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INTERNATIONAL FINANCE AND POLICY COOPERATION:  
BEFORE AND AFTER THE 2007-2010 FINANCIAL CRISIS

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## **Abstract**

The purpose of this paper is to assess regional and international policy cooperation in financial regulation from the 1980s to the early 2000s. Despite the development of regulatory and supervisory standards from Basel I to Basel II, a financial crisis severely hit the global economy in 2007-2010. The paper shows how difficult it has been to overcome the collective action problems in international financial regulation, and discusses the regional aspect of financial vulnerability. In particular, the paper investigates the role that an interconnected financial network may have had in contributing to the crisis and stresses the necessity of cross-nationally monitored macro-prudential regulation. Europe's regulatory history and its significant exposure to financial losses stemming from this crisis lead us to question whether regional policy arrangements, which have been more successful in facilitating financial liberalization, are well-suited to develop instruments to effectively monitor increasingly-liberalized financial markets. Discussion includes consideration of the kind of financial institutional architecture that is required at both regional and global levels in order to ensure financial stability.

## **Keywords**

Global Financial Crisis, Regionalism, Financial Markets, Financial Stability, Basel Accords



## 1. Introduction

The purpose of this paper is to assess the successes and failures of regional and international policy cooperation in financial regulation from the 1980s to the early 2000s. Despite the development of regulatory and supervisory standards from Basel I to Basel II, a financial crisis severely hit the global economy in 2007-2010. This paper will describe how difficult it is to achieve collective action across countries, and explain the kind of financial institutional architecture that is required at both regional and global levels in order to ensure financial stability.

After the collapse of the Bretton Woods Systems in the 1970s, global financial integration and technological development drove countries toward financial liberalization. Freer markets achieved through deregulation necessitated greater government involvement through re-regulation in order to ensure financial market stability. Newly-implemented regulations included tighter prudential regulatory standards, such as capital adequacy requirements, investor protection measures, and enhanced risk management schemes.

Regional and international organizations also played a prominent role in this re-regulation process. When ad hoc and temporary policy coordination by the governments of large economies failed to manage financial policies, a series of institutional forums such as the Basel Committee on Banking Supervision (BCBS), the International Organization of Securities Commissions (IOSCO) and the International Accounting Standard Board (IASB) were established, and their roles were enhanced over time. At the European Union (EU) level, due to the Economic and Monetary Union (EMU) and single market policy, the need for collective action was even greater, thus contributing to a larger role of European institutions in determining financial regulation. The EU's rules often preceded international decisions and facilitated the implementation of more stringent standards.

However, the 2007-2010 financial crisis raised questions about the effectiveness of financial supervisory systems and international cooperation in monitoring financial market risk. First, the crisis unveiled the limited ability of Basel II to maintain financial market stability and its fundamental flaws, such as over-reliance on market monitoring, pro-cyclicality and insufficient calculation of market and liquidity risk. Second, the lack of effective international policy coordination in the financial supervisory processes delayed identifying and addressing new global risks which had emerged due to recent financial developments. For example, serious attention had not been paid to risk correlations among different financial institutions spread through the inter-bank and short-term money markets and derivatives markets. Only after the financial crisis hit the world, and regionally- and globally-interconnected financial networks collapsed, did the increasing importance of the liquidity issues of these markets enter the policy agenda.

The 2007-2010 financial crisis developed as a result of lack of appreciation of the interconnectedness among financial institutions and transactions, and consequent correlations of risks. However, the degree of interconnectedness and the distribution of correlated risk have not been homogeneous across nations: although all countries have suffered badly from reduced demand and prolonged recession, the extent of financial losses in the financial sector has been quite heterogeneous. In particular, it has been the transatlantic region which has been most severely hit by the financial crisis and which has suffered the greatest losses. In addition, if one leaves aside the US (epicenter of the sub-prime mortgage loan crisis), financial losses have been most heavily concentrated in Europe.

By looking at regulatory and institutional failures to ward off the financial crisis, this paper addresses a theoretical question in international political economy: do regional policy networks have the capacity to develop effective instruments to monitor and govern liberalized financial markets? Traditionally, international political economists focused on whether regionalism drives protectionism or facilitates liberalization. If past developments in regional cooperation truly facilitated financial integration and liberalization, then the quality of markets needs to be critically examined. Apparently, widespread transatlantic intra-linkage seems to have made financial markets more volatile rather than mitigating the contagion of financial shocks. This study aims to identify the problems of the existing regional policy frameworks in Europe by examining Europe's regulatory processes and the losses resulting from the financial crisis.

The structure of this paper is as follows. Section 2 traces the processes of major international and regional cooperation in financial regulation and supervision. It highlights the incremental progress towards better regulation and the institution of a more advanced European framework. Section 3 examines the causes of - and the responses to - the 2007-2010 financial crisis, with a focus on the impact of the crisis in Europe. It assesses the role that an interconnected network may have had in contributing to the crisis and stresses the necessity of cross-national financial supervisory cooperation at the macro level. Section 4 concludes with a discussion of what kind of policy cooperation needs to be developed in order to enhance the ability of regional and global communities to identify problems shared across borders and increase their capacity to enforce more effective supervisory rules at a global level.

## **2. Micro-Prudential Regulation before the 2007-2010 Financial Crisis**

This section traces the processes of major global and European cooperation in financial regulation and supervision with a focus on prudential regulation, such as the Basel Accords, where the EU often preceded other countries and imposed more stringent standards. Traditionally, prudential regulation focused on maintaining the sound financial health of individual financial institutions in order to avoid disastrous failures with possible contagious impacts on other financial institutions (micro-prudential regulation). The prudential regulation developed from the 1970s to the early 2000s aimed at the establishment of a better micro-prudential regulatory framework and its effective implementation. Micro-prudential regulation contrasts with macro-prudential regulation, which concerns the function of the wholesale financial market itself, as will be elaborated in the next section. Although a lack of macro-prudential regulation was more relevant in causing the 2007-2010 financial crisis, the existing form of micro-prudential regulation had defects and also contributed.

