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The Financial Crisis: A Wake-Up Call for Strengthening Regional Monitoring of Financial Markets and Regional Coordination of Financial Sector Policies?

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Abstract

How much can regional monitoring of financial markets and coordination of financial sector policies contribute to preventing and mitigating financial crises? This paper reviews and compares the experiences of Europe and Asia, which have taken different routes and have achieved different levels of regional financial integration. The analysis suggests that the harmonization and coordination of regulation and supervision, with a strong focus on maturity and currency mismatch problems, would constitute an important step toward mitigating the risk of crisis. However, regional monitoring and coordination will remain difficult as long as lender-of-last-resort activities and fiscal support packages are organized on a national level. Against this background, the crisis is a wake-up call for further progress on monetary integration in Asia along the lines of the reformed Chiang Mai Initiative. In Europe, the crisis reveals the need to establish a sustainable regulatory and supervisory structure that properly defines and reflects the responsibilities of regional and national authorities in crisis management, including its fiscal dimension.

JEL Classification: F15, F33, F36, G38

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1. INTRODUCTION

"An elaborate regulatory and supervisory structure - … - supports … integration …. That structure has prudential elements, aimed at ensuring that the system remains sound *even* as it evolves and becomes more integrated."

Hardy (2009, p. 3), Italics added

The global financial crisis has triggered a debate about almost every aspect of monetary and financial economics and policy. Issues are as fundamental as the validity of mainstream economic theory in analyzing and explaining financial markets, and as detailed as the design of securitized assets. Against this background, this paper analyzes the literature and recent experience with respect to regional monitoring and coordination of financial regulation as a way to i) improve overall regulatory performance, ii) increase the attractiveness of regional financial markets, and iii) mitigate the risk of crisis. The focus will be on the integration of financial markets and the associated strengthening of regional monitoring and coordination in Asia and Europe, as it has been argued that the current crisis reveals the need for deeper financial integration in both regions.[1]

The paper is structured as follows. After this introduction, I will review the links between financial crises, regulation, and integration (Section 2) and provide a platform for the assessment of developments in financial integration and regulation in Europe and Asia up to the 2007 financial crisis (Sections 3 and 4).[2] The implications of the current crisis for financial integration and regulation will be the focus of Section 5. Particular emphasis will be placed on issues related to the regulation of capital flows and specific investor types, as well as on the perceived need to harmonize regulations and finance-related taxes, with an eye to promoting more stable and transparent capital flows. The final section offers some tentative conclusions for policymakers involved in regional monitoring and coordination of financial regulation.

The main results of the analysis can be summarized as follows. Financial integration, like financial liberalization within a domestic economy, offers additional risk sharing and diversification opportunities that should foster investment and growth. At the same time, it raises the potential for maturity and currency mismatches, the main preconditions for any financial crisis. Thus, financial integration—at a global or regional level—has to be accompanied by the harmonization and coordination of regulation and supervision in order to prevent the concentration and concealment of maturity and currency mismatch problems.

Experience suggests that even the best approach to regulation and supervision will not be able to completely avoid incidences of financial crisis. An efficient crisis management strategy requires a lender of last resort (LOLR) and fiscal support activities. Accordingly, the crisis delivers the sobering message that regional monitoring and coordination of financial sector policies—as crucial as they are—will remain difficult as long as LOLR activities and fiscal support packages are organized at a national level.

[1] See for example Paust (2008), Kuroda (2008), and Asian Policy Forum (2009) for Asia, as well as ECB (2007a), de Larosière (2009), and Vives (2009) for Europe.

[2] In doing this, I will follow the approach taken in most of the literature on Asian financial integration in using the process of European financial integration as a benchmark for comparison; see for example ECB (2004), Plummer (2006), Mayes (2008), and Pasadilla (2008).

2. FINANCIAL CRISES, REGULATION, AND INTEGRATION—WHAT ARE THE LINKS?

2.1 Financial crises

The current financial and economic crisis has reached a dimension that—on a global scale—is only comparable to the Great Depression of the 1930s (Eichengreen and O'Rourke 2009). At the same time, financial crises have been a recurring characteristic of market economies for more than 150 years (Reinhart and Rogoff 2008).[3] Accordingly, financial crises are one of the most researched topics in the field of economics and finance. While a final answer on *the* origin and cause of financial turmoil is still outstanding,[4] there is a broad consensus that financial crises tend to have three distinct phases (Diamond and Dybvig 1983; Calomiris and Gorton 1991; Brunnermeier et al. 2009):

- a solvency shock affecting a relatively small part of the financial system caused by, for example, a decline in house prices;
- a general run for liquidity resulting from asymmetric information about the size and location of solvency problems that takes advantage of the substantial amount of maturity transformation services performed by financial intermediaries and markets—i.e., financing long-term assets with short-term liabilities, including bank deposits; and
- widespread insolvencies following the financial and real dislocations triggered by the run for liquidity and the associated decline in the use of the functions of finance (Bernanke 1983; Merton and Bodie 1995).

While financial systems have developed considerably since the writings of Bagehot (1873)—in particular by becoming more market-based (Brunnermeier et al. 2009)—financial crises have continued to follow this pattern, including the 2007–2008 financial crisis (Gorton 2008; Calomiris 2008).

2.2 The Lender of Last Resort and Financial Regulation

The key intervention in fighting (as opposed to preventing) a financial crisis has been the establishment of central banks as the LOLR (Goodhart 1987; 1988).[5] By lending freely to solvent but illiquid banks (or—as the founding act of the United States [US] Federal Reserve [hereafter Federal Reserve] put it—by providing for "an elastic currency" [Friedman 1990: 30]), central banks should be able to contain the contagion effects caused by fears of illiquidity and allow for on orderly unwinding of insolvent financial institutions.

In its LOLR function the central bank has to be supported by regulation and supervision, for two main reasons.

[3] Walter Bagehot's "Lombard Street", published in 1873, contains an analysis of causes, triggers, and measures to fight financial crises which—given the events that have occurred in mature economies since 9 August 2007 and on a global scale since 15 September 2008—has not lost any of its relevance.

[4] This statement also applies to the crisis that started in August 2007 (Truman 2009). Reinhart and Rogoff (2008) compiled a series of empirical regularities preceding banking crises in mature and emerging market economies that include asset price bubbles, large capital inflows, and credit booms. However, these features only constitute necessary but not sufficient conditions for a crisis to occur. For example, most lending booms do not end in a crisis, but gradually decelerate, providing for a "soft landing" (Tornell and Westermann 2002).

[5] This intervention is justified by the inherent externalities prevailing in finance, namely that the collapse of a financial institution or a financial market, for example the above mentioned solvency shock that affects a small part of the system, causes risk spillovers that affect the whole system: "At first, incipient panic amounts to a kind of vague conversation: Is A.B. as good as he used to be? Has not C.D. lost money? And a thousand such questions. ... And every day, as a panic grows, this floating suspicion becomes both more intense and more diffused; ... A panic grows by what it feeds on; if it devours these second-class men, shall we, the first class, be safe?" (Bagehot 1873: 24f.)

- First, financial regulation and supervision provide the LOLR with information about the solvency of financial institutions in normal times. This information is crucial because in the event of a crisis solvency and liquidity are intrinsically tied to each other, making it impossible to distinguish between the two concepts (Goodhart 1999; De Grauwe 2009).
- Second, regulation and supervision are needed because the LOLR's existence may induce banks and other financial intermediaries to engage in moral hazard behavior, speculating with depositors' and other investors' funds based on the belief that they might receive liquidity support to bail out depositors and creditors in times of crisis.

The financial crisis that triggered the Great Depression demonstrated the destructive powers of financial turmoil when the central bank is not adequately performing its LOLR function.[6] As a result, financial regulation and supervision have graduated from a more supportive function linked to LOLR activities to a central role in measures that should be taken to prevent financial crises in the first place.[7] This is why financial crises are almost automatically regarded as evidence of regulatory and supervisory failure, including in the current crisis (International Monetary Fund [IMF] 2009b).

In substance, however, the focus of financial regulation and supervision remained unchanged, namely, to mitigate the risk that liquidity runs would trigger a breakdown in credit and, hence, economic activity. In the US, following the Great Depression, the regulatory and supervisory strategy to achieve this goal was one of separation (embodied in the Glass-Steagall Act), i.e., to clearly distinguish between those institutions that could rely on the government's safety net, including LOLR support, in times of crisis and those that would not have access to those facilities (Leijonhufvud 2009). Beginning with the 1980 Depository Institutions Deregulatory and Monetary Control Act, this policy of separation was gradually retracted until finally being abolished in 1999 with the Gramm-Leach-Bliley Act. This change in the regulatory and supervisory approach reflected:

- The increasing academic support for financial liberalization based on the view that transactions in financial markets and with institutions can be regarded as the real world equivalents of the contingent contracts written in the moneyless Arrow-Debreu world (Winkler 1992; Buiter 2009).[8] This implied that almost any financial liberalization measure would bring the economy closer to the perfect arrangements in terms of risk sharing and diversification, based on the concept of complete markets. Financial markets and institutions, including banks, were seen as no different from real sector companies (Fama 1980), and thus not in need of financial regulation and supervision.[9] As they were considered to be efficient and run by rational market participants, bank-based financial systems were encouraged to build up capital markets in order to increase the diversity of funding sources and thus stabilize corporate financing in downturns (Financial Services Authority [FSA] 2009).

[6] That the Federal Reserve was not up to its task in 1929-1933 has been the consensus in the economic profession, even among antagonists of modern monetary theory and policy such as Milton Friedman and John Maynard Keynes.

[7] This is supported by the consumer (in this case depositor) protection arguments inherent in almost any justification of public sector regulation of private market activities (Dewatripont and Tirole 1996).

[8] As forcefully argued by Johnson (2009) these academic views were not unwelcomed in the political arena. Aizenman (2009) provides a model explaining that long periods of stability erode the support for seemingly costly regulation.

[9] These views were not shared by either Friedman or Keynes. Friedman (1948) was proposing a narrow banking system that would reduce, and in its pure form eliminate, the risks related to maturity transformation and thus ensure monetary stability. Keynes (1936: 160)—well aware of the risks linked to maturity transformation—would have ideally liked "to make the purchase of an investment permanent and indissoluble like marriage." He refrained from proposing this in earnest "for the fact that each individual investor flatters himself that his commitment is 'liquid' (though this cannot be true for all investors collectively) calms his nerves and makes him more willing to run a risk. If individual purchases of investments were rendered illiquid, this might seriously impede new investment."

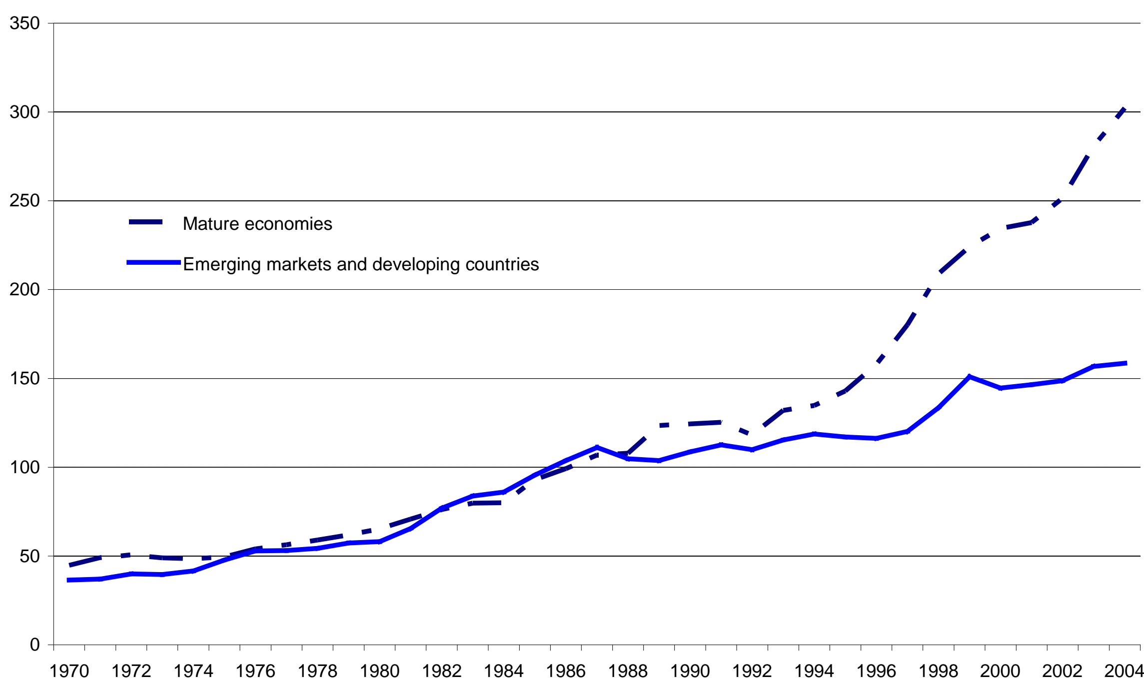
- The observation that financial institutions and markets had increasingly found many ways to circumvent their respective regulations.[10]

As a result, the separation between banks and non-banks vanished, leading to new financial products, e.g., the securitization of mortgage loans (Gramlich 2007), and the parallel and interlinked existence of regulated and shadow banking systems engaging in maturity transformation at an increasing scale (FSA 2009). In parallel, the focus of financial regulation and supervision increasingly shifted from liquidity to credit risk, most prominently illustrated by the capital adequacy regulations recommended by the Basle Committee on Banking Supervision (Basle I and II) (Brunnermeier et al. 2009).

2.3 Financial Regulation and International Financial Integration

In the mid-1980s, the regulatory debate reached the regional and global level as financial globalization, defined as the process of increasing financial transactions between different regulatory and currency areas, began advancing rapidly (Figures 1 and 2). In particular mature economies have seen a substantial increase in cross-border asset holdings (Deutsche Bundesbank 2008), mainly in the form of a two-way asset trade (Fecht et al. 2007).[11]

Figure 1: Sum of Total Foreign Assets and Liabilities, 1970–2004[12] (% of Gross Domestic Product [GDP])



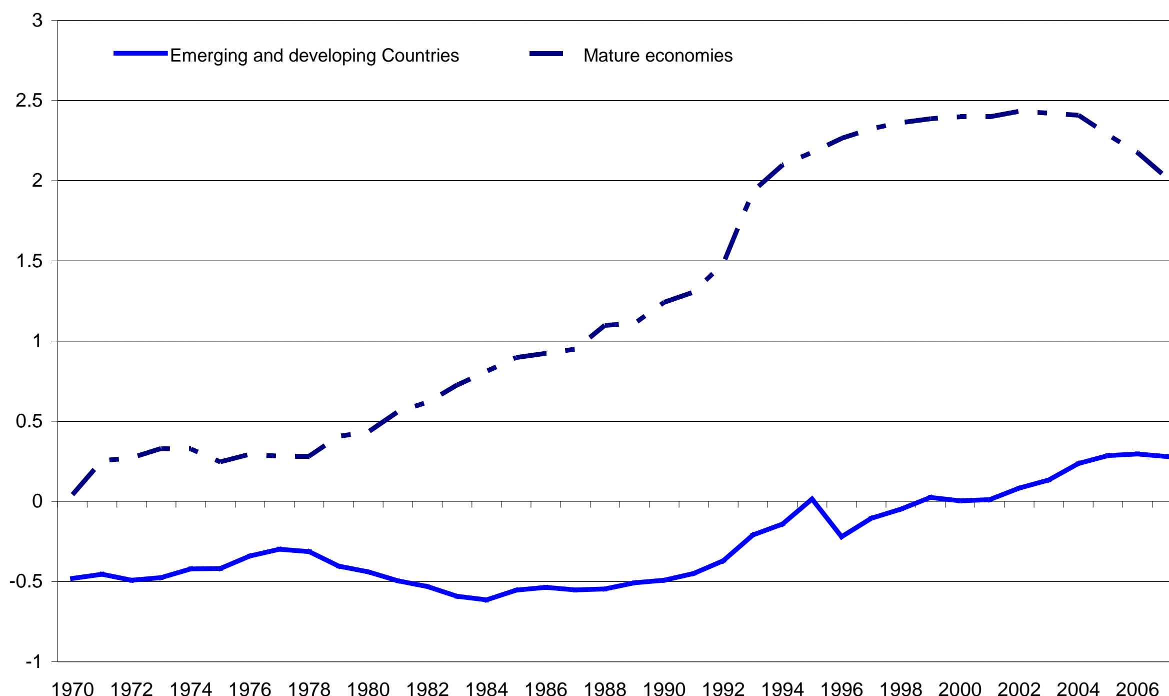
Source: Lane and Milesi-Feretti (2007); author's calculations.

