulties of ensuring a coordinated adaption to the new rules across the entire financial services industry. The supervisory authorities will have to work together, to ensure an harmonized implementation, while correcting and adapting the new rules, in case they do not perform as intended or if they do not promote the desired effects. But what the financial crisis of 2007-2008 showed us all, is that we do need different rules to promote financial stability, than those we had under Basel II.

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