Rationales for prudential regulation over banking and securities firms lie in systemic risk and its associated costs. Banks are vulnerable to bank runs and bank failures can harm a central function of an economy. Widespread failures among brokers and dealers would also damage the operation and liquidity of securities markets because of linkages between brokers and dealers and the settling and clearing of transactions.<sup>1</sup> Thus, prudential regulations were intended to bring the risk of failures and insolvency down to an acceptable level.<sup>2</sup> In a narrow sense, prudential regulation means capital adequacy rules and other safety and soundness measures designed to improve the soundness of banks and securities firms and maintain financial stability. The wider definition of prudential regulation includes a deposit insurance system, a lender of last resort, and investor and consumer protection measures such as disclosure requirements and rules governing the conduct of business.<sup>3</sup> The following subsections focus on the development of narrowly-defined prudential regulation at both global and European levels, which directly aimed at warding off financial crises.<sup>4</sup>

### *2-1) Capital buffers to cover risk*

At a global level, international regulatory harmonization grew in importance to ensure global financial stability and avoid regulatory arbitrage as financial markets became more integrated. Prudential regulatory harmonization progressed thanks to the BCBS, which is a committee of the Bank for International Settlements (BIS), and the IOSCO.<sup>5</sup> Each country's banking and securities supervisors are represented both in the BCBS and IOSCO. The Basel Committee was established in 1974 by the

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1. Guido Ferrarini, ed., *Prudential Regulation of Banks and Securities Firms: European and International Aspects* (London: Kluwer Law International, 1995), 10-11.

2. The basic feature of prudential regulation is preventive, not protective. Preventive regulations stand in contrast to protective regulations. The former means controlling risk levels and reducing the probability of bank failures to an acceptable level, whereas the latter means avoiding bank failures (See *ibid.*, 4).

3. *Ibid.*, 4-5.

4. Although the lender of last resort plays a relevant role in financial crisis prevention, its role is more closely related to financial crisis management. This paper deals with the question of financial crisis management only to a limited degree.

5. Ferrarini, 6-10.



central bank governors of the Group of Ten (G-10) countries in response to the systemic crisis concerns stemming from the failures of Franklin National Bank and Bankhaus Herstatt in euro-currency trading,<sup>6</sup> under the administration of the BIS in Basel.<sup>7</sup> In the Basel Committee, each nation has one representative from its central bank and, if the central bank is not a banking supervisor, then the nation has another representative from its financial supervisory authority.

As a first major step in regulatory harmonization, the Basel Concordat was agreed upon in 1975 for the supervision of banks' foreign subsidiaries. It stated that the parent authority (the home authority) was responsible for foreign branches and the host authority was responsible for foreign subsidiaries. The revised Basel Concordat added the concept of consolidated supervisor in order to avoid a lack of supervision over a cross-national financial group.

The watershed in prudential regulation by the BCBS was the enactment of the Basel Accord ("International Convergence of Capital Measurement and Capital Standards") in 1988, called Basel I, setting the capital adequacy ratios for internationally active banks in order to control credit risk<sup>8</sup> associated with their lending. This Accord required internationally active banks to maintain a capital buffer, called regulatory capital, equal to at least 8% of their risk-weighted assets (RWA) (such as loans and securities) and asset-equivalent off-balance-sheet exposures (such as loan commitments, standby letters of credit and obligations on derivatives contracts) to cover their credit risk exposure. Regulatory capital included equity, loan-loss reserves, subordinated debts and some other instruments.<sup>9</sup> It aimed to provide safety and soundness in financial markets as well as a level playing field for banks across the states.<sup>10</sup>

The 1988 Accord was incorporated into the national laws of the G-13 member countries by December 1992. Although the Basel Committee operated only on a consensus basis and did not have the legal authority to enforce the Accords, the member countries' supervisory authorities committed to implement the Accords. Many non-member states also complied with the Basel Accords to improve their financial institutions and gain international reputation. In implementing the Accords, states can supplement the Basel rules with even more stringent capital standards on their own initiative.

In parallel with the Basel Committee's adoption of the Basel Accord, European regulatory convergence in prudential regulation developed and implemented the Basel rules.<sup>11</sup> The same supervisory criteria in the Basel Concordat were enacted with the First Banking Directive (Directive 77/ 780/ EEC of 12 December 1977). The concept of a consolidated supervisor in the revised Basel Concordat was also introduced in the First Consolidated Supervision Directive (Directive 83/ 350/ EEC of 13 June 1983). The equivalents of the Basel Accord of 1988 were enacted as the Own Funds Directive (Directive 89/ 299/ EEC of 17 April 1989) and the Solvency Ratio Directive (Directive 89/ 647/ EEC of 18 December 1989).

Despite its wide recognition and progress in compliance, Basel I eventually revealed its limitations in the following ways: 1) a failure to count interest rate risks and market risks, 2) an insufficient measurement of credit risk, and 3) vulnerability to regulatory arbitrage. First, Basel I did not put much weight on interest rate risks and market risks carried in banking activities. As the banking industry expanded beyond traditional lending and into securities, capital assessment in

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6. The G-10 countries consist of *eleven* industrial countries: Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States.

7. The BIS was established in 1930 to deal with reparation repayments imposed on Germany. Since 1930, central bank cooperation at the BIS has taken place through regular meetings in Basel.

8. Credit risk means the possibility that counterparties fail to meet the obligations stated in a loan contract.

9. In Basel I, regulatory capital consisted of Tier 1 capital (core capital), Tier 2 capital (supplementary capital), and Tier 3 capital. This structure did not change in Basel II, which was enacted later to improve the Basel I framework.

10. Centre for European Policy Studies (CEPS), *Basel II Implementation: In the Midst of Turbulence (CEPS Task Force Report June 2008)* (Brussels: Centre for European Policy Studies, 2008), 16.

11. Ferrarini, 6-10.

relation to market risks increased in relevance.<sup>12</sup> Market risk means risk due to a change in market prices, such as equity prices, commodities prices, interest rates, and exchange rates.