[10] Brunnermeier et al. (2009) call this the "boundary problem" of any regulation, namely, a shift of activities from the regulated to the unregulated sector, which applies both nationally and internationally.

[11] Thus, financial integration among mature economies did not go hand in hand with rising net positions among mature economies (Georgopolous and Hejazi 2008), suggesting that financial integration has been associated with a higher degree of risk sharing and diversification (Kose et al. 2007) as well as the exploitation of different tax and regulatory regimes prevailing in different countries. Stulz (2008), taking national disclosure laws as an example, argues that in a globalized financial system national regulations and laws may have a strong impact on decisions regarding where to invest and where to issue securities, and thus on the size and competitiveness of national capital markets.

[12] For the full list of economies represented in this Figure please see the Appendix.

Figure 2: Capital Account Liberalization de jure, 1970–2006[13] (index)[14]



Source: Chinn and Ito (2006); author's calculations.

The theoretical justifications for pursuing policies aimed at increasing financial integration across borders have been the same as those used to call for financial liberalization domestically, i.e., to enhance opportunities for raising and investing capital, allow for better risk diversification and sharing, and to foster competition in financial services—in short—to complete financial markets and bring them closer to the ideal of efficiency embodied in mainstream neoclassical economic theory (Kose, Prasad, and Terrones 2007). In the case of emerging markets and developing countries, financial integration was also seen as a way to mitigate the alleged capital constraints faced by these countries. Financial integration and globalization would allow them to run larger current account deficits and raise investment above domestic savings, thereby spurring growth and development. Such net capital inflows would be in line with positive return differentials to mature economies and agents' preferences for consumption smoothing (Obstfeld and Rogoff 1996; Mody and Murshid 2005).[15]

[13] For the full list of economies represented in this Figure please see the Appendix.

[14] The index is based on IMF data on exchange rate restrictions and takes into account the existence of multiple exchange rates, restrictions on current account and capital account transactions, and requirements on the surrender of export proceeds. The higher the index value, the greater the openness to cross-border capital transactions. By definition the series for all countries/economies has a mean of zero.

[15] The empirical evidence in support of this proposition is mixed at best. Indicators of financial integration have not been found to be robustly positive and significantly linked to growth (Prasad et al. 2003). Thus, arguments in favor of financial opening have resorted to the "collateral benefits" of financial integration (Kose et al. 2007), i.e., fostering domestic financial sector development, strengthening the quality of institutions, and imposing discipline on macroeconomic policies. This is in stark contrast to the evidence pertaining to domestic financial development and growth which on a stand-alone basis unambiguously suggests a positive relation. The debate here is merely on whether this is a "causal" relation (Levine 2005).

2.4 International Financial and Currency Crises in the Post-Bretton Woods Period

While the financial system has become more globalized, the main instruments that have been employed by closed economies to mitigate the risk of turmoil and to fight crises when they occur have not been put in place. The international financial system lacks an international LOLR and a proper authority to issue and enforce financial regulations and supervise financial institutions. As a result, and in parallel to the increasing degree of de jure and de facto financial opening, the number of financial crises has been rising significantly since the mid-1980s (Reinhart and Rogoff 2008). The Scandinavian financial crisis in the early 1990s was one of the most prominent examples among mature economies (Jonung 2007). Later crisis episodes have mainly been recorded in emerging markets, with the Asian, Russian, and Brazilian crises of the late 1990s marking the peak of this phenomenon (Calvo 2006).

Financial integration has been largely taking place via wholesale markets.[16] This is why the classical bank run phenomena recorded in domestic banking systems in the early days of largely unregulated liberalization (Diamond and Dybvig 1983; Calomiris and Gorton 1991) were not directly observed in most financial crises prior to 2007. However, sudden stops of capital or capital flow reversals—the main ingredients in any emerging market financial crisis of the last 15 years—are conceptually equivalent to old-style bank runs (Chang and Velasco 2000) as cross-border lending has been increasingly used by emerging markets' financial institutions and markets to engage in maturity transformation (now denominated in an international currency, i.e., the US dollar or the euro or, before 1999, the Deutsche mark). While policy inconsistencies, strongly emphasized in the first and second generation currency crisis models, or domestic banking sector weaknesses, identified for pre-1997 Asia, may still represent the "fundamental" causes of crises—the solvency shocks that trigger the run for liquidity—the crises themselves have the same features observed in purely domestic settings. The main difference is that the classical 'run' for liquidity, i.e., by domestic depositors for domestic currency, is replaced by a 'run' for international liquid assets, i.e., by international wholesale markets for US dollars and euros, reflecting the dominant use of the US dollar and the euro as international investment and financing currencies (Eichengreen and Hausmann 1999). Local central banks are unable to perform the LOLR function if the private sector has been engaging in maturity transformation based on a foreign currency and is facing a sudden withdrawal of short-term foreign currency funding (Park 2009).

2.5 A Missed Wake-Up Call: the Asian Crisis

After the Asian crisis, a first serious call was issued for setting up an institutional framework at the international level comparable to the government safety nets that had been established in national economies following their experiences with financial turmoil in the 19th century (Calomiris and Gorton 1991). Specifically, an international LOLR (International Financial Advisory Commission 2000; Fischer 2001) and internationally accepted rules, regulations, and supervision for the rapidly advancing international financial system (Tietmeyer 1999) were proposed.

An international LOLR would have been able to address the lack of international liquidity that emerging markets have been facing in times of crisis by providing unlimited international liquidity on its own—either by issuing its own internationally accepted currency or by having unlimited access to borrowing from the Federal Reserve and the European Central Bank (ECB). Its establishment would represent a fundamental change in the workings of the international monetary system in that it would act to mitigate the risk of illiquidity that derives from international financial integration. However, it was rejected because of its far reaching implications with regard to both global monetary policy and the global powers required for

[16] Even within the euro area, financial integration is still limited on the retail level (see Section 3).

financial regulation and supervision (Jeanne and Wyplosz 2001). While some progress has been made on the regulatory front through the creation of the Financial Stability Forum, several weaknesses have prevented it from playing a key role in assessing the issues and vulnerabilities affecting the global financial system and identifying and overseeing actions to reduce them, including (Brunnermeier et. al. 2009):

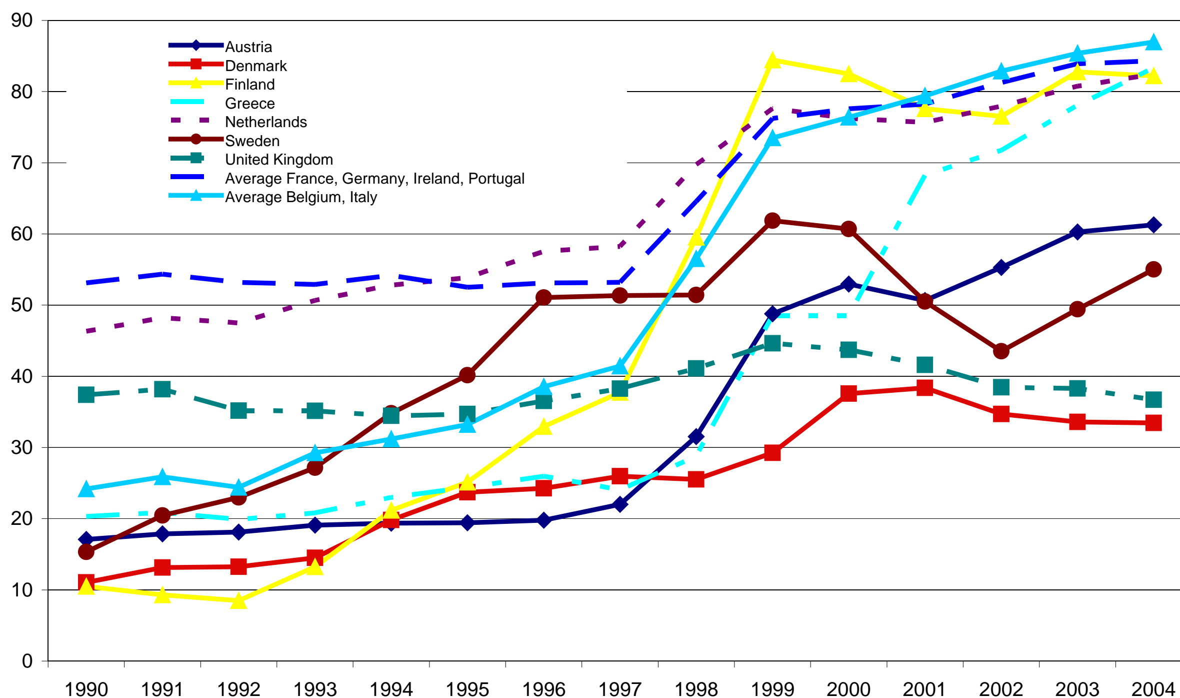
- a lack of formal representation for key emerging markets;
- the unwillingness of countries to give up regulatory and supervisory autonomy when they must bear the fiscal costs in times of crisis; and
- the continued focus on credit, as opposed to liquidity risk, as the main source of financial instability. This leads to the proposition that financial integration will almost unambiguously increase stability if credit risk is properly accounted for, mainly by requiring banks to hold sufficient capital.

As a result, when financial globalization resumed at an even more rapid pace in the early 2000s, it continued to be based on:

- The US dollar and the euro as the main currencies used in international financial transactions, even though the share of foreign liabilities denominated in foreign currencies and the share of foreign currency deposits in total deposits have been declining in emerging markets and developing countries (Figures 3 and 4). Thus, the Federal Reserve and the European Central Bank remained the de facto LOLRs of the international financial system (Bernanke 2008).
- A regulatory approach that largely relied on the global dissemination of standards and codes which often lacked consistency in implementation across countries, complementarity between the agreed standards and codes and national laws, and inclusiveness. Several countries—for various reasons, including those related to small size and development strategies based on providing favorable regulatory, supervisory, and tax terms for financial integration—opted out, raising issues of legitimacy and representativeness (Jordan and Majnoni 2002).[17]

[17] This outcome reflects the difficulties in achieving consensus on various fundamental and technical issues among about 180 independent countries. Thus, the deficiencies listed above do not imply that the amount of progress achieved should not be appreciated. However, the advances in de facto financial integration have been much more rapid, increasing the gap between what is needed from a purely economic point of view and what has been achieved in the given political setting.

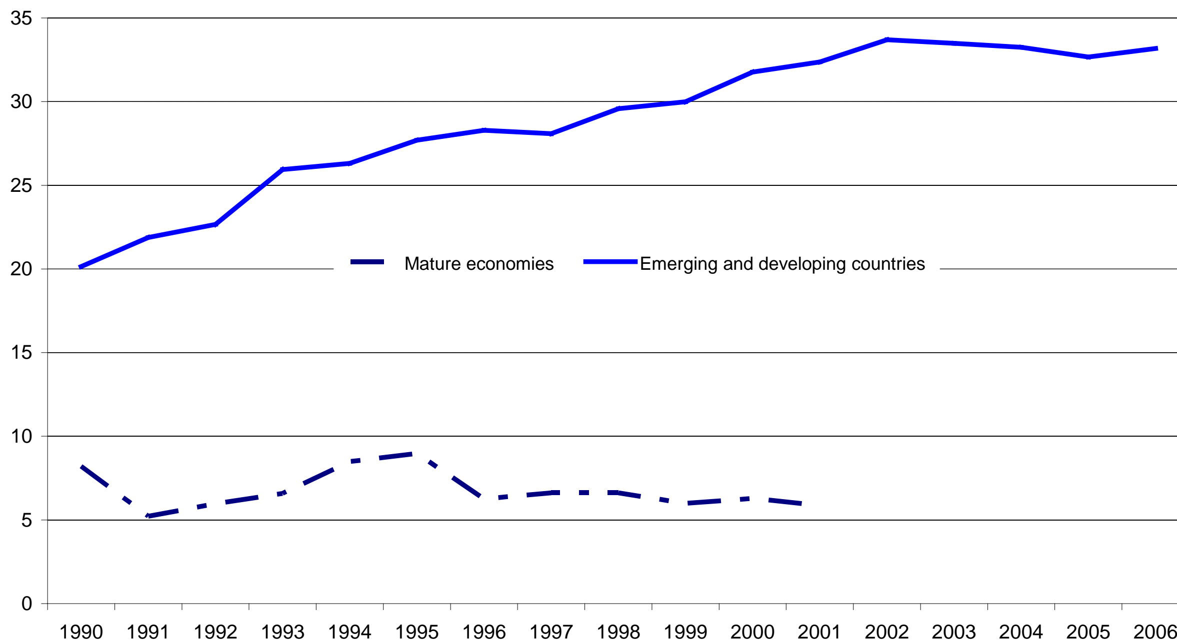
Figure 3: Share of Foreign Liabilities Denominated in Foreign Currency, 1990–2004[18] (% of total foreign liabilities)



Note: 1999 and 2000 data for Greece reflect extrapolation due to missing data

Source: Lane and Shambaugh (2009); author's calculations.

Figure 4: Share of Foreign Currency Deposits, 1990–2006[19] (% of total deposits)



Note: No data available for a range of mature economies, starting from 2002.

[18] For the full list of economies represented in this Figure please see the Appendix.

[19] For the full list of economies represented in this Figure please see the Appendix.

Mature economies: Austria, Denmark, Finland, Greece, Iceland, Italy, Japan, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, UK.

Source: Honohan (2008); author's calculations.

Within this process of financial globalization there have been several initiatives for regional integration that by their very nature aim at deeper integration compared to the global level (ECB 2004). The most important of them has been European integration, where monetary integration, i.e., the introduction of the euro, coincided with the end of the emerging market crisis period in the late 1990s. At the same time, and largely motivated by the crises of this period, efforts to foster financial integration emerged in Asia. Before returning to the current financial crisis, the following sections will review the experience of each of these integration efforts and the difference they have made in creating a more stable and efficient financial system.

3. REGIONAL FINANCIAL INTEGRATION AND REGULATION—THE PRE-2007 CRISIS EUROPEAN EXPERIENCE

3.1 Drivers of European Integration—from Trade via Money to Finance

Trade and money have been the main economic[20] forces driving European integration.[21] The liberalization of trade within the European Union (EU) was a logical extension of the first steps toward European integration, which focused on coal and steel. By 1968 the EU was already operating as a customs union. Monetary union became an issue of European integration in the late 1960s, when the deficiencies of the Bretton Woods system threatened exchange rate stability in Europe.

Finance and financial integration played only a limited role in the early days of European economic integration, reflecting the attitude toward finance and financial integration prevalent in the first three decades after World War II. Neither academics nor policymakers regarded finance or financial integration as important drivers of growth.[22] In the Bretton Woods system, capital account liberalization was the exception, not the rule. Within the European Union, many member states continued to apply capital account restrictions until the establishment of the Single Market in the early 1990s (Figure 5).