Second, Basel I did not identify creditworthiness and credit risk. Its main weighting percentages were as follows: credits for Organization for Economic Co-operation and Development (OECD)-members corresponded to a risk weight of 0% (liable capital of zero), credits for banks residing in one of the OECD-member states and non-OECD governments corresponded to a risk weight of 20% (liable capital of 1.6%), mortgages to a risk weight of 50% (liable capital of 4%), and credits for other debtors (such as non-bank and private sector) to a risk weight of 100% (liable capital of 8%). However, OECD membership was not a good indicator of a country's creditworthiness, and applying an 8% liable capital rule to any corporate loans ignored the varying degrees of debtor default probability between loans.<sup>13</sup>

Third, Basel I encouraged banks to engage in regulatory arbitrage through asset securitization and other financial vehicles including credit derivatives (credit derivative swaps, collateralized debt, and loan notes), which entailed low capital charges due to Basel I's limited differentiation between degrees of risk. Banks started to trade risk exposures, move exposures off the balance sheet, and transfer risk to other financial actors when the regulatory capital requirement was higher than what the market required, the so-called economic capital.<sup>14</sup>

## 2-2) Incorporation of market risk

To incorporate market risk into its framework, the BCBS worked with the IOSCO. Parallel to the adoption of Basel I by the Basel Committee, the IOSCO started to work on capital adequacy standards for securities firms in order to control their market risk. The collaboration between the BCBS and the IOSCO Technical Committee led to the incorporation of market risk into the assessment of bank strength in 1991. Although such collaboration initially faced tensions between each country's regulatory approaches, in 1993 the BCBS published a joint proposal with the IOSCO to supplement the Basel Capital Accord, creating a framework that incorporated market risks, the risk of losses in on- and off-balance sheet positions, and banks' internal risk measurement systems. Finally, an "Amendment to the Capital Accord to Incorporate Market Risks" was published in January 1996 after two comment periods, and later implemented.<sup>15</sup>

At the EU level, preceding international regulatory harmonization through a joint proposal by the BCBS and the IOSCO, European Directives incorporated market risk into the assessment of the soundness of banks through the enactment of the Capital Adequacy Directive (CAD) in 1992 (Directive 93/ 6/ EEC of 15 March 1993). It targeted a broader scope of financial institutions and activities than the Basel Capital Accord, including investment firms as well as the securities activities of banks. The CAD applied the same rules both to investment firms and banks as long as they offered similar types of investment services. Thus, the scope of the regulations does not depend on the type of financial institution, but rather on the services it offers. This is called a functional approach to prudential regulation, contrasting with an institutional approach.<sup>16</sup>

## 2-3) Incorporation of creditworthiness

Furthermore, to take creditworthiness into account when calculating capital requirements and compensate for other limitations of Basel I, the BCBS announced a new risk-based capital framework

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12. Ibid., 6-8.

13. Hartmut Bieg and Gregor Krämer, "Banking Supervision in Europe: From Basel I to Basel II," in *Strategic Management - New Rules for Old Europe*, ed. Christian Scholz and Joachim Zentes (Wiesbaden: Gabler, 2006), 75-76; Centre for European Policy Studies (CEPS), 17.

14. Centre for European Policy Studies (CEPS), 19; Financial Stability Forum, "Report of the Financial Stability Forum on Enhancing Market and Institutional Resilience," April 7 (2008): 12, 13 [online]; available from [http://www.fsforum.org/publications/r\\_0804.pdf](http://www.fsforum.org/publications/r_0804.pdf) (accessed on June 30, 2010).

15. Ferrarini, 8-10.

16. Ibid., 63-76.

to replace it in June 1999. After international consultation based on consultative papers published in June 1999, January 2001, and April 2003, the new Basel Accord, Basel II, was adopted in June 2004.<sup>17</sup> Implementation progressed gradually: the start dates were January 2007 for the simpler methods and January 2008 for the more advanced ones.

Basel II aimed at giving banks an incentive to improve their internal risk-management capabilities and enhance corporate governance and disclosure. This Accord consists of three pillars: 1) minimum capital requirement (Pillar I), 2) supervisory review process (Pillar II), and 3) market discipline (Pillar III).

In Pillar I, Basel II incorporated various risks into its framework and introduced risk-sensitive measures. For example, for the first time Basel II counted operational risk resulting from inadequate or failed internal processes, persons or IT systems, or from external events.<sup>18</sup> Moreover, Basel II required more capital for high-risk borrowers, and also aimed at reducing risk arbitrage opportunities by taking account of risk mitigation techniques and securitization. As will be elaborated on in the next section, a risk-sensitive approach caused a problem of pro-cyclicality. Financial institutions were obliged to hold less capital in an economic upturn and more capital in an economic downturn. As a result, capital requirements did not help calm the financial bubble or restore economic growth during economic recession. In addition, in order to implement risk-sensitive measures, some weights were given to internal risk assessment. Financial institutions that developed an advanced risk management capacity were allowed to use their own internal risk-based assessments (IRB approach). The adoption of IRB led to an expanded role of self-regulation in financial supervision. Overreliance on self-regulation was later criticized as the 2007-2010 financial crisis unfolded.

Pillar II of Basel II is composed of two elements: 1) the International Capital Adequacy Assessment Process (ICAAP) and 2) the Supervisory Review and Evaluation Process (SREP). ICAAP guides banks to organize an internal risk and capital management system. On the other hand, SREP provides guidelines on how financial supervisors should evaluate a bank's internal risk management system.

In addition to these two pillars, Pillar 3 supplements them with disclosure requirements pertaining to information on a bank's regulatory capital and risk profile. As Guido Ferrarini points out, in increasingly competitive financial markets the capability of regulators to catch up with newly-developed financial instruments and assess all types of risk including interest rate, exchange rate, payments and off-balance-sheet risks was questioned. Enhanced disclosure requirements were encouraged to reduce the risk associated with derivatives markets. More "market-friendly" banking regulation was encouraged by enhancing the disciplinary effects.<sup>19</sup>

Each country implemented Basel II on a different schedule and with a different degree of stringency. At the European level, Basel II was implemented through the enactment of the Capital Requirements Directive (CRD) which applies the risk-sensitive Basel II to some 8,000 European banks and some 2,000 investment firms (Directive 06/ 48/ EC of 14 June 2006). The EU enacted the Financial Services Action Plan in 1999 to improve its own single market for financial services. In keeping with the revision by the BCBS in 1999, the European Commission had worked on revising the Financial Services Action Plan to keep pace with capital market developments. This led to the EU's prompt implementation of the rules when the framework was approved by the international community in June 2004. In contrast, the U.S. delayed implementation because of disagreements between federal bank regulators and financial institutions in Congress. The U.S. regulatory authorities

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17. Claessens, Underhill and Zhang (2008) point out the lack of representation from developing countries with only a number of small and unrated banks. During the consultation process, a policy community of regulators and financial institutions, and a few academics and industrial associations provided inputs. However, these inputs came exclusively from North American and European financial institutions represented in the Institute for International Finance (IIF). See Stijn Claessens, Geoffrey R.D. Underhill, and Xiaoke Zhang, "The Political Economy of Basel II: The Costs for Poor Countries," *The World Economy*, 2008.

18. Centre for European Policy Studies (CEPS), 20-23; Bieg and Krämer, 78-81.

19. Ferrarini, 15.

published a notice of proposed rulemaking (NPR) on September 25, 2006, and the Final Rules were published on December 7, 2007, and became effective on April 1, 2008.<sup>20</sup>

In addition, when the Basel II rules were implemented in Europe through the CRD, it was done with additional comparatively stringent conditions. For example, the European Directive applies the rules to all credit institutions and investment firms,<sup>21</sup> whereas the U.S. applies the Basel rules only to the 10-20 largest internationally active banks.

#### *2-4) A single market and prudential regulation in the EU*

It was Europe's single market policy that gave it a stronger incentive toward cross-national harmonization in financial supervision compared to other regions. The concept of the single market started to develop in its financial services markets, after Europe adopted a "Euro-Passport" model in financial supervision with the Second Banking Co-ordination Directive in 1992. This means that financial institutions could conduct their businesses in other European countries (host countries) through establishing branches or subsidiaries, based on licenses given by their home countries. They could offer the same financial services as they did in their home countries. The same principle was applied to investment firms and investment funds through the Investment Services Directive (ISD) of 1993, which was replaced by the Markets in Financial Instruments Directive (MiFIDs) of 2007, and the Undertakings for Collective Investment in Transferable Securities (UCITS). According to this concept in the Second Banking Co-ordination Directive, branches of credit institutions that are located in other member states are subject to supervision by home supervisors.

Accordingly, to regulate liberalized and integrated financial markets, a major policy initiative toward financial supervisory integration started in Europe. Recommendations by the Committee of Wise Men on the Regulation of the European Securities Markets (Chairman Alexandre Lamfalussy) led to the creation of the Level 3 committees to further financial supervisory convergence. In addition, regional and international agreements, such as the CRD and the Basel Accords, provided common supervisory standards across nations, thus facilitating a path to regulatory harmonization.

#### *The Level 3 Committees*

To enhance cooperation in financial supervision and enforcement, the EU established regional supervisory agencies that strengthened policy coordination among national financial supervisory authorities. These institutions are the Level 3 committees: the Committee of European Banking Supervisors (CEBS), the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS), and the Committee of European Securities Regulators (CESR). The Level 3 committees support legislative initiatives in financial regulation, enhance legal enforcement, and promote cross-national supervisory information exchanges. The committees were instituted under a four-level cooperative financial governance scheme (legislative, regulatory, supervisory convergence, and enforcement), called the Lamfalussy framework. They played a role in laying out standard rules and practices in accordance with minimum regulatory standards agreed upon at European and global levels. An example is their role in implementing the CRD by way of issuing guidelines.

Concerning banking supervision, in accordance with Basel II and the CRD, the CEBS developed integrated guidelines on the supervisory review process (SRP) of European banks and investment firms in January 2006 after two rounds of public consultation.<sup>22</sup> In combination with two other CEBS guidelines (concerning cooperation between consolidating and host supervisors, and stress

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20. Robert F. Hugi, Jason H.P. Kravitt, and Carol A. Hitselberger, "U.S. adoption of Basel I and the Basel II securitization framework," *North Carolina Banking Institute* 12, March (2008) [online]; available from: <http://studentorgs.law.unc.edu/documents/ncbank/volume12/hugi.pdf> (accessed on June 30, 2010).

21. Centre for European Policy Studies (CEPS), 62-65.

22. CEBS, "Guidelines on the Application of the Supervisory Review Process under Pillar 2," published on 25 January 2006 [online]; available from <http://www.c-ebs.org/getdoc/00ec6db3-bb41-467c-acb9-8e271f617675/GL03.aspx> (accessed on June 30, 2010).

testing),<sup>23</sup> the guideline for the SRP provided a basic framework of financial supervisory practices and cross-national cooperation in Europe. The SRP guidelines mandate that financial institutions need to adjust their risk assessment and capital requirements according to suggestions from supervisors. Importantly, supervisors take into account not only quantitative but also qualitative risk.

Cooperation between consolidating (home) and host supervisors is the basis for the SRP to capture the overall risk profile of, and impose adequate capital requirements on, pan-European financial institutions. To address this matter, the guideline on cooperation between consolidating (home) and host supervisors was issued, aiming to meet the lack of supervisory information on entire financial groups due to their cross-national activities and the segmentation of financial supervisory authorities. This guideline mandates that consolidating and host supervisors work in close cooperation while identifying and monitoring financial institutions' branches/subsidiaries of systemic relevance for a whole group. An exchange of supervisory information on these institutions' foreign offices is necessary to assess the risk and capital requirements of an entire group.

In addition, the SRP should take into account possible changing features of risk under various conditions. Concerning risk calculation, the guideline on stress testing was issued to require that financial supervisors conduct stress tests as part of the assessment process, the results of which need to be incorporated into the calculation of capital. The stress test measures the extent to which financial institutions can withstand macroeconomic or financial market shocks.