The Single European Market project, establishing the four freedoms—i.e., the free movement of goods, people, services, and capital—provided a major push for European financial integration. Policies toward financial integration were guided by the very principles upon which the Single Market had been based: state aids and anti-competitive behavior were banned, while laws on product standards and regulations, as well as taxes, continued to be different in each member state, in accordance with the principles of minimum harmonization,

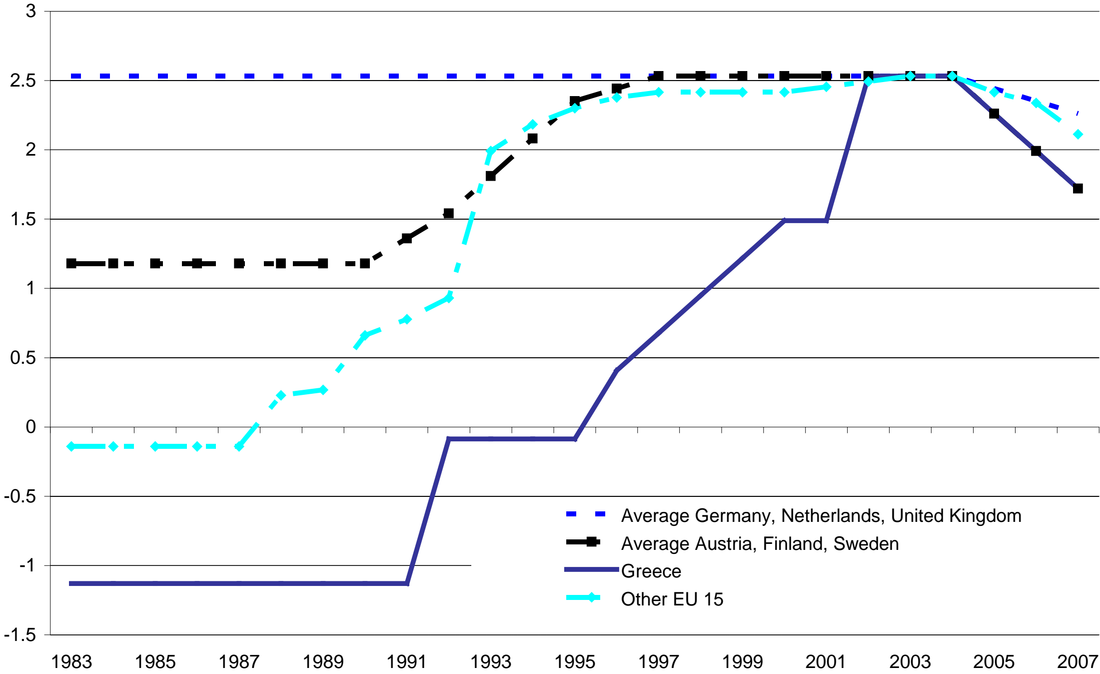
[20] It is well-known that, after the devastating wars in the first half of the last century, the original impetus for European integration was political. While this paper focuses on economic issues, the usefulness of recalling this key motivation of European integration seems to be increasing as time passes as it is also related to issues of coordination and monitoring with regard to financial regulation and supervision. This is because integration in terms of regulation and supervision requires a transfer of sovereignty to the supranational, in this case regional, level. The limited progress in recent years in combining European regulation with supervision may not only reflect the difficulties discussed in this section but also a declining general political will to cede national approaches in favour of regional ones.

[21] Trade and monetary policy are also the policy areas where the member states of the European Union (in the case of monetary policy, the member states of the euro area) have completely lost their policy autonomy and a unified European policy has been implemented.

[22] The academic literature on the finance and growth nexus only emerged in the late 1980s. Early papers often started with introductory quotes from Joan Robinson and Robert Lucas who—despite their disagreement on almost every other issue in economic theory and policy—seemed to support the notion that finance has no bearing on growth and development (Levine 1997).

subsidiarity, and mutual recognition (Jordan and Majnoni 2002). Since then, however, financial and monetary integration have been reinforcing each other, with financial integration fostering the process of monetary union, and monetary union strengthening efforts to increase financial integration.

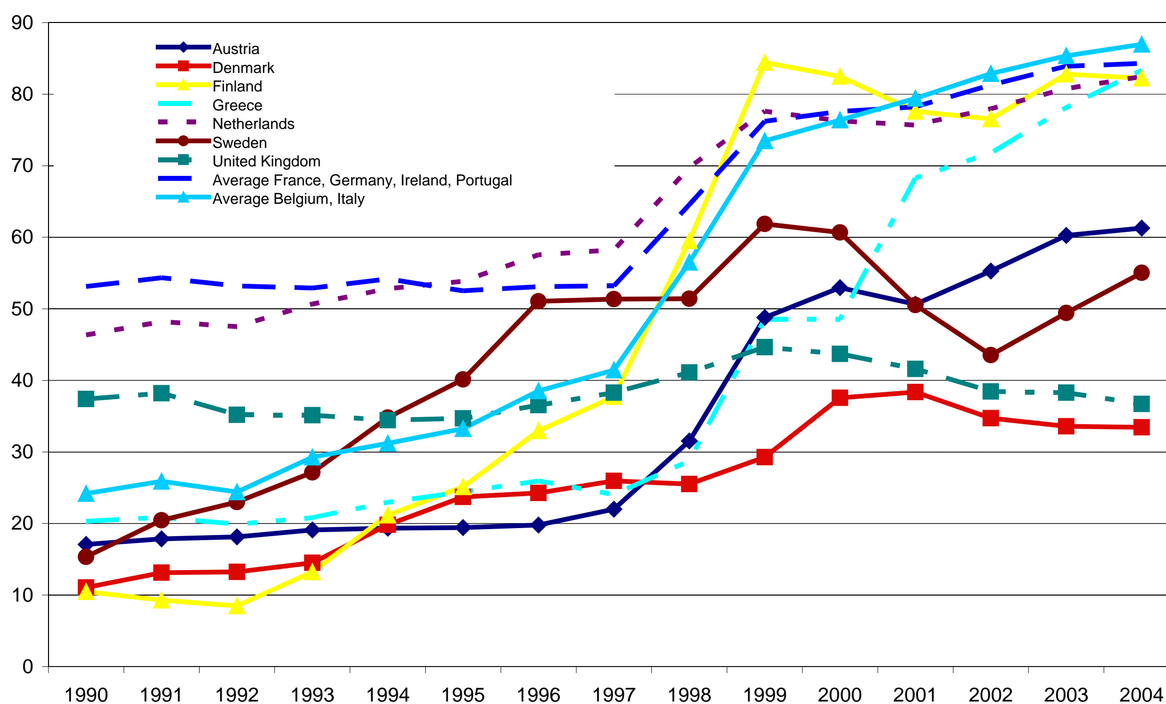
Figure 5: Capital Account Liberalization in the EU-15 de jure, 1983–2007 (index)[23]



Source: Chinn and Ito (2006), author's calculations

[23] The index is based on IMF data on exchange rate restrictions and takes into account the existence of multiple exchange rates, restrictions on current account and capital account transactions, and requirements on the surrender of export proceeds. The higher the index value, the greater the openness to cross-border capital transactions. By definition the series for all countries/economies has a mean of zero.

Figure 6: Foreign Liabilities Denominated in Domestic Currency (EU–15), 1990–2004 (% of total foreign liabilities)



Note: 1999 and 2000 data for GR reflect extrapolation due to missing data

Source: Lane and Shambaugh 2009, author's calculations

The quest for European Monetary Union was based on the idea that flexible exchange rates were incompatible with a single European market.[24] With the free movement of capital, however, interim solutions like the European Monetary system became unsustainable, due to the “inconsistent quartet” problem, which holds that countries cannot simultaneously pursue autonomous monetary policy, free trade, fixed exchange rates, and open capital accounts (Padoa-Schioppa 1995).[25] Thus, the debate on the links between monetary and financial integration was largely based on macroeconomic considerations. Aspects of financial stability did not play a role (Folkerts-Landau and Garber 1992; IMF 1998; Vives 2001).

With the introduction of the euro, the inconsistent quartet problem was solved by abolishing monetary policy autonomy in those EU countries adopting the common currency (Box 1).[26] From a financial stability perspective, this implied an almost instantaneous decline in currency mismatches in financial sectors of euro area countries because:

- the currency of denomination of foreign claims and liabilities among euro area countries became the domestic one; and
- foreign claims and liabilities towards non-euro area countries became increasingly denominated in euro, i.e., the domestic currency, due to the euro’s international role, which immediately surpassed the international role of euro legacy currencies (with the exception of the Deutsche mark).

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[24] The Delors Report, which laid the conceptual foundation for European Monetary Union, was titled “One market, one money.”

[25] In the international debate, this insight led to the “bipolar view” or “corner solutions view” on exchange rate regimes, which suggested that countries cannot open up their capital accounts while keeping the exchange rate stable and pursuing an autonomous monetary policy (Fischer 2001).

[26] In this sense, the European Monetary System crisis of 1992 served as a catalyst for European monetary and financial integration by clearly demonstrating the inconsistent quartet problem (Winkler 1994). Scheller (2004) provides a detailed account of the history of European Monetary Union.

As a result, the share of foreign liabilities denominated in domestic currency as a percentage of total foreign liabilities recorded a substantial increase in euro area countries, in particular in those countries with a legacy currency that had been barely used in international transactions before 1999. By contrast, the share of foreign liabilities denominated in domestic currency remained basically stable in the three EU-15 countries that did not join the euro area—i.e., Denmark, Sweden, and the United Kingdom (Figure 6).

Box 1: The Single Financial Market and Monetary Integration in Europe

All EU countries are subject to the Single European Financial Market. Iceland, Liechtenstein, and Norway, which are not EU members, participate as well by being member states of the European Economic Area. The candidate and potential candidate countries—by their very status—strive to become members of this market. Thus, Europe is characterized by a high degree of homogeneity with regard to de jure financial integration. At the same time, the European landscape is divided in terms of monetary integration into (i) countries that constitute the euro area, (ii) countries that are members of the Exchange Rate Mechanism II (ERM II) and are striving to become members of the euro area, (iii) countries that would like to join the euro area but are not able to do so because they are not EU members, (iv) countries that are EU members but do not want to join the euro area, and (v) non-EU countries that do not want to join the euro area.

Overview: The European Landscape of Monetary and Financial Integration

Institutional definitions	EU-15				
	EU-27				
	European Economic Area				EEA*
Regional definitions	**Western Europe**		**CEE/SEE****		**Western Europe**
Countries	Euro area member states (2006)[1)]	Denmark, Sweden, United Kingdom	New EU member states[2)]	Candidate and potential candidate countries[3)]	Iceland, Liechtenstein, Norway, Switzerland
Financial integration	EU Single Financial Market			Preparing to join EU Single Market at the time of EU accession	Taking part in the EU Single Financial Market
Monetary integration	Monetary Union	ERM II Independent floating	Monetary Union ERM II Currency Board, Managed and Independent Floating	Unilateral euroisation, currency board, soft pegs, managed and independent floating	Independent floating
Foreign currency borrowing					

- Domestic **- International**	negligible negligible	negligible moderate	substantial moderate	substantial moderate	negligible moderate
Form of finanical integration	Mainly cross-border flows		Cross-border flows and high degree of institutional integration with EU-15	Cross-border flows and high degree of institutional integration with EU-15	Mainly cross-border flows (but: Icelandic banks operating in other countries)

How important are these differences in monetary integration when analyzing the implications of the Single European Financial Market for financial stability, and the need for regional monitoring and coordination of financial sector policies? As indicated in the main text, the monetary environment plays a crucial role if financial integration is associated with substantial currency mismatches in domestic financial systems and cross-border asset holdings. In this respect, central, eastern, and south-eastern Europe (CEE/SEE) stand out compared to the other non-euro area countries in Western Europe, where cash and asset substitution in domestic financial systems is negligible. Moreover, financial integration of CEE/SEE countries takes a peculiar form as it is characterized by a strong institutional component, given the dominant presence of EU-15 banks in their domestic banking sectors.

Against this background, the analysis focuses mainly on the differences between the euro area and the CEE/SEE countries when discussing the monetary dimension of financial integration and regulation in Europe. By contrast, when reviewing regional monitoring and coordination of financial sector policies in Europe as such, the EU-27 is at the centre of the analysis.

The introduction of the euro revealed that the standard set of policies for integrating national markets had been insufficient to achieve a truly unified European financial market. For this reason, and also because the single monetary policy had to rely on a functioning and stable transmission mechanism based on integrated financial markets, financial integration finally became a key EU policy objective. Against this background, the Lisbon European Council endorsed the Financial Services Action Plan in March 2000, which consisted of 42 measures to achieve a single wholesale financial market and to establish an open and secure retail market by strengthening the rules on prudential supervision (Richards 2003).

3.2 European Financial Integration—The State of Play in the Euro Area/EU-15

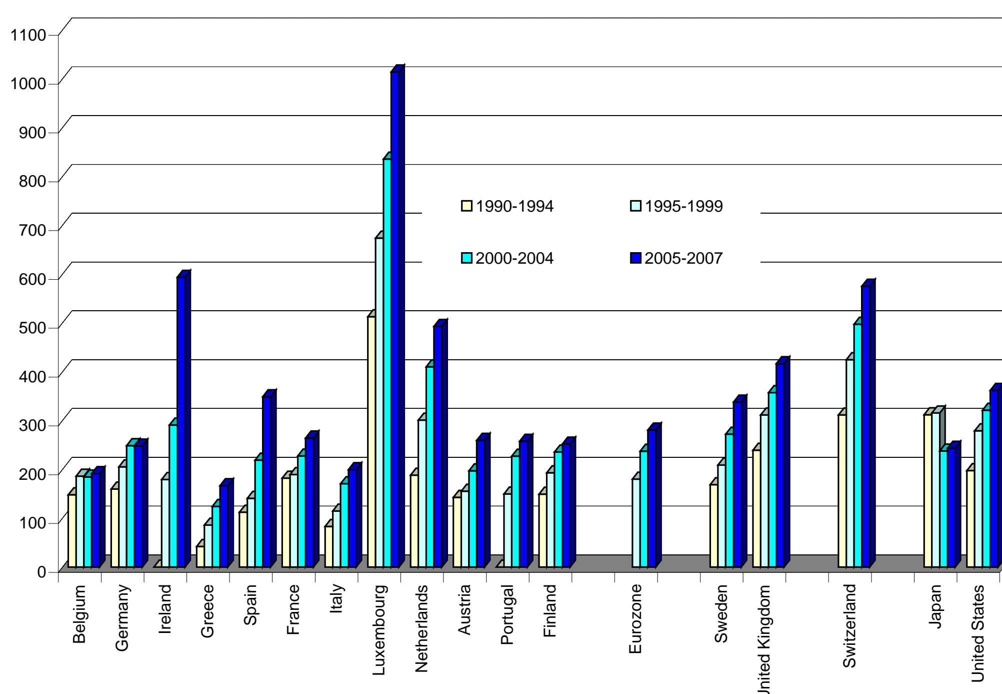
The introduction of the euro has been accompanied by a push toward financial integration in the euro area. In particular, wholesale markets have become much more integrated. For example, between January 1999 and August 2007 the cross-sectional standard deviation of the Euro Overnight Index Average (EONIA) lending rate across euro area countries fluctuated in a narrow band of 1 to 4 basis points (0.01–0.04%), with non-domestic euro area banks being the most active. Cross-country holdings of long-term debt among euro area countries have also increased, while corporate and sovereign bond spreads have narrowed substantially. There is also evidence that country-based diversification strategies with regard to equities have lost importance compared to sector-based strategies, indicating both integration and a reduction in home bias. Moreover, cross-border holdings of shares within the euro area have increased. In contrast, cross-border lending at the retail level has remained at low levels, even though it doubled between 1999 and 2007. Cross-country dispersion of the costs of borrowing from banks by the non-financial private sector has shown no tendency to decline, which may reflect cross-country differences in credit risk, taxation, regulation, supervision, and consumer protection. [27]

Progress in institutional integration, i.e., the Europeanization of commercial banks and their activities, has been mixed. The share of EU banking groups with significant cross-border activity in overall banking assets increased from 54% in 2001 to 68% in 2005, but only 16 out of 46 banking groups hold at least 25% of their EU assets outside their home countries (Trichet 2007). Overall, the European banking market, in particular in the EU-15, continues to be dominated by large national players with substantial cross-border activities, rather than by truly pan-European banks with a significant cross-border presence (ECB 2007a).[28]

[27] This paragraph is, to a large extent, based on ECB (2009a:11–30). While similar results have been obtained for the EU (see Commission of the European Communities 2009), Kalemli-Ozcan, Papaioannou, and Peydro (2009) provide evidence suggesting that the introduction of the euro has led to a higher level of integration amongst euro area countries compared to non-euro area mature economies, including the EU-15 countries that stayed out. However, comparing the degree of financial integration within Asia and Europe, Eichengreen and Park (2003) do not find evidence for the exchange rate regime, including the introduction of the euro, making a significant contribution to explaining the higher degree of integration in Europe compared to Asia.