### *Failures in Supervisory Cooperation*

However, the home country principle had capacity limitations and incentive problems regarding the supervision of cross-national financial conglomerates. Based on the home country principle, foreign subsidiaries were supervised by host supervisors, whereas foreign branches were supervised by consolidating (home) supervisors. Host supervisors did not have primary responsibility for the financial health of branches of foreign banks, which were located within their national borders. Problematically, consolidating supervisors often did not have access to detailed supervisory information about the foreign branches of their financial institutions.

In addition, consolidating supervisors had no strong incentive to tightly supervise them, since resolution costs often fall on the host country in the case of insolvency. This could lead to moral hazard, as was seen in the case of Iceland. Here, the expansion of branches continued without sufficient amounts of deposit guarantee funds and adequate financial supervision. This resulted in accumulated costs being imposed ex post on the host countries.<sup>24</sup>

Despite the progress in regulatory and supervisory standards from Basel I to Basel II, the corresponding European Directives, and the policy attempts at supervisory cooperation in the EU, nothing could prevent the 2007-2010 global financial crisis and its impact on Europe. The rapidly emerging financial markets revealed their vulnerability and incapability when confronted with adverse macroeconomic policies and conditions. The next section analyzes the causes of this global financial crisis and examines the resulting financial losses in Europe, a region which could have been expected to do better than others due to its earlier progress toward supervisory cooperation. It also analyzes recent discussions on prudential regulation and institutional reforms in the light of lessons learned from the crisis.

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23. CEBS, "Guidelines for Co-operation between Consolidating Supervisors and Host Supervisors," published on 25 January 2006 [online]; available from <http://www.c-eps.org/getdoc/cb2b33ce-c043-444e-90b2-1e61a5354173/GL09.aspx> (accessed on June 30, 2010); CEBS, "Technical Aspects of Stress Testing under the Supervisory Review Process," published on 14 December 2006 [online]; available from <http://www.c-eps.org/getdoc/e68d361e-eb02-4e28-baf8-0e77efe5728e/GL03stresstesting.aspx> (accessed on June 30, 2010).

24. The de Larosière Group, "The High-Level Group on Financial Supervision in the EU," Chaired by Jacques de Larosière, 25 February 2009: 35 [online]; available from: [http://ec.europa.eu/internal\\_market/finances/docs/de\\_larosiere\\_report\\_en.pdf](http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf) (accessed on June 30, 2010); Also see House of Commons Treasury Committee, "Banking Crisis: The impact of the failure of the Icelandic banks," published on 31 March 2009 [online]; available from: <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmtreasy/402/402.pdf> (accessed on June 30, 2010).

### 3. The 2007-2010 Financial Crisis: Causes and Responses

There were both market and policy factors behind the 2007-2010 global financial crisis. Excesses of credit availability and liquidity, and fraudulent lending practices, combined with a lack of effective financial supervision, the inaccurate pricing and monitoring of risks, and pro-cyclicality embedded in the existing financial supervisory framework, aggravated a boom and bust cycle in the U.S. which led to the global financial crisis.

#### *3-1) The failure of the subprime mortgage loan market*

As the FSF Report (2008) points out,<sup>25</sup> excessive credit availability and liquidity and fraudulent lending practices in the US subprime mortgage loan market starting from late 2004 contributed to its collapse. Excess credit availability arguably stemmed from the low interest rate policy set by the U.S. Federal Reserve, a benign economic and financial situation, U.S. overconsumption relying on huge deficits in its balance of payments, and newly created financial instruments such as collateralized debt obligations (CDOs), credit enhancements by banks,<sup>26</sup> and the credit default swap (CDS) market, in which credit risk is traded and hedged. In addition, excess credit availability and increasing asset prices contributed to a low default rate, thereby reducing the credit risk premium for regulatory capital and reinforcing the boom.<sup>27</sup>

Excess credit availability and weak regulatory monitoring created low underwriting standards, such as lending to less creditworthy borrowers with high cumulative loan-to-value ratios and limited or no verification of the borrower's income. Fraudulent lending was made possible, especially by mortgage companies that were not affiliated to banks, and the US authorities provided neither sufficient regulatory supervision of the actors who originated risk and funded mortgages nor adequate protection to investors in the mortgage loan markets.

#### *3-2) Factors contributing to the global financial crisis*

One of the unique and most important factors which led the collapse of the subprime mortgage loan market to develop into a full-blown global financial crisis was a failure to take into account the pro-cyclicality enhanced by the introduction of new financial instruments and products. The risks embedded in the markets for new financial products, such as securitized products and derivatives, were underestimated during the economic boom, thus leading to financial vulnerability. Securitized products consist of a bundle of debt obligations such as CDOs. Cash flow depends on the income streams from the underlying assets, such as real estate and housing loans, consumer credit, and auto loans, and serves different stratified risk positions or "tranches" of securitized products.

Four aspects of the market for securitized products help to explain the failure to maintain financial market stability through adequate risk monitoring: informational asymmetry, an incentive problem, pro-cyclicality, and a failure to monitor risks stemming from interconnectedness.

First, informational asymmetry is embedded in the chain of securitization transactions. Each securitization product entails a stream of contracts and transactions, called the originate-to-distribute (OTD) chain. The market players involved in this chain include originators (e.g. banks), arrangers, distributors (e.g. pension funds), and managers. Since too many actors were involved in the OTD chain, the problem of information asymmetry arose and made the monitoring of the quality of assets and products difficult.<sup>28</sup>

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25. See Financial Stability Forum (2008). In response to the 2007-2010 global financial crisis, the Finance Ministers and Central Bank Governors of the G7 countries instructed the Financial Stability Forum (FSF) to examine the causes of the financial crisis and set out recommendations, leading to this proposal.

26. Credit enhancement is an arrangement where an originating bank retains securitization exposure and provides a degree of protection to other parties (Centre for European Policy Studies (CEPS), 31 and Footnote 51).

27. Financial Stability Forum, 5-11.

28. See Günter Franke and Jan Pieter Krahn, "The Future of Securitization," *Center for Financial Studies (CFS) Working Paper* No. 2008/ 31 [online]; available from: [http://www.ifk-cfs.de/fileadmin/downloads/publications/wp/08\\_31.pdf](http://www.ifk-cfs.de/fileadmin/downloads/publications/wp/08_31.pdf) (accessed on June 30, 2010).