[28] This view is also supported by the fact that subsidiaries of EU banks within the EU hold a major share of total foreign assets in the EU (ECB 2007a). By contrast, their domestic retail activities remain limited, as indicated by the comparatively low share of foreign-owned banks in total banking sector assets (below 30%) in the majority of the EU-15 (de Larosière 2009).

Figure 7: Size of Capital Markets in Selected Mature Economies (% of GDP)



Source: ECB (2009a).

European financial integration has also been characterized by strong and persistent cross-country divergences in the development of total foreign assets and liabilities as a share of GDP. While all countries have seen substantial increases, Luxembourg and Ireland are by far the most advanced EU countries, reflecting their status as international financial centers and their comparatively small size in terms of GDP (Figure 7). Luxembourg and Ireland have also recorded the most rapid increases in financial development, measured by capital market size.[29] Since the early 1990s, this indicator of financial depth has also doubled in Greece, Spain, Italy, and the Netherlands, while the United Kingdom and Sweden have come close to reaching this mark. By contrast financial development has been more subdued in Germany, France, Finland, and Belgium.

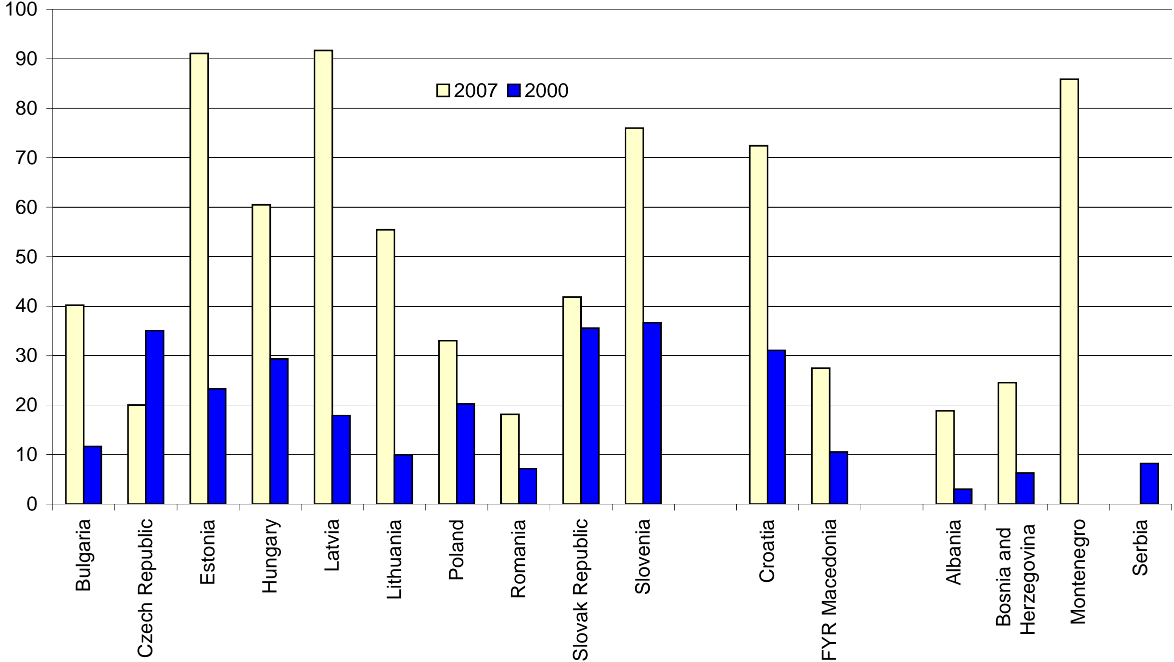
3.3 Institutional Financial Integration between the New EU Member States (as well as EU Candidate and Potential Candidate Countries) and the EU-15

Over the last decade financial integration between the EU-15 and the new member states (as well as EU candidate and potential candidate countries) has been advancing rapidly, albeit in a different form than that among the EU-15 countries. While integration as measured by standard quantity and price-based indicators is still lower, in some areas significantly lower, than within the EU-15 (Baltzer et al. 2008), the Europeanization of banks has reached an unprecedented level due to the massive entry of EU-15 banks into central, eastern, and south-eastern European countries (CEE/SEE). This has laid a strong institutional foundation for the financial integration process between both country groupings. By the end of 2007, EU-15 banks, in particular Swedish (focusing on the Baltic countries), Austrian, Italian, and Greek banks, had become major players in CEE/SEE countries, reflecting both traditional

[29] Capital market size is defined as the sum of stock market capitalization, bank credit to the private sector, and debt securities issued by the private sector to GDP.

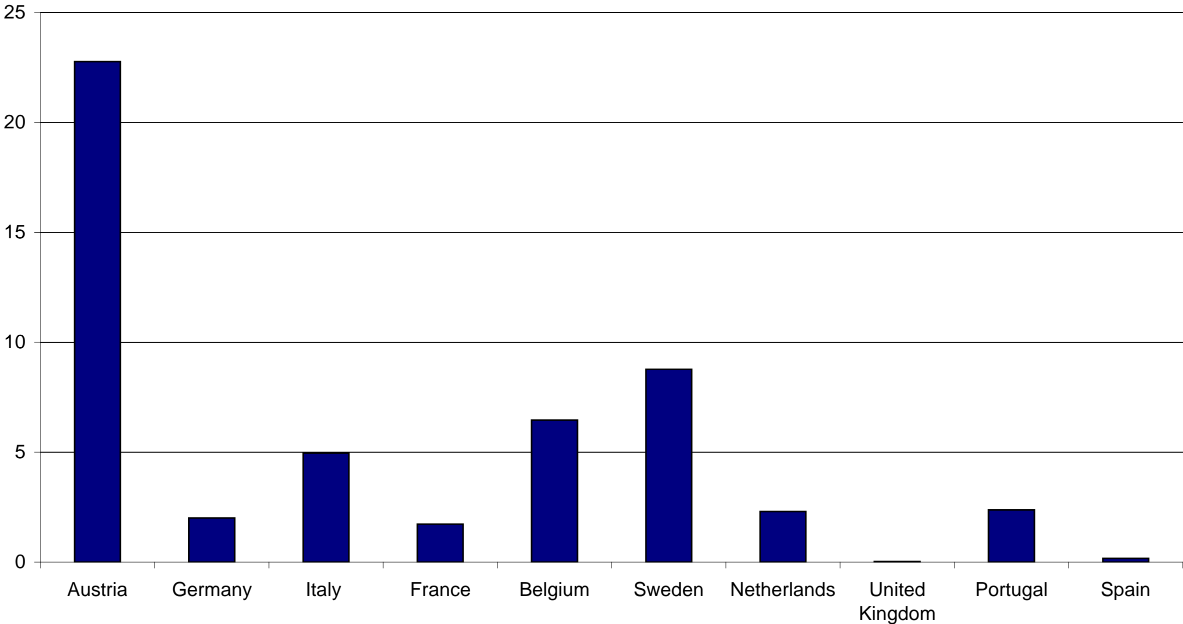
political ties and geographical proximity (Figure 8, see also ECB 2006). Conversely, the banking sectors of these EU-15 countries have become heavily exposed to the CEE/SEE countries in their total foreign activities (Figure 9, Árvai, Driessen, and Ötker-Robe 2009).

Figure 8: Share of Foreign-Owned Banks in Total Banking Sector Assets, 2007 (%)



Source: EBRD; author's own compilation.

Figure 9: Foreign Claims of Selected EU-15 Countries on CEE/SEE countries, end-2007 (% of total banking sector assets of EU-15 countries)

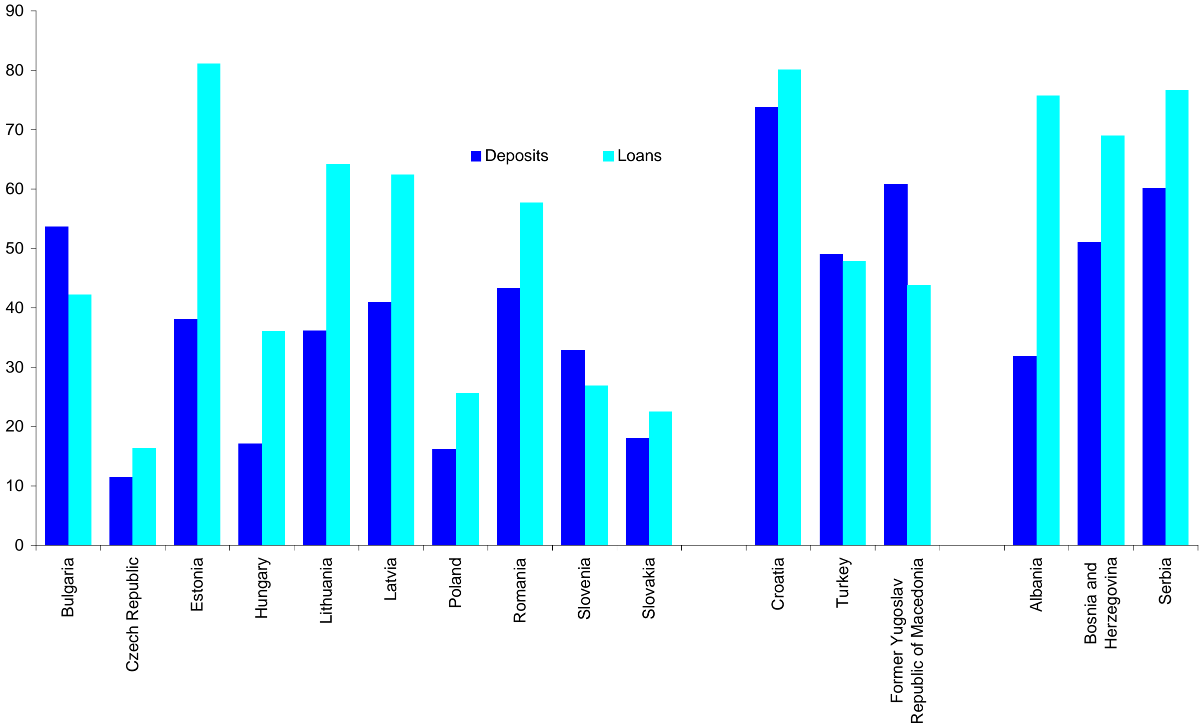


Source: Árvai, Driessen, and Ötker-Robe (2009); author's calculations.

EU-15 banks entered the region after a series of banking and currency crises befell CEE/SEE countries in the 1990s. By opening up their banking sectors to foreign players, these countries aimed at:

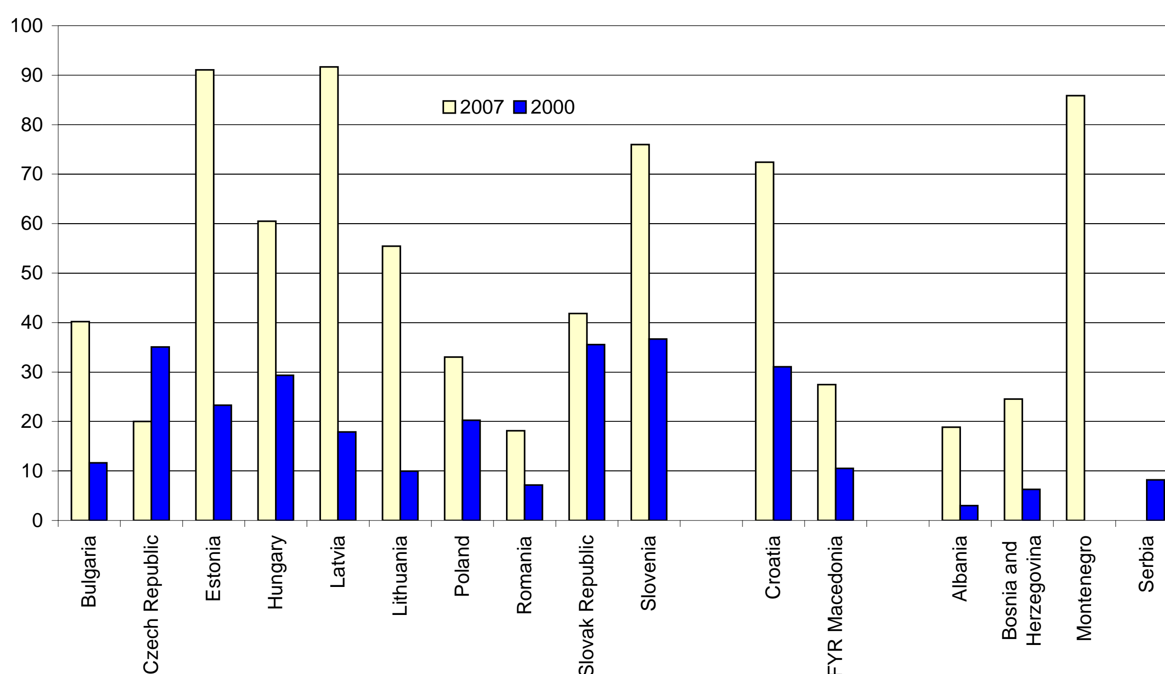
- putting domestic financial development on a more stable and sound institutional footing, cutting short a lengthy and bumpy process of endogenous financial development based on domestic institutions (Mehl, Vespro, and Winkler 2006); and
- fostering financial integration with the EU (at that time, the EU-15), i.e., facilitating and expanding cross-border flows. Moreover, the close relationship between subsidiaries and their respective parent banks seemed to provide indirect access to the relevant international LOLR, the European Central Bank. Liquidity support by the parent banks was taken for granted and seen as an appropriate protection mechanism against the risk of sudden stops and capital flow reversals (Winkler 2009; Winkler and Vogel 2009). The backing of the parent banks was crucial as financial development in CEE/SEE countries and financial integration with the EU-15 were characterized by substantial currency mismatches due to a high share of euro-denominated loans and deposits in domestic banking sectors (Figure 10, ECB 2007b).

Figure 10: Share of Foreign Currency Loans in Total Loans and Foreign Currency Deposits in Total Deposits in CEE/SEE, average 2000–2006 (%)



Source: ECB (2007b).

Figure 11: Private Sector Credit in CEE/SEE, 2000 versus 2007 (% of GDP)



Source: EBRD; author's own compilation.

From a home country perspective, the entry into a largely underdeveloped market characterized by high margins was regarded as highly profitable.[30] Moreover, CEE/SEE banking sectors were (are) set to become part of the single European market, given the EU accession perspective. Accordingly, the CEE/SEE countries held (hold) strong convergence promise in almost every respect, including per capita income and the regulatory and supervisory framework.[31]

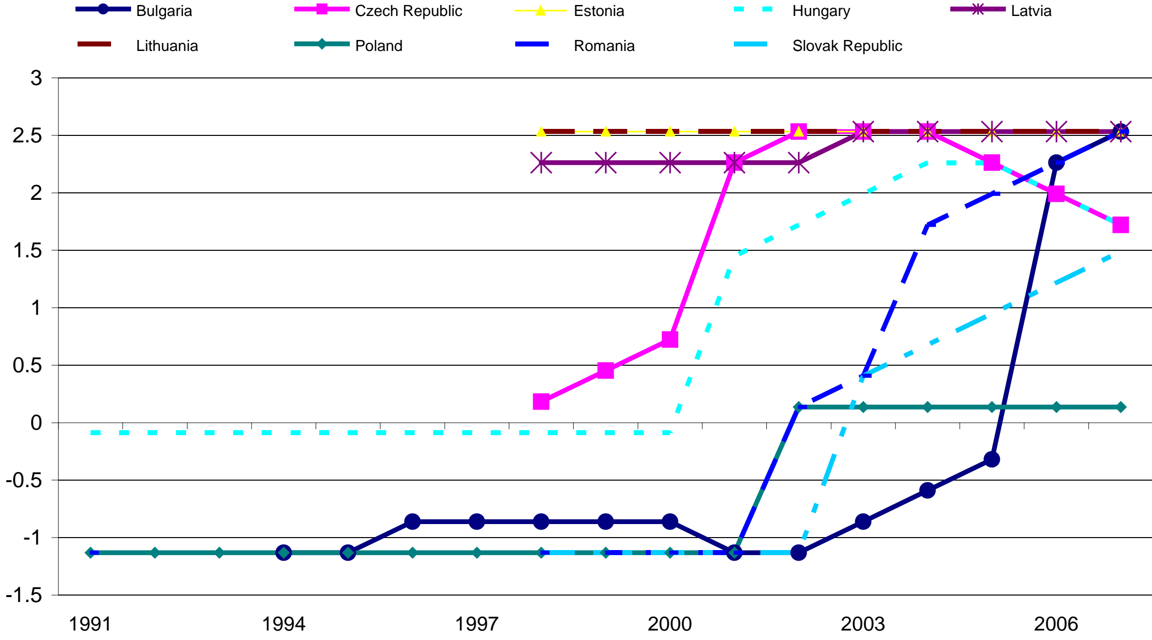
Institutional financial integration has been highly conducive to financial deepening in CEE/SEE over the last decade. Standard indicators, like the private sector credit to GDP ratio (Figure 11), have seen substantial growth over the period 2000–2007. Moreover, countries have continued to open up their financial systems de jure (Figure 12), following the requirements laid down in the *acquis communautaire*.[32] As a result, cross-country asset holdings (the sum of foreign assets and liabilities as a percentage of GDP) rose substantially, namely from 57%–162% in 1998 to 67%–251% in 2004.

[30] Until September 2008, subsidiaries in CEE/SEE were highly profitable. In many cases the revenue contributions of the subsidiaries exceeded their respective shares in the group's total assets, sometimes by wide margins.

[31] Claessens et al. (2008) stress the importance of familiar regulatory and supervisory frameworks in banks' decisions to establish subsidiaries and branches in other countries.

[32] The term *acquis communautaire* refers to the total body of EU laws.

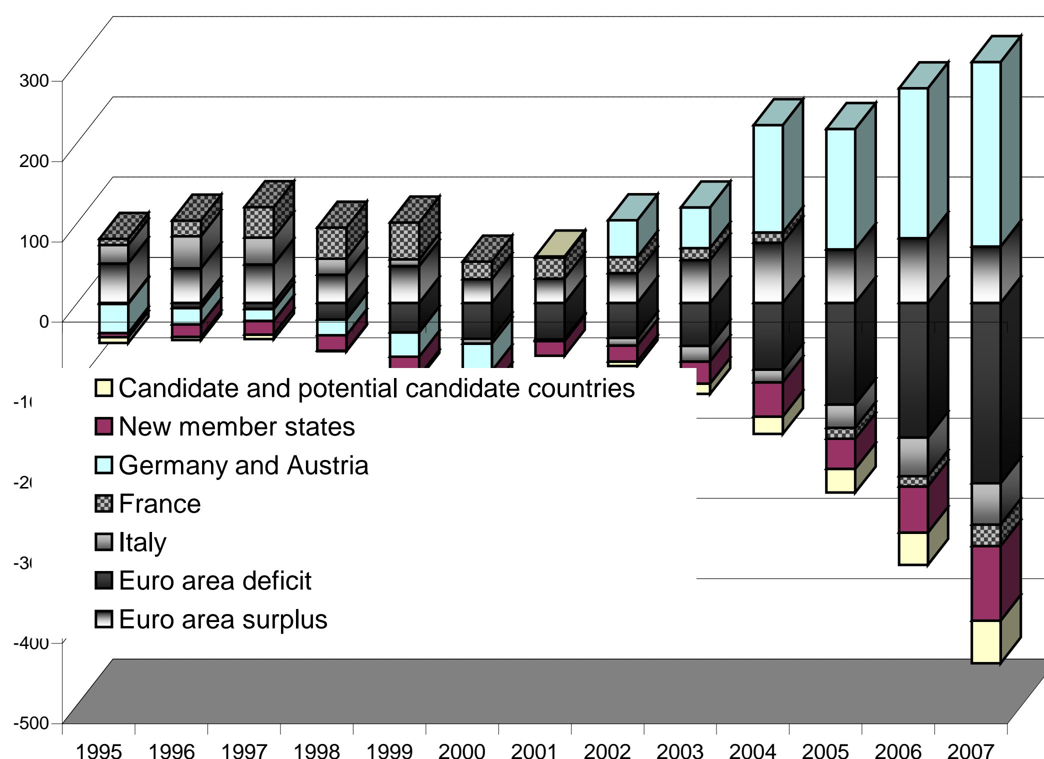
Figure 12: Capital Account Liberalization in the New EU Member States de jure (index)[33]



Source: Chinn and Ito (2006), author's calculations

[33] The index is based on IMF data on exchange rate restrictions and takes into account the existence of multiple exchange rates, restrictions on current account and capital account transactions, and requirements on the surrender of export proceeds. The higher the index value, the greater the openness to cross-border capital transactions. By definition the series for all countries/economies has a mean of zero.

Figure 13: Current Account Imbalances in Europe: Euro Area, New EU Member States and EU Candidate and Potential Candidate Countries, 1995–2007 (US$, billions)



Euro area deficit countries: Greece, Ireland (since 2000), Portugal and Spain

Euro area surplus countries: Belgium, Finland, Luxembourg, Netherlands

Sources: IMF; author's own compilation.

3.4 Rising Current Account Imbalances in Europe

Persistent and steadily rising current account imbalances within Europe have been a final characteristic of European financial integration over the last decade (Figure 13). Often overlooked due to the focus on global imbalances, strong capital flows to southern, central, eastern, and south-eastern European countries have fostered financial deepening, which has supported investment and consumption. The domestic demand-led growth process has led to increasingly negative current account balances, as both a percentage of GDP and in absolute terms. By contrast, the Benelux countries, Finland, and—since 2001—Austria and Germany, have been recording persistent and rising current account surpluses (Winkler 2008). Thus, European financial integration has provided support for the textbook model of capital flowing from rich to poor countries (Abiad, Leigh, and Mody 2007; Herrmann and Winkler 2008; Fabrizio, Leigh, and Mody 2009).

3.5 Regional Coordination and Monitoring

With European financial integration advancing rapidly, the need for strengtheNing coordination, cooperation, and regional monitoring has been increasingly recognized. The

so-called Lamfalussy Process[34], which establishes special procedures and committees to ensure an EU-wide coordination of national policies and institutions in the field of banking regulation and supervision, is the main instrument being used to secure a level-playing field as well as financial stability. It reflects the traditional principles of market building within the European Union and aims at squaring i) the principles of subsidiarity, harmonization, and mutual recognition with ii) the political will for leaving financial regulation and supervision in the hands of national authorities, and iii) the fact of a rising degree of European financial integration. [35] The process distinguishes between four 'levels' of coordination and cooperation, each with different tasks and responsibilities:

- Level 1: Framework legislation, setting the core principles and defining implementing powers (European Parliament, EU Council, and European Commission [hereafter Commission]).
- Level 2: Technical details of the core principles and measures for their implementation (Commission).
- Level 3: Proposals for the coordination of financial sector regulation and supervision, technical advice to the Commission (Committees of supervisors for the banking, insurance, and securities sectors).
- Level 4: Enforcing the timely and correct adoption of EU legislation as national law (Commission).

Since its implementation, the functionality of the process has been the subject of many reviews and mixed results have been reported. Most assessments have come to the conclusion that progress has been made, though the complexity of the process has made decision-making a difficult task (Hardy 2009; de Larosière 2009; Vives 2009). However, the main obstacle to achieving the stated goal of regulatory and supervisory convergence seems to relate to substance. Progress is slow because there is no agreed upon and shared benchmark to guide regulatory and supervisory convergence (Trichet 2007). Fundamental questions, such as those concerning:

- the need for, and extent and focus of, macro-prudential regulation and supervision compared to micro-prudential regulation and supervision;
- the need for, and extent of, supervision for different sectors of the financial system; and
- the appropriate regulatory and supervisory structure;

remain without answers that can claim to represent a consensus, on either the international or regional level. This constitutes a major difference from monetary integration, where a consensus was found in terms of both the institutional set-up of the future European Central Bank and the underlying principles for the conduct of monetary policy. Moreover, even when a consensus on a benchmark has been emerging, the details remain tricky and numerous. As a result, the process of regulatory and supervisory convergence in the EU has been characterized by features similar to those recorded at the international level, namely, the existence of a large number of regulatory inconsistencies amongst member states' regulations and between agreed regulations and national laws (de Laroisière 2009; ECB 2007a). In comparison with monetary integration, financial integration has been found to be technically much more difficult (Mayes 2008).

Regional monitoring, coordination, and decision-making regarding financial regulation and supervision are also affected by the fiscal dimension. In times of crisis, a government may have to intervene to stabilize the financial system by putting the taxpayers' money at risk,

[34] Named after the report by the "Committee of Wise Men" on the "Regulation of Securities Markets in Europe" headed by Alexandre Lamfalussy, the Lamfalussy Process laid out an approach to the financial regulation and supervision of securities markets which had been extended to the banking and insurance sector by 2002.

[35] A concise overview of the prevailing regulatory and supervisory arrangements in the EU can be found in Hardy (2009).

either in the form of guarantees or equity (de Larosière 2009; Brunnermeier et al. 2009). This fiscal dimension of financial regulation and supervision is not covered at the EU level, implying that decisions made on a majority basis are unlikely to be implemented in all countries. It also makes the option of establishing a European supervisory agency with regulatory powers for a unified European financial market, an alternative to the Lamfalussy process that was raised in the report itself,[36] unattractive as long as there is no EU fiscal policy, or at least a significant expansion of EU resources (Brunnermeier et al. 2009).

The difficulty in achieving regulatory and supervisory convergence is further aggravated by two asymmetries in European financial integration. The first asymmetry results from the fact that the countries operating international financial centers within the EU, namely, Ireland, Luxembourg, and the United Kingdom, compete in attracting global financial intermediation via differences in taxation, regulation, and supervision (de Larosière 2009). For these countries, any harmonization of regulation, supervision, and taxation bears the risk of undermining their strategies of securing domestic growth and employment via financial center status.

The second asymmetry results from the peculiarities of the integration process between the EU-15 and the new EU member states. Subsidiaries of EU-wide operating banking groups have reached the status of systemically relevant institutions in their respective host countries. By contrast, their parent banks may not have the same status vis-à-vis the respective home country supervisory agencies. Moreover, the individual subsidiaries may make only a small contribution to the consolidated balance sheet of the group supervised by the home country. In these cases, consolidated supervision in the home country may not properly respond to potential financial stability risks in the host countries (European Shadow Financial Regulatory Committee 2004). Given the possible fiscal and monetary policy implications for host countries if such risks were to materialize, host country supervisors have been demanding a stronger role in the supervision of parent banks' subsidiaries, implemented via a series of bilateral Memoranda of Understandings with the home supervisors. A more integrated supervisory approach has been made contingent on the existence of an integrated budget, deposit insurance, and—for non-euro area members facing the risk of international illiquidity due to currency mismatches—emergency liquidity assistance, i.e., the full spectrum of instruments that have been developed for national financial systems to deal with crisis situations (Bednarski and Starnowski 2007).

3.6 Summary: Mission Difficult—Financial Integration for a Unified Market (Euro Area) With and Without a LOLR (New Member States)

European financial integration has many dimensions, each reflecting the different levels of monetary integration and different forms of de facto financial integration. These differences are most pronounced between euro area countries and the non-euro area countries in CEE/SEE.

- Euro area countries have achieved a high degree of financial integration, mainly in the form of cross-border transactions. Moreover, they enjoy the benefits of a common, internationally accepted currency and unhindered access to LOLR facilities, domestically as well as internationally.[37] This has reduced the currency mismatch risks associated with financial integration to virtually zero.

[36] "if … the approach did not have any prospect of success, it might be appropriate to consider a Treaty change, including the creation of a single EU regulatory authority for financial services generally in the Community." (Lamfalussy 2001:41).

[37] In the current crisis the ECB and the Federal Reserve have been concluding unlimited swap arrangements with each other (ECB 2009b). It is unlikely that the central banks of all euro area countries would have been able to conclude a similar agreement with the Federal Reserve on a stand alone basis.

- By contrast, the financial sectors in the non-euro area countries in CEE/SEE are characterized by severe currency mismatches, reflecting a strong rise in financial integration as well as substantial growth in banking sector deposits and loans denominated in euro. However, the resulting liquidity risks seemed to be mitigated by the dominant presence of EU-15 banks in the region, which were assumed to be able to provide international liquidity support in times of crisis, whilst also benefiting from indirect access to the relevant LOLR, the ECB, via their respective parent banks.
- European financial integration has been characterized by rising current account imbalances which—in contrast to the imbalances recorded on a global level—have continued to be associated with capital flowing from rich(er) to poor(er) countries, in line with the predictions of standard economic theory. Euro area countries in southern Europe, i.e., Portugal, Spain, and Greece, as well as the CEE/SEE countries, have been the target of strong capital inflows for almost a decade. Supporting rapid credit growth, these inflows have laid the foundation for a domestic, demand-led growth process accompanied by persistently rising and high current account deficits. For the same period, Finland, the Benelux countries, Austria, and Germany have recorded surpluses.

While progress in de facto financial integration has been substantial, regulatory and supervisory convergence, even though more advanced than in other parts of the world, have been slow. Indeed, efforts to strengthen regional coordination and cooperation have been facing similar challenges to those on the international level, including:

- the fiscal dimension of regulation and supervision in times of crisis;
- the financial center status of some European countries which have been based—at least in part—on favorable tax, regulatory, and supervisory regimes; and
- cross-country asymmetries in terms of the systemic relevance of subsidiaries of major EU banking groups, which is mainly a result of the dominant positions of some EU-15 banks in the new member states.

4. REGIONAL FINANCIAL INTEGRATION AND REGULATION—THE PRE-2007 CRISIS ASIAN EXPERIENCE

4.1 The 1997 Financial Crisis as a Driver of Official Efforts to Foster Financial Integration

Economic integration in Asia has been developing very differently compared to Europe (Capanelli 2009). It has neither the institutional underpinning that has characterized European integration since the early 1950s,[38] nor the explicit political goal of establishing an Economic Community or Union. By contrast, economic integration in Asia has been largely market-driven. Depending on the country grouping chosen (Mayes 2008; Plummer 2006), in particular depending on the inclusion of Japan, the People's Republic of China (PRC), and the Republic of Korea (hereafter Korea), the Asian approach has yielded results that are close to the ones observed in Europe with regard to intraregional trade. By contrast, regional financial integration—while being more advanced than in some other regions—has been lagging.

Since the late 1990s, official efforts to foster integration have focused on financial development and integration. The main impetus for these efforts was the financial crisis of

[38] In this respect the Asian experience has also been different from integration attempts in other regions of the world (ECB 2004).

1997 (Plummer 2006). Accordingly, and in contrast to the European experience, financial stability issues have been at the center of integration efforts in Asia. The departure from the market-driven approach to integration was motivated by two lessons suggested by the 1997 crisis. First, the crisis was caused by a shortage of international liquidity following a sudden stop in capital flows, with Asian banking systems substantially engaged in maturity transformation based on the US dollar (Chang and Velasco 2000). Second, the crisis reflected the structural and institutional weaknesses of largely bank-based financial systems (Llewellyn 2002).