Second, the Basel II rules relied too much on bank-internal models and evaluations conducted by external credit assessment institutions (ECAI), including external rating agencies, such as Standard & Poor's and Moody's, and qualified export credit agencies.<sup>29</sup> There were conflicts-of-interest issues related to the strong revenue incentives for external rating agencies whose payments came from the originating banks and issuers of structured products.

Third, as Brunnermeier et al. (2009) argue, the risk-weighted measures of capital requirements were pro-cyclical by nature, aggravating the boom and bust cycle.<sup>30</sup> The problem of pro-cyclicality is linked to a high leverage ratio, short-term inter-bank lending through collateralized assets, and Basel II's reliance on market signals such as Value at Risk (VaR) and the ratings given by rating agencies. In the first place, a high leverage ratio allows banks to borrow more in an economic boom and lend less in an economic downturn, thus amplifying a boom and bust cycle. Moreover, in inter-bank lending markets, during an economic boom banks lend a large amount of funds to each other at a lower price (at lower haircut/margin)<sup>31</sup> due to the high price of collateralized assets. During an economic downturn, banks have to sell assets at a low price ("fire sale") and lend money only at a high haircut/margin. This worsens the economic boom and bust cycle, and it can lead to liquidity dry-ups in inter-bank lending markets during an economic downturn. Additionally, as Claessens, Underhill and Zhang (2008) point out, because the risks are measured according to market value, if a wide range of banks responds simultaneously and in the same way to perceived risks, upturns and downturns can be reinforced, as happened in the 2007-2010 financial crisis.<sup>32</sup> In this crisis, the collapse of the subprime mortgage loan market was driven by instant downgrades of securitized assets - even of ones initially rated as triple-A.

A fourth aspect of market conditions contributing to financial market instability was a lack of monitoring of the risk correlation resulting from derivatives markets. Although securitization aimed at risk diversification, this objective was not met since banks held a portion of the products they issued and hedged the risk through derivatives such as CDOs, whose market liquidity quickly dried up once investors' trust in the asset quality plummeted. Although the risks stemming from the interconnectedness of financial networks had not been a major issue for regulation, in the 2007-2010 financial crisis this factor played a significant role, as Brunnermeier et al. (2009) rightly point out. The financial crisis spread due to the interconnectedness of the interbank money market, and payment and security settlement systems. This interconnectedness became significant and exposed each country's financial market as a whole to the risk of failure as financial institutions had substantial lending relationships with each other.

### *3-3) Regulatory Responses: improvements in micro-prudential regulation*

First of all, micro-prudential regulation, which was implemented by the Basel Accords, needs to be improved in the light of the 2007-2010 financial crisis. To cover risks in a more comprehensive manner, the CEPS suggests an integrative approach involving Pillar I, Pillar II, and Pillar III.<sup>33</sup> The report indicates the necessity of building substantial expertise in quantitative and qualitative

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29. Banks' internal risk management standards need to be approved and regularly assessed ('stress test') by supervisors (Claessens, Underhill and Zhang, 318).

30. Markus Brunnermeier, Andrew Crockett, Charles Goodhart, Avinash D. Persaud and Hyun Shin, *The Fundamental Principles of Financial Regulation (Geneva Reports on the World Economy 11)* (Geneva: International Center for Monetary and Banking Studies, 2009), 1-23.

31. In order to get short-term funding, banks use assets as collateral while paying haircut/margin, which is the difference between the current market price of the security and the price at which it is sold, and must be financed by the trader's own equity (Brunnermeier et al. 2009).

32. Claessens, Underhill and Zhang, 326.

33. Centre for European Policy Studies (CEPS), 37-48. According to market discipline (Pillar III), banks are required to disclose all information relevant to their internal rating, including both quantitative (capital adequacy measures and the main aggregates on which capital computation is based) and qualitative (risk-assessment methodologies and related organizational processes), except for information whose disclosure reduces the value of investments (proprietary information) or breaches contractual obligations of confidentiality (confidential information).

assessment by regulators in cooperation with banks, of adopting capital add-ons in Pillar II, which covers a broader scope of risk than Pillar I, and of using disclosed information to discipline institutions in Pillar III. According to this proposal, before developing the quantitative tools of Pillar I, which determine the level of regulatory capital, financial institutions need to set up Pillar II in order to measure all the risks facing a bank's management, internal governance, and supervisory review. Through the SRP, national supervisors evaluate, review and monitor institutions' progress and impose capital add-ons if Pillar I is insufficient to cover the overall risk profile. To use disciplinary functions in the market, information disclosure is required through Pillar III. Pillar I and Pillar II naturally provide the principles and criteria for determining which information needs to be provided.

In particular, new financial products and transactions which entail unexpectedly high risk need to be regulated and higher capital charges should be imposed on them. For example, as the FSF's April 2008 Report recommends, capital requirements for certain complex structured credit products, such as CDOs of asset-backed securities (ABSs), can be raised; an additional capital charge to capture the default and event risk of credit risk exposures held on the trading books of banks and securities firms can be introduced; and a sound settlement, legal and operational infrastructure in over-the-counter (OTC) derivatives markets needs to be ensured.

### *3-4) Regulatory Responses: the introduction of macro-prudential regulation*

Nevertheless, in order to address risks which are correlated and interconnected, the improvement of the Basel II framework is not enough. Basel II does not comprise authorities and measures which enable different countries' financial supervisory offices to share their information in order to identify and measure systemic risks. It also lacks the power to intervene and mediate when different supervisory authorities of systemic financial institutions residing in multiple countries provide conflicting judgments. To monitor risks stemming from cross-national interconnectedness (known as macro-prudential regulation) a more integrated supervisory authority at a macro level needs to be developed. As Brunnermeier et al. (2009) stress, macro-prudential regulation needs to be imposed on systemic financial institutions whose financial situation significantly affects the stability of wholesale financial markets. In particular, such reforms are necessary in regional markets where interconnectedness between financial institutions is significant.