The Chiang Mai Initiative taken by the ASEAN+3[39] countries in 2000 has been the most prominent multilateral response to the currency mismatch problem of international financial integration (Mayes 2008). Given that the European approach, i.e., monetary union and the introduction of an internationally accepted currency for the region as a whole, was as much out of reach as the establishment of an international LOLR, countries opted in favor of a network of bilateral swap and repo arrangements under which they would provide each other with international liquidity assistance in times of need. Thus, the initiative focused on the very roots of the crisis, the shortage of international liquidity. While no Asian country is in a position to create US dollars, and thus cannot perform the role of an international LOLR, the network allows for the re-allocation of existing US dollar assets held by authorities in the region according to need. However, by choosing a bilateral format the effort lacked efficiency and coherence, as the excess reserves of a given country could not be used if it did not have a bilateral agreement with the country recording a liquidity deficit. Moreover, no regional surveillance mechanisms were installed. Thus, the benefactor countries that would be in a position to provide liquidity in times of need had no means with which to regularly assess the solvency of potential beneficiary countries in normal times. Accordingly, in order to mitigate the moral hazard risk involved in any LOLR activity, liquidity provision was made conditional on the adoption of an IMF program by the particular Asian country recording a liquidity deficit (Park and Wang 2005). Finally, with a total amount of only US$74 billion in early 2006, the arrangements were regarded as too small to provide an effective cushion in the case of a severe crisis.[40]

The massive build-up of foreign exchange reserves has been the most widely used unilateral response to the failure of international efforts to establish an international LOLR since the crises of the late 1990s (Choi, Sharma, and Strömqvist 2007). Between 1999 and 2007, foreign exchange reserves rose from 34.3% to 38.3% of broad money, 24.9% to 36.6% of GDP, and from US$62.9 billion to US$278.2 billion, taken from an unweighted average of a set of Asian countries.[41] With abundant foreign exchange reserves, countries were hoping to counter sudden stops and capital flow reversals on their own by providing international liquidity to domestic financial institutions and markets in times of need (Obstfeld, Shambaugh, and Taylor 2008).

The Asian bond market initiative represents a multilateral response to the argument that the 1997 financial crisis was caused by structural weaknesses in the financial sector, in particular by the dominance of weak banks with poor governance.[42] Those banks—it was argued (Yoshida 2009)—had been channeling funds accumulated in the region to international financial centers from where they were then re-channeled to the region, and this caused the maturity and currency mismatch problems that triggered the crisis. Efforts aimed at fostering

[39] Brunei Darussalam, Cambodia, Indonesia, the Lao People's Democratic Republic (Lao PDR), Malaysia, Myanmar, the Philippines, Singapore, Thailand, Viet Nam + the PRC, Japan, and Korea

[40] The funds made available "represent only 18%, 36%, and 38% of the funds arranged for the crisis in Indonesia, Korea, and Thailand, respectively." (Mayes 2008:9)

[41] The PRC; Hong Kong, China; Cambodia; India; Indonesia; Japan; Korea; the Lao PDR; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam. Excluding the PRC, the unweighted average of foreign exchange reserves held in US dollars rose from US$55.2 billion to US$174.0 billion.

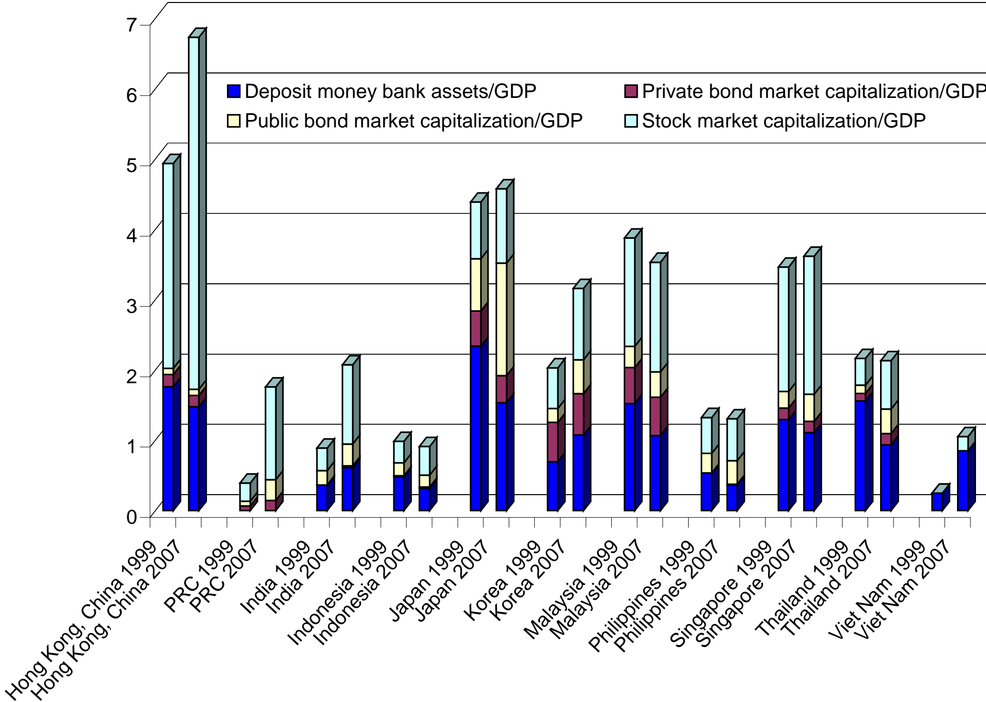
[42] At the same time, these efforts were compatible with the more traditional views in favour of financial liberalization and strengthening capital markets as means to foster financial stability, see Bell et al. 2006; Pomerleano 2008.

the development of capital markets in the region, most importantly the development of regional bond markets trading securities denominated in local currency, were hoped to contribute to greater financial stability by providing a platform for local savings to remain within the region and thereby mitigate the global asset shortage (Caballero 2006).

4.2 Financial Development and Integration in Post-Crisis Asia

Financial development in Asia has been rather stable over the last decade (Figures 14 and 15). Private sector credit issued by deposit money banks—as a share of GDP—was stagnant or even declined in several countries. Only Viet Nam and Cambodia were following the example of emerging Europe in showing strong growth in private sector credit. Bond markets have remained—on average—at about the same levels seen in 1999. However, several countries have been recording substantial advances in the amount of outstanding bonds in local currency, notably the PRC, India, and Thailand (Burger, Warnock, and Warnock 2009). A major exception has been stock markets which—in some countries, e.g., the PRC—have been recording strong gains in market capitalization.

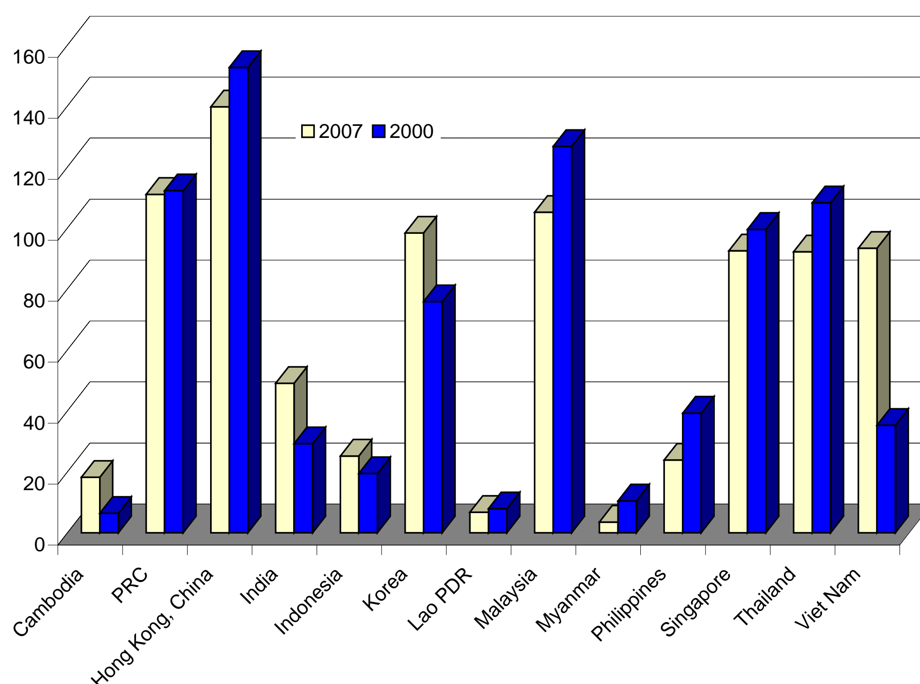
Figure 14: Capital Market Size in Asia, 2007 vs.1999 (% of GDP)



Note: missing data for deposit money banks/GDP China (1999,2007); private and public market capitalization/GDP Viet Nam (1999,2007); stock market capitalization/GDP Viet Nam (1999)

Source: World Bank, own compilation

Figure 15: Private Sector Credit in Asia, 2007 vs. 2000 (% of GDP)



Source: IMF; author's calculations.

Quantity-based indicators of financial integration reveal that intra-regional cross-border holdings of financial assets, e.g., portfolio investments and bank lending, have been recording slow growth and remained at low levels (Cowen and Salgado 2006). Intraregional equity flows rose from 10% (2001) to 15% (2004), mainly driven by activities from the region's financial centers (Hong Kong, China and Singapore) as well as Japan. Price differentials remained significant despite a narrowing trend over the last few years (Cowen and Salgado 2006).

Institutional integration via the entry of foreign banks has seen limited progress as well. While the share of foreign-owned banks in total banking sector assets has been increasing in several Asian economies (Pomerleano 2008; Herrmann and Winkler 2008), almost nowhere in Asia have foreign-owned banks gained a similar dominance as has been the case in emerging Europe (and in some Latin American countries). Moreover, there are only a few signs of emerging regional banks, i.e., pan-Asian banks with a significant cross-country presence providing retail services. Finally, progress in convergence of regulation and supervision has been slow and limited.

4.3 Summary: Mission (Almost) Impossible—Financial Integration Without a Market, Financial Stability Without a LOLR

The lack of financial integration in Asia has been intensively documented and analyzed (Garcia-Herrero, Yang, and Wooldridge 2008). Taking the experience of European financial integration as a benchmark, the low level of Asian financial integration might be traced to three observations:

- From a sequencing perspective, financial integration is difficult to achieve without progress in integration in other areas. In Europe, the swift integration of the new member states (and the candidate and potential candidate countries) has been driven to a large extent by the expectation that these countries would become part of a single market, encompassing not only finance, but also goods, services, and

labor, based on a unified regulatory framework in the form of the *acquis communautaire.*[43]

- From a market-building perspective (Padoa-Schioppa 2004), financial integration, and the associated coordination of financial sector policies, is one of the most difficult undertakings of economic integration. It lacks a benchmark model, is technically challenging and full of details, and has substantial fiscal implications in times of crisis. Moreover, it has a direct impact on the growth strategies of countries that have been opting to become international financial centers. Accordingly, even in Europe, progress in regulatory and supervisory convergence has been slow despite the vast experience with market building in other areas of integration.
- From a financial stability perspective, financial integration without monetary integration has strong implications[44] due to the risks arising from maturity and currency mismatches, as demonstrated by the Asian crisis of 1997. In Europe these risks have declined substantially with the introduction of the euro and the establishment of the ECB as a full-fledged LOLR for the euro area. While the Chiang Mai Initiative and the accumulation of foreign exchange reserves have been used to respond to these vulnerabilities, they remain imperfect and expensive substitutes for dealing with the stability challenges posed by maturity mismatches denominated in foreign currency.[45]

Facing these constraints, emerging Asian countries, in particular the PRC and India, have developed a generally skeptical attitude towards capital account liberalization (Aizenman 2009). Like many other emerging markets and developing countries (Lane 2009; Lane and Milesi-Ferretti 2008), they did not emulate emerging Europe by further opening up their capital accounts (Figure 16).[46] Instead, Asian countries aimed at lowering their exposure to foreign debt and other instruments, replacing it with a rising share of foreign direct investments in total foreign liabilities, which—in addition to the reserve build-up—can be interpreted as another unilateral policy approach to reduce vulnerability to sudden stops or reversals of capital flows (Figure 17). While a similar tendency could be observed in emerging Europe, it was much less pronounced than that seen in Asia and other emerging market economies (Deutsche Bundesbank 2008).[47]

[43] See also Herrmann and Winkler (2008). This argument is supported by the fact that, in terms of financial integration, Europe is characterized by a “great divide” (Berglöf and Bolton 2002) along the lines of the EU border (including the candidate and potential candidate countries).

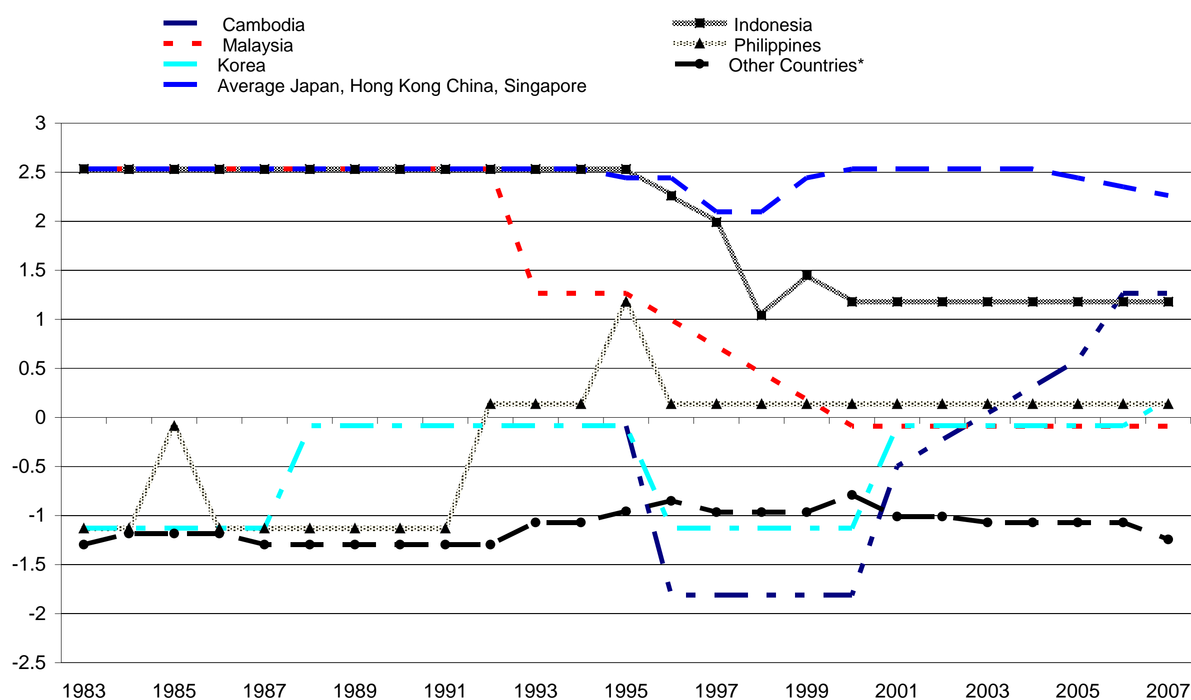
[44] Padoa-Schioppa (2003) stresses the interdependencies between monetary, financial, and economic integration.

[45] Accordingly, the Chiang Mai Initiative can be likened to other alternatives to central-banks-as-LOLRs in domestic economy settings, such as liquidity consortia or clearing houses (Gorton and Mullineaux 1987; Vives 2001).

[46] The long history of open capital accounts in Europe has been identified as a key policy variable explaining the difference in financial integration among European and Asian countries (Eichengreen and Park 2003).

[47] By contrast, changes in the composition of foreign assets and liabilities held by mature economies have been minimal and mainly reflect boom and bust periods in stock markets.

Figure 16: Capital Account Liberalization in Asia de jure, 1983 –2007 (index)[48]

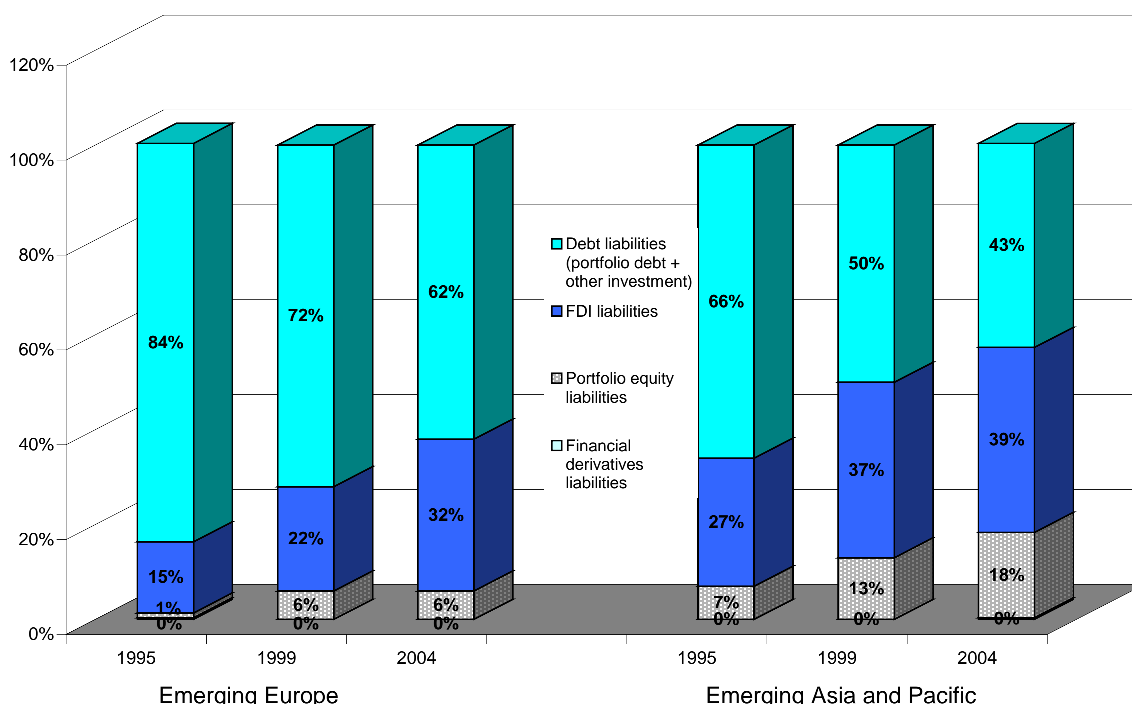


*Other countries: Lao PDR, Myanmar, Thailand, PRC, India, Viet Nam. All of these countries are characterized by a negative index on the review period.

Source: Chinn and Ito (2006); author's calculations.

[48] The index is based on IMF data on exchange rate restrictions and takes into account the existence of multiple exchange rates, restrictions on current account and capital account transactions, and requirements on the surrender of export proceeds. The higher the index value, the greater the openness to cross-border capital transactions. By definition the series for all countries/economies has a mean of zero.

Figure 17: Composition of Foreign Liabilities - Emerging Asia versus Emerging Europe, 1995, 1999, and 2004 (%)

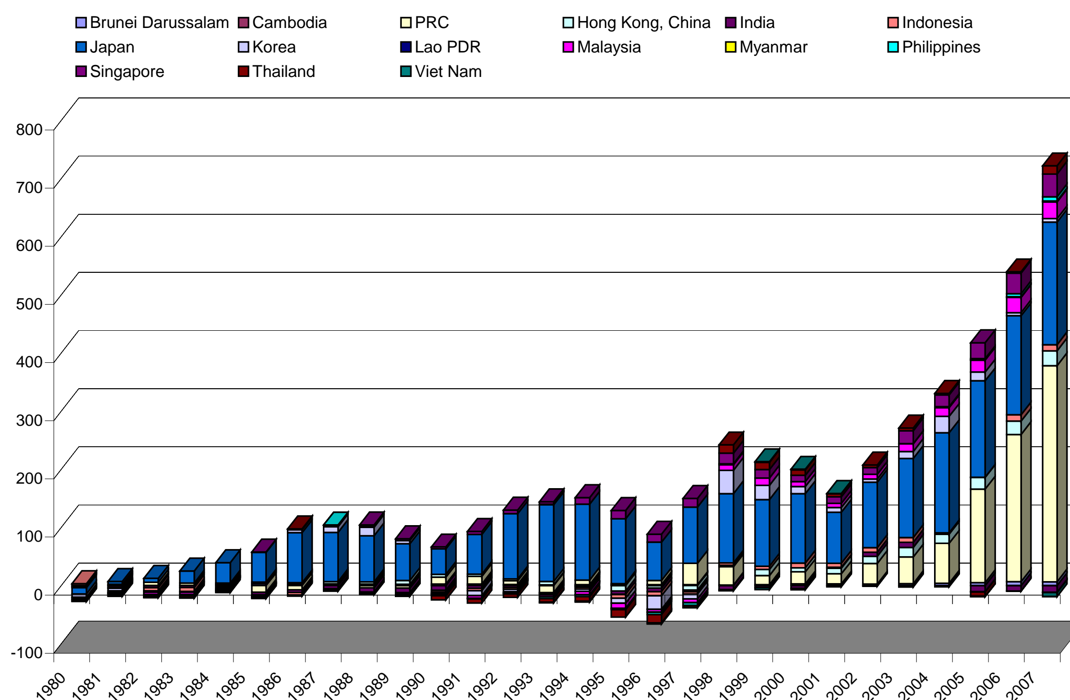


Sources: Lane and Milesi-Ferretti (2007); author's own calculations.

The credibility of exercising LOLR activities based on a large stock of foreign exchange reserves depends to a significant extent on the creditor status of the relevant country. This status is a function of the current account balance. Accordingly, most countries in emerging Asia have been running current account surpluses (or at least avoiding significant current account deficits) over the past decade (Figure 18), another feature they share with many other emerging markets and developing countries, with the notable exception of emerging Europe (Hermann and Winkler 2008). Against this background, the export-led growth strategy pursued in the region has been as much a matter of necessity, on financial stability grounds, as of choice. The need for building-up foreign exchange reserves and recording current account surpluses will only diminish if emerging market countries are provided with a guarantee of sufficient international liquidity assistance in the event of sudden stops and capital flow reversals (Winkler 2008; Portes 2009).[49]

[49] In this sense, the Bretton Woods II system (Dooley, Folkerts-Landau, and Garber 2003) has been stable and is likely to persist until emerging markets and developing countries can secure access to an international LOLR or other forms of guarantee against the risk of sudden stops and capital flow reversals (Dooley, Folkerts-Landau, and Garber 2009).

Figure 18: Current Account Imbalances in Asia (US$, billions)



Source: IMF; author's own calculations.

5. REGIONAL FINANCIAL INTEGRATION, COORDINATION, AND MONITORING—EXPERIENCES WITH THE FIRST GLOBAL FINANCIAL CRISIS OF THE CENTURY

5.1 The 2007–2008 Financial Crisis

The current financial crisis started in August 2007 when, in mature economies, maturity transformation via money markets stopped functioning, triggering massive central bank interventions in a classical LOLR fashion. The run for liquidity (the drying up of market and funding liquidity at the same time) was preceded by a solvency shock in the US subprime mortgage market, the size and location of which were largely unknown as exposure to subprime loans had been spread via derivative markets to most mature economies' banking systems. By contrast, financial institutions and market participants in emerging Europe and Asia had little exposure to these instruments (Ee and Xiong 2008; Bracke 2008). Thus, spillovers to emerging markets remained contained in the first period of the crisis. [50] Exceptions were countries like Kazakhstan and Russia, which featured private sectors that had been massively accumulating international debt, funded via wholesale money and capital markets (Winkler and Vogel 2009).

The failure of a systemically important US investment bank, Lehman Brothers, marked the beginning of the second period of the crisis. This time the solvency shock was large and global. The run for liquidity was triggered by a simple question: If Lehman Brothers can fail,

[50] This was the heyday of the decoupling theory, as the boom in emerging markets seemed to continue and—given the monetary easing in the United States and the pause in monetary tightening in Europe—inflation was identified as the major challenge in emerging markets. This raised questions about the appropriateness of exchange rate policies based on the US dollar and the euro as anchor currencies (Remsperger and Winkler 2008).

which institutions, investments, loans, securities, and deposits are still safe? The answer from internationally operating market participants was: US treasury bills, German treasury bills, US dollars, and euro cash. As a result, the global financial system collapsed, as it had been performing maturity transformation to an extraordinary extent based on US dollars and euros (McGuire and von Peter 2009; FSA 2009). Almost every financial institution, sector, and country, including mature economies [51], was confronted with a "bank run" like phenomenon, a sudden stop, which created a strong need for support from the international LOLRs—the Federal Reserve and the European Central Bank—or from the LOLRs' imperfect substitutes, i.e., foreign exchange reserves that had been accumulated in the past, to provide the private sector with international liquidity (Winkler and Vogel 2009; Obstfeld, Shambaugh, and Taylor 2009). [52] The fiscal repercussions of the crisis have been tremendous, as:

- banks with a liquidity shortage and no (or not enough) collateral to approach the LOLR had to rely on government guarantees to secure funding; and
- several banks became (technically) insolvent, due to the loss of value of assets that had become illiquid (the so-called "toxic assets") or due to credit losses that reflected the severe recession in the real sector that followed the Lehman Brothers' collapse.

5.2 The Impact of the Crisis on the Design of Financial Regulation and Supervision

The financial crisis triggered a debate on fundamental views of the very nature and functioning of financial institutions and markets (FSA 2009). [53] The complete markets analogy, the assumption of rationally behaving agents, and the strong regulatory and supervisory focus on exogenous credit risk, have been replaced by the fallacy of composition of safe institutions and liquid markets, the concept of self-amplifying dynamics, and a renewed emphasis on endogenous liquidity risk (Brunnermeier et al. 2009; Greenspan 2008; Eichengreen 2007). As in the 1930s, this change in views has reshaped the debate on the fundamental principles of financial regulation and supervision, and put macro-prudential regulation and supervision at the centre of efforts to mitigate the risks of financial crises emerging from maturity and (in the case of international markets) currency mismatches. Moreover, as in the 1930s, the crisis has its roots in the high degree of integration and overlapping between financial institutions and capital markets, this time via the shadow banking system (IMF 2009b). This integration has been conducive to the strong rise in maturity and (internationally) currency mismatches in the formal and shadow banking

[51] See the list of swap agreements among G-10 central banks (ECB 2009b), that spontaneously created an informal, global Chiang Mai Initiative. For the first time emerging market economies have also been granted access to mature economies swap and repo facilities (Bernanke 2008).

[52] In this sense the global financial crisis has lent support to the view that the Asian crisis of 1997—regardless of country specifics such as macroeconomic imbalances (e.g., current account deficits) and financial sector weaknesses (e.g., crony capitalism)—was triggered by an international run for international liquidity that inherently cannot be coped with by countries not issuing an international currency (Eichengreen 2009; Portes 2009).

[53] The debate on whether regulatory failure or lax monetary policies, in particular in the United States (see, for example, Taylor 2008), and/or global imbalances (see, for example, Portes 2009) represent the fundamental cause(s) of the crisis is still ongoing and goes far beyond the scope of this paper. However, the analysis suggests that global imbalances are first and foremost a symptom of the much deeper failure to provide the international financial system with an international LOLR and proper financial regulation and supervision . In line with this view, there is little evidence that global imbalances as such, i.e., the rising exposure of emerging markets to the United States financial system played a major role in causing the crisis (IMF 2009a), as emerging markets have not stopped lending to the US, not even after the housing bubbLe burst in August 2007. This view is supported by the fact that the US dollar crisis, predicted by many, has not occurred (Hausmann 2009). US monetary policy might have been too lax (which is—given the inflation record in the US (and mature economies in general) over the last decade—subject to debate), but the question remains whether the respective policy mistakes would have caused "a shock of such severity" (Calomiris 2008:13) if they had been made in a more prudent regulatory and supervisory environment.

systems (FSA 2009), which ultimately transformed losses in the small subprime mortgage segment of the US financial market into a global crisis.

In contrast to the 1930s, however, the separation approach to regulation and supervision seems to lose out against the alternative strategy, whereby "all systemically important financial institutions, markets, and instruments should be subject to an appropriate degree of regulation and oversight" (G-20 Communique 2009).[54] The designation as 'systemically important' will not only be a function of size and concerns about solvency, but also of the perceived potential of an institution to form "part of a herd" (Brunnermeier et al. 2009), and also by liquidity concerns related to the massive increase in maturity transformation being performed by an increasingly integrated financial system, both domestically and internationally.

Against this background, specific investor types, like hedge funds, should be regulated, but not because they are specific (or, in the case of hedge funds, nontransparent) as such, but because they increase—by the very nature of their business models—the degree of maturity transformation occurring in the financial system and thus create systemic risk.[55] This risk can only be tolerated when the core of the system, the banking system, is strictly separated from such investor types. If this is deemed to be infeasible (or if this is deemed to be inefficient and distortive) all investor types that raise systemic risk by organizing maturity transformation will have to be regulated, nationally, regionally, and internationally. For the very same reason, a harmonization of regulations and finance-related taxes is needed in order to promote more stable and transparent capital flows. A major precondition for any meaningful assessment of global or regional stability risks is reliable information on cross-border links and exposures. This kind of information was not available before the crisis. It is still missing, which possibly also reflects the reluctance of the governments of financial center countries to provide such data, for fear of undermining the competitive advantage of their respective centers (Issing and Krahnen 2009).

5.3 The Impact of the Crisis on Regional Financial Integration: Europe

The financial crisis is a global one. Thus, its implications are also global. However, the crisis has had a profound impact on regional financial integration, in Europe and in Asia, and revealed the strengths and weaknesses of the integration strategies pursued in both regions.

In Europe, the crisis has confirmed the advantages of having access to a regional and international LOLR (Eichengreen 2008b). It is difficult to imagine that—assuming the same pattern and size of cross-country capital flows and current account imbalances as have been observed in Europe from 1999 to 2007—the countries making up the euro area would have remained a zone of relative currency and financial stability without the euro. The swift reaction by the ECB to the money market collapse on 9 August 2007 offers strong testimony to its ability to perform its LOLR function decisively and in time.

Even with the euro, however, financial integration in the euro area has been negatively affected by the recent crisis. Several indicators of financial integration, in particular in money

[54] See, however, Eichengreen (2009), who does not rule out a return to Glass-Steagall like regulation, while De Grauwe (2009) explicitly argues in favour of narrow banking. Brunnermeier et al. (2009) take a mixed position on whether highly-leveraged, but individually non-systemic institutions should be subject to micro-prudential supervision, while calling for macro-prudential supervision irrespective of the systemic relevance of individual institutions.

[55] In this sense, hedge funds or certain financial products, like securitized loans or derivatives, do not represent the *fundamental* causes of the current or the Asian 1997 crisis (Brunnermeier et al. 2009; Eichengreen 2007). Financial crises following similar patterns occurred long before these investor types and products existed. Having said this, the focus on hedge funds or other types of specific investors and products is justified if they expose the financial system, in particular the banking system, to higher risks linked to maturity transformation. There seems to be little doubt that this was the case in the years preceding the crisis of 2007 (FSA 2009; Frank, Gonzalez-Hermosillo, and Hesse 2008).

and bond markets, i.e., the markets that have seen the most rapid progress in integration over the last years, have shown signs of disintegration over the crisis period (ECB 2009). At least in part, this reflects the fact that the run for liquidity benefited German treasury bills over government debt titles of other euro area countries. However, rising spreads have also been in line with traditional macroeconomic vulnerability indicators, like current account deficits, and financial vulnerability indicators, like the exposure of the respective banking sectors to the international financial system. As a percentage of GDP, such exposures have been most pronounced in the international financial centers (e.g., Ireland) as well as in countries with banks strongly engaged in the financial development and integration of CEE/SEE countries (e.g., Austria and Greece).