### *Financial Integration, Systemic Risk, and Financial Losses in Europe*

The necessity of implementing macro-prudential regulation is especially compelling for Europe, whose single market policy furthered financial integration and enlarged systemic risk through a high degree of intra-regional interconnectedness.

As a first step to identifying and assessing systemic risk, data on the international claims of banks can be referred to in order to obtain some evidence of deep financial integration in Europe. For example, based on the data from the BIS's *Quarterly Review* and other sources obtained from relevant national authorities, Eichengreen and Park (2003) show deeper financial integration within Europe, compared to other regions such as Asia.<sup>34</sup> As of the end of 2000, the consolidated international bank claims of BIS reporting banks which took place within each region divided by GDP were 33.9% in Europe (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom), 3.5% in Asia (Japan, Taiwan, Hong Kong, and Singapore), and 2.1% in the US and Canada. The high percentage of international positions in Europe indicates high intra-regional financial integration.

Similarly, according to the BIS data on consolidated foreign claims on an immediate borrower basis, as of the end of September 2009 the consolidated foreign claims of reporting European banks (Austria, Belgium, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland, and United Kingdom) in developed European countries were \$ 10.9 trillion, whereas their foreign claims vis-à-vis all countries including other developed and developing countries were \$ 20.3

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34. Barry Eichengreen and Yung Chul Park, "Why has there been less financial integration in Asia than in Europe?" UC Berkeley, Institute of European Studies: 4-7, 27 [online]; available from <http://www.escholarship.org/uc/item/6823v94w> (accessed on June 30, 2010).



trillion. This indicates that half of European international bank transactions took place within developed European countries.<sup>35</sup> However, the figures include banks' claims not only on private banks but also on governments and private households. Thus, they do not directly measure potential systemic risk through inter-bank lending relationships, as Martin Schöler (2002) argues.

De Nicolo and Kwast (2001) estimate systemic risk based on interdependencies from correlations of the stock returns of large and complex banking organizations (LCBOs).<sup>36</sup> Using their estimation methods, Schöler (2002) measures systemic risk in Europe by calculating the mean weekly rolling-window correlations of bank stock returns from 1980 to 2001 through the use of a 52-week rolling window.<sup>37</sup> The figure shows an increase in correlation especially after the introduction of the euro, and a constant growth of correlation in Europe over time.<sup>38</sup> In addition, after controlling for national factors, the figure for both the whole sample and a smaller sample of cross-border correlations shows an increase in correlations of bank stock returns over the 15 years.<sup>39</sup>

On the other hand, increased financial instability in Europe was shown by the financial losses concentrated in Europe stemming from the 2007-2010 financial crisis. According to the International Monetary Fund (IMF)'s estimates of global bank writedowns by domicile in 2007-2010, the cumulative loss rate is 8.2% for U.S. banks, 7.2% for U.K. banks, 3.6 % for Euro Area banks, 5.1% for other mature European banks (Denmark, Norway, Iceland, Sweden, and Switzerland), and 2.1 % for Asian banks (including Australia, Hong Kong SAR, Japan, New Zealand, and Singapore). The computed cumulative loss rate for European banks including U.K. banks, Euro Area banks, and other mature European banks is 4.6%, more than twice that for Asian banks.<sup>40</sup>

Given that much of the finance literature argues for the role of the inter-bank market and short-term financing structure in bank liability in contributing to the crisis, the role of increased systemic risk in Europe in financial market instability needs to be investigated. Although this paper does not address the causal relationship between inter-bank interconnectedness and financial losses from the crisis, this should be empirically investigated in a future study in order to model adequate macro-prudential regulation.

### *Institutional Reforms in Europe*

After Europe was hit by the financial crisis, the European Parliament approved an amendment of the CRD on May 6, 2009. This amendment aimed at enforcing stricter financial supervision over cross-national banking groups and improving the quality of capital adequacy and risk management over securitized products. In response to suggestions from the European Parliament, the EU Commission was required to submit detailed proposals by the end of 2009. Amongst other things, the policy agenda comprised the cross-country integration of financial supervision over pan-European financial institutions. Detailed policy measures to enhance supervisory integration under European institutions were included in the de Larosière Report, which proposed a new financial supervisory architecture in Europe on February 25, 2009, and most of which was later approved by the EU Commission. This proposal was written by an expert group formed in October 2008 under former International Monetary Fund (IMF) president Jacques de Larosière.

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35. Bank for International Settlements, "Detailed tables on provisional locational and consolidated banking statistics at end-September 2009," January 2010, Table 9B: Consolidated foreign claims of reporting banks – immediate borrower basis [online]; available from <http://www.bis.org/statistics/provbstats.pdf#page=7> (accessed on June 30, 2010).

36. Gianni De Nicolo and Myron L. Kwast, "Systemic Risk and Financial Consolidation: Are they related?" *Journal of Banking & Finance* 26, no. 5 (2002): 861-80.

37. Martin Schöler, "The Threat of Systemic Risk in Banking – Evidence for Europe," *Discussion Paper* No. 02-21, March 2002, Zentrum für Europäische Wirtschaftsforschung [online]; available from: <http://econstor.eu/bitstream/10419/24785/1/dp0221.pdf> (accessed on June 30, 2010).

38. *Ibid.*, Figure 1a, p10.

39. *Ibid.*, Figure 3b, pp19-20.

40. International Monetary Fund, "Global Financial Stability Report: Navigating the Financial Challenges Ahead," *World Economic and Financial Surveys*, October (2009): 10-11 [online]; available from: <http://www.imf.org/external/pubs/ft/gfsr/2009/02/pdf/text.pdf> (accessed on June 30, 2010).