The financial crisis has also revealed the possible fiscal implications of uneven financial integration for non-financial center countries.[56] Two cases can be distinguished:

- The risk that non-financial center countries would have to support financial center countries in order to prevent defaults, which would undermine the credibility of the integration process in general, and monetary integration in particular.
- The risk that non-financial center countries would have to organize and fund rescue operations of financial institutions that are facing insolvency, at least in part, due to engagements in financial centers that are motivated by the favorable regulatory, supervisory, or tax regimes prevailing in the respective centers.[57]

The financial crisis has put financial integration between the euro area/EU-15 and the non-euro area new member states (as well as candidate and potential candidates for EU membership) to a severe test. Non-euro area CEE/SSE countries experienced an Asian-style sudden stop of capital flows when wholesale funding markets in mature economies dried up completely after the Lehman Brothers' collapse (Winkler and Vogel 2009; Winkler 2009). Thus, the global financial crisis undermined the validity of two key assumptions that the financial stability benefits of institutional integration between banking sectors in the EU-15 and the new member states (as well as candidate and potential candidate countries) had been built on (de Haas and Lelyveld 2008): The first, that parent banks are stable. The second, that financial crisis scenarios are triggered by events in emerging (and not mature) Europe.[58]

The experience of non-euro area CEE/SEE countries in the current crisis provides several lessons on the links between financial integration, stability, and regulation:

- Even in an almost ideal environment, with the EU acting as a single market in all dimensions and member states being subject to a high degree of harmonization in terms of financial regulation and supervision (as compared to the international level and that of other regions), financial integration does not provide a guarantee of financial stability.[59]

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[56] Moreover, it has confirmed early concerns (Vives 2001) about the effectiveness of crisis management with regard to the possible failure of pan-European banks.

[57] The most spectacular individual bank rescue in Germany had these features, which may explain why Germany has been pushing hard for a harmonization of regulations and finance-related taxes at a global and regional level.

[58] The experience of the non-euro area CEE/SEE countries illustrates that sudden stops can occur without strong involvements of specific investors, such as hedge funds.

[59] Against this background, and also taking into account the strategies of Asian countries with regard to capital account liberalization after the 1997 crisis, it is an interesting anecdote of the global crisis that the governor of the Croatian National Bank was named *Central Banker of the Year 2009*.The magazine *The Banker* praised the Bank's "interventionist approach" to limit capital inflows and domestic credit growth by various anti-cyclical macro-prudential regulatory and supervisory measures (Bracke [ed.] 2008, provide an overview of the measures taken). Moreover, these measures provided the National Bank of Croatia with a buffer to provide liquidity assistance to the banks after September 2008. Thus, the case of Croatia might become an interesting research topic when assessing the (comparative) effectiveness of these kinds of measures in emerging markets.

- The parent banks' access to the ECB's LOLR facilities and the rescue packages prepared by home countries' governments were key in preventing a full-blown Asian-style financial crisis in the region (Winkler 2009).
- Institutional integration, as compared to integration via markets, facilitates crisis management. However, the decline in economic activity[60] is set to lead to a significant deterioration in loan portfolio quality in the CEE/SEE region. Against this background, parent banks, local governments, and international financial institutions, including the IMF, the World Bank, and the European Bank for Reconstruction and Development, as well as European institutions, like the European Investment Bank and the Commission, have been engaging in joint efforts to stabilize banking sectors and macroeconomic conditions in CEE/SEE countries, as compensation for the absence of both an international LOLR and a regional budget to deal with a crisis in banking sectors dominated by foreign-owned institutions.

Finally, the financial crisis has had a strong impact on the pattern of net capital flows within Europe. Current account imbalances have been shrinking substantially as capital flows have been curtailed to the southern European countries, Spain, Greece, and Portugal, as well as to the new EU member states (and candidate and potential candidate countries). This may mark the end of a growth model that has relied on capital flow-based and credit growth-driven domestic demand (Fabrizio, Leigh, and Mody 2009). The decline in spending in the deficit countries has led to a reduction in the export revenues of the surplus countries, which has led to an overall contraction of the current account surpluses and deficits recorded by European countries in the past decade.

Turning to financial regulation, supervision, and monitoring, the report issued by the High-Level Group on Financial Supervision, chaired by Jacques de Larosière, echoed the shift toward macro-prudential regulation and supervision. In addition, it responded to several challenges to European financial regulation and supervision by:

- calling for further regulatory convergence in Europe, i.e., "equipping Europe with a consistent set of rules" (de Larosière 2009: 27);
- identifying weaknesses in supervisory practices on a cross-border basis and the need for more "effective means of challenging the decisions of the home regulator" (de Larosière 2009: 40)[61]; and
- proposing a European System of Supervision and Crisis Management with regard to macro- and micro-supervision.

In addition, reflecting on the fiscal implications of a financial crisis in an integrated financial system, the report has underlined the "need for close coordination between supervisory, monetary, and fiscal authorities" (de Larosière 2009: 66). The Geneva Report (Brunnermeier et al. 2009) was even more outspoken and stated that without progress in achieving an integrated crisis management approach that included fiscal issues, a truly integrated approach with regard to regulation and supervision was neither likely nor desirable. Integration and convergence will remain limited to cooperative mechanisms, information exchange, and negotiations, without a proper fiscal framework supporting effective crisis

[60] Within Europe, CEE/SEE countries have been the countries with the strongest decline in GDP growth from 2008 to 2009.

[61] FSA (2009) illustrates, using the example of the activities of Icelandic banks in the UK, that the objections raised by supervisors from the new EU member states against too much reliance on home country supervision also apply when foreign-owned banks play a much smaller role in the domestic financial systems of other countries (compared to the role played by foreign banks in CEE/SEE), if these banks are from small countries that lack "the supervisory resources to ensure bank solvency, or the fiscal resources or willingness to fund bank rescue, …" (FSA 2009:39). These concerns are shared by the respective home countries in that "disparities between home country responsibility to guarantee deposits and company rights to accept deposits from host countries can be precarious" (Comments from Iceland 2009: 2). I thank Ali M El-Agraa for pointing this out.

management.[62] Moreover, while the use of such instruments improves outcomes as compared to purely unilateral actions, experience suggests that they will not provide for the kind of regulatory and supervisory convergence that puts transactions within and between national financial markets on a level playing field, in other words, they will not create a truly unified European market.

5.4 The Impact of the Crisis on Regional Financial Integration: Asia

In Asia, the financial crisis was a déjà vu experience with 1997, as countries were again facing a sudden stop in capital flows, leading to a rise in interest rates and spreads as well as exchange rate depreciation. This has led to renewed calls for ensuring financial stability following the agenda adopted ten years ago: a common protection against sudden stops and calls for an international LOLR.

In May 2009, the Chiang Mai Initiative was transformed from a bilateral network into a multilateral foreign-exchange reserve pool (ASEAN+3 Finance Minister's meeting—Joint Statement 3 May 2009), putting an end to the inefficiencies inherent in the previous bilateral approach. Moreover, by establishing an independent regional surveillance unit, countries prepared the ground for independent LOLR activities based on a structured dialogue around the macroeconomic and financial stability challenges facing the region. The agenda of this dialogue will not differ significantly from those being conducted on a global level, such as at the IMF or the Financial Stability Board, or at the European level, such as at the Economic and Financial Affairs Committee (ECOFIN) or the Eurogroup. It will focus on the conduct of monetary and fiscal policies in Chiang Mai Initiative Multilateralization (CMIM) member states and—given the importance of financial integration—on the financial sector vulnerabilities and financial sector policies taken in the relevant countries. The European example suggests (Padoa-Schioppa 2003) that such a dialogue will be preceded by an information and data collection exercise that allows countries to engage in a discussion of the common benchmarks on which assessments of economic developments in individual countries can be based. Agreement on these benchmarks will be crucial for the CMIM's ability to make independent decisions on the provision of international liquidity to member states in times of need.[63] It remains to be seen when such an agreement will be able to be reached, given the lack of institutional foundation that has characterized most of the Asian integration process up to now.

In addition, Asian policymakers, in particular from the PRC, have called for the creation of a truly international reserve currency, i.e., a currency that is not at the same time the domestic currency of any single country or currency area, in order to address the risks of international illiquidity on a global level. The most prominent proposal argues in favor of an international monetary system that replaces the US dollar with the IMF's Special Drawing Rights as the main international reserve currency (Zhou 2009). The above analysis suggests that this proposal reflects the need for a sound monetary basis for financial integration, which in the Asian case has been much more global than regional.[64] It is also an implicit acknowledgment that the largely unilateral approach of self-protection, via the build-up of foreign exchange reserves and a cautious opening to capital flows, is only a second-best strategy for dealing with the macroeconomic and financial vulnerabilities resulting from financial integration, even though it has allowed most countries in the region to fight the crisis both with monetary and fiscal policy measures that could not have been credibly used in 1997, and without resorting to liquidity assistance from the Federal Reserve or the IMF. At the same time, however, the crisis has revealed that the self-protection strategy carries new risks, by making economic

[62] See also Vagnoni and Jones (2008).

[63] The multilateralization of the Chiang Mai Initiative was accompanied by an increase of funds to US$120 billion.

[64] The PRC's calls for a new international reserve currency might also be interpreted as evidence of the authorities' growing concerns about US macroeconomic policies and their risks with regard to inflation, exchange rate instability, and the US government's creditworthiness, deteriorations in which could possibly erode the value of the foreign exchange reserves that the PRC has been accumulating since 2000.

growth and development dependent to a large extent on external demand and by curtailing domestic financial development and regional financial integration via the very regulatory measures that had been taken to contain the risks of a sudden stop in the first place.

The theoretical foundations for the creation of a supranational currency are sound (Eichengreen 2009). However, the political and practical impediments to moving in this direction seem to be substantially higher than in the case of regional monetary and financial integration along the lines set out by the reformed Chiang Mai Initiative. The European case suggests that, even in an environment characterized by an extraordinary degree of economic and political integration, the introduction of a common currency—and the creation of a new international reserve currency would constitute a similar step—depends on the convergence of views on the proper conduct of monetary policy, i.e., the principles according to which such a currency should be managed. It is difficult to imagine that such a consensus will be achieved on a global level in the near future. Alternatively, an international LOLR could also be established by reforming the IMF's governance, funding, and activities, including regulation and supervision, in line with the need for such an institution in an increasingly globalized financial system (International Financial Advisory Commission 2000: Eichengreen 2009), but making proper use of the international currencies available.[65]

Against this background, the pursuit of a regional approach might be more promising. Proposals have been made, for example to establish an Asian Financial Stability Dialogue (Kuroda 2008) among finance ministers, central bank governors, regulators, supervisors, and private sector representatives. Such a dialogue would benefit from working closely with the independent surveillance unit set up by the reformed Chiang Mai Initiative and discussing issues related to the regional monitoring and coordination of financial regulation alongside the monetary aspects of integration.[66] They are—as it has been argued in section 2—two sides of the same coin: financial integration. Moreover, discussions on a regional level could provide a platform from which to enter the respective discussions on a global level with more weight, both at the Financial Stability Board and the IMF. Finally, the European example suggests that the number of international currencies is not exogenously given but can be changed via successful regional integration.[67]

6. CONCLUSIONS

The financial crisis has revealed fundamental weaknesses in the standard theory on the functioning and role of financial institutions and markets. Against this background, this paper analyzed recent experiences with respect to regional monitoring and coordination of financial regulation as a way to improve overall regulatory performance and increase the attractiveness of regional financial markets. Its main conclusions can be summarized as follows:

1. The effectiveness of regional monitoring and coordination of financial regulation depends on choosing the "right model" of regulation and on the degree of consensus with regard to the validity of this model. The current crisis has opened a debate about the appropriate benchmark model of financial regulation and supervision. Its main focus is on the question how to control for liquidity risk and systemic links among institutions and markets, i.e., to how to conduct macro-prudential supervision, in addition to the well

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[65] The increase in resources available to the IMF—agreed upon at the G-20 Summit in London—has been an important step in this direction. See also Calvo (2009).

[66] Park (2009) proposes to include a college of the region's supervisory authorities as an integral component of Chiang Mai Initiative.

[67] This statement holds from a regional perspective, with the euro having the status of an international currency, but also—and maybe more importantly—from an individual country perspective. Slovenia may serve as an illuminating example. By joining the euro area in 2007, Slovenia's domestic currency has become an international currency, which has made foreign exchange reserve holding as a protection against the risk of sudden stops superfluous. As a result, Slovenia's foreign exchange reserves dropped from about 20% of GDP in early 2000 to less than 2% of GDP in 2008.

established model of micro-prudential supervision of individual institutions and limiting their exposure to credit-risk.

2. At the centre of macro-prudential regulation and supervision is concern with the risks arising from maturity mismatches. International financial integration adds currency mismatches as a second major concern of macro-prudential regulation and supervision. Both kinds of mismatches—on an aggregate level (i.e., not only on the level of individual institutions)—should rank prominently in any regional (and global) monitoring and coordination exercise that involves financial integration among countries that use a foreign currency when engaging in maturity transformation.
3. All financial institutions engaged in maturity and currency transformation should be subject to macro-prudential regulation and supervision, if a strict and clear separation in all dimensions (transactions, ownership etc) between non-banks and banks is neither feasible nor desirable. Thus, the regulation of capital flows and specific investor types becomes a matter of their contribution to the possible build-up of liquidity risk.
4. The containment of liquidity risks is the main financial stability-related reason to encourage the harmonization of regulations and finance-related taxes across countries in a regionally and globally integrated world. Uneven financial integration promotes regulatory and tax arbitrage and increases the risk that the build-up of aggregate maturity transformation will go unnoticed. Moreover, uneven financial integration exposes both financial center and non-financial center countries to unexpected fiscal risks in times of crisis that may undermine regional (and global) financial integration efforts. This is even more the case if the fiscal implications of financial crises continue to be borne at the national level.
5. Financial integration is not only, and not even primarily, a function of regulatory and supervisory convergence. Rather it is a function of progress in overall economic integration, i.e., goods, services, and labor, as well as monetary integration. The lack of economic and monetary integration represents an important barrier to increasing the attractiveness of Asian financial markets to investors, both within and from outside the region. By contrast, the speed and form of financial integration between the EU-15 and the new EU member states (and the other European countries with an EU accession perspective) have been strongly influenced by the favorable business perspectives provided by the single market and a unified regulatory framework.
6. The euro has fostered financial integration in the euro area and has been safeguarding financial stability by significantly reducing currency mismatches in the euro area financial system. Moreover, the ECB has been providing unlimited LOLR services to the integrated area. At the same time the European experience suggests that financial integration as such does not offer a guarantee of financial stability. This holds in particular when financial integration takes place among countries that do not share a common currency and thus lack an international LOLR. Despite a high degree of de jure and de facto integration, the non-euro area EU member states (as well as the European countries with an accession perspective) have been subject to a sudden stop of capital flows. As a result, international support, by the IMF and other international financial institutions, has been needed as a crisis management tool. At the same time, the peculiar institutional set-up, whereby EU-15 parent banks enjoy access to the relevant international LOLR and support in the form of rescue packages by their respective home country governments, has contributed to the avoidance of an Asian 1997 style financial meltdown in non-euro area CEE/SEE countries.
7. The European experience demonstrates the challenges facing progress in regulatory and supervisory convergence. Progress is hampered by:
   - the lack of an agreed benchmark model;
   - the many details and technical difficulties of regulation and supervision;

- cross-country asymmetries related to the financial center status of some member states, as well as significant differences in terms of the systemic relevance of banking groups' subsidiaries in home and host country markets; and
- national responsibility for crisis management, particularly its fiscal dimension.

8. In Asia the current crisis has led to renewed efforts to deal with the monetary side of financial integration via the multilateralization of the Chiang Mai Initiative as well as via new calls for the creation of a global supranational reserve currency. The self-protective measures taken after the 1997 crisis—the reserve build-up and the cautious attitude towards financial liberalization—have strengthened the abilities of Asian countries to fight the current crisis with traditional monetary and fiscal policy instruments. However, these very same measures have hindered both the development of financial systems domestically and financial integration regionally.[68] Moreover, they have made countries even more dependent on export-led growth than before the 1997 crisis.

Overall, the crisis has served as a reminder of the preconditions that must be met in order to achieve smooth and stable financial integration. Against this background, it has been a wake-up call for strengthening regional monitoring of financial markets and regional coordination of financial sector policies. This wake-up call has many facets. It underlines the interdependencies with other integration efforts, notably monetary integration, as well as the difficulties in and implications of achieving progress in regulatory and