According to the de Larosière Report, a new European institution, called the European Systemic Risk Council (ESRC) - later renamed the European Systemic Risk Board (ESRB) - needs to be instituted and presided over by the European Central Bank (ECB). Such an institution would replace the existing Banking Supervision Committee (BSC) within the ECB and would be assigned a new legal mandate for macro-prudential regulation and early warning. This proposal also suggests fuller regulatory harmonization of the European financial market.<sup>41</sup>

The proposal mandates national financial supervisory authorities to maintain their monitoring power in their jurisdictions in cooperation with reformed Level 3 committees. These committees, renamed the European Banking Authority, the European Insurance Authority, and the European Securities Authority, are to be assigned enforcement power and increased regulatory competence. The three new authorities would replace the existing CEBS, CEIOPS, and CESR respectively, and have representation at the ESRC, which decides on macro-prudential policies and provides early warning.<sup>42</sup>

Establishing the ESRC can improve the risk assessment process as well as cross-national cooperation in financial supervision. One of the lessons learned from the current financial crisis is that overall risk can be much larger than the aggregate of risk stemming from all individual financial institutions. As the de Larosière Report points out, “regulators and supervisors focused on the micro-prudential supervision of individual financial institutions and not sufficiently on the macro-systemic risks of a contagion of correlated horizontal shocks.”<sup>43</sup> Financial supervision is essential not only from a “micro-prudential” point of view to reduce the risk of individual bank failures to an acceptable level, but also from the “macro-prudential” and “macroeconomic perspectives” to ensure overall financial market stability.<sup>44</sup>

Moreover, the ESRC could facilitate cross-national cooperation in financial supervision. To understand the overall systemic risk across countries and maintain financial market stability, supervisory information needs to be shared cross-nationally. The proposed European framework ensures that supervisory information will be transmitted from national supervisors to the ESRC. In consideration of the impacts upon overall European financial stability, the ESRC can mandate corrective actions to national supervisors.<sup>45</sup>

#### 4. Conclusion

In conclusion, effective supervisory policy cooperation plays a significant role in enhancing the ability of regional and global communities to identify problems within networks across countries and increases their capacity to enforce more effective supervisory rules at a global level. However, as the preceding sections have highlighted, the developments in regional and global financial regulation and international policy cooperation up to the early 2000s were ineffective in mitigating the shocks of the 2007-2010 financial crisis. Despite their advanced regulatory development, the EU countries suffered a large portion of the financial losses.

This can be attributed to underdeveloped policy cooperation in monitoring, despite the increasing role of transnational actors and institutions, such as financial conglomerates and multinational companies, and internationally-merged and developed market platforms, such as stock exchanges and inter-bank markets, with primary responsibility falling on states. On the other hand, states weakened their ability to define and confront “collective action problems” which emerged at the cross-national level. These problems resulted from individual actors acting rationally, but their simultaneous behavior brought disastrous outcomes.

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41. The de Larosière Group, 38-39. Also see Fischer zu Cramburg, “Finanzmarktaufsicht I: Bericht der “de Larosière-Gruppe.”” *Neue Zeitschrift für Gesellschaftsrecht* Heft 9 (2009): 337.

42. The de Larosière Group, 57.

43. *Ibid.*, 11.

44. *Ibid.*, 17.

45. *Ibid.*, 29.

Elaborating on Hedley Bull's concept of "new medievalism," which identifies the weakening of the features of territorial sovereignty, Andrew Gamble argues:<sup>46</sup> "It focuses attention on the implications of the evident weakening of states in the last twenty-five years, which have seen boundaries become blurred and the source of authority less distinct. States have been obliged to share some authority with other actors, and their ability to command the exclusive loyalty of their citizens in some areas has dimmed."

Intra-regional interdependence between financial activities beyond states has required corresponding developments in monitoring capacity at a regional level. However, regional organizations have so far not provided alternatives to complement the weakening control of states. Jaime Pastor argues that the European Union in the 1990s developed "in a context of 'globalism' and neo-liberalism that pushed all the European states to abandon the Keynesian policies of former decades and to assume the criteria established in the so-called 'Washington Consensus.'"<sup>47</sup> This led to the crisis of "social" states, weakening the role of states as shock absorbers between the needs of international markets and the social interests of citizens.<sup>48</sup> Pastor goes on to argue that there is a "large 'gap' between the homogenization of economic policies in the EU on the one hand, and the absence of harmonization in social and fiscal policies on the other, opening the way to a social and fiscal dumping in the EU," thus undermining the degree of "legitimacy" of the states and of the EU among the people affected.

Leaving aside the growing problems of social welfare rights, such as equal access, income inequality, and safety-nets, the minimum task of maintaining the market itself and of providing the basic conditions for vigorous market competition has become a serious challenge in the EU. Despite the policy need for it to take a role in improving the market infrastructure, the EU has been provided with neither the political legitimacy nor the policy instruments needed to handle the issues at a regional level, especially when it comes to the use of each of its member countries' taxpayers' money.

In particular, the fiscal burdens necessary to support some basic trust in financial market stability in the euro area have been controversial issues among European citizens. The on-going dealing with the impact of the financial crisis on Greece has highlighted the gap between the political willingness among the major EU powers to respond to the fiscal crisis in Greece and their ability to provide emergency funds at a European level. The recent referendum in Iceland on refusing repayments to depositors in the U.K. and the Netherlands stresses the question of the location of the authorities who are in charge of the issues of financial stability endangered by cross-national financial institutions. Although financial stability has become a regional and global concern, the legal frameworks have not been developed to define the rules for burden-sharing, nor for implementing them.

Although all regional and international organizations have tackled the issues of legitimacy deficit and the lack of fiscal commitment, these issues have become even more prominent in Europe due to the deep regional integration within the EU economy and financial markets. Not only rules and standards to regulate markets, but also institutional frameworks for identifying problems and monitoring emerging risks resulting from interdependence need to be developed in a consensus-building process towards collective responsibility for financial market stability. This must be done without bringing about too many moral hazard risks.

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46. Andrew Gamble, "Regional Blocs, World Order and the New Medievalism," in *European Union and New Regionalism: Regional Actors and Global Governance in a Post-Hegemonic Era*, 2nd ed. Mario Telò (Hampshire: Ashgate, 2007), 31.

47. Jaime Pastor, "European Integration and the Future of the Nation State," in *Globalization and Regional Integration in Europe and Asia*, ed. Nam-Kook Kim (Surrey: Ashgate, 2009), 22.

48. *Ibid.*, 24.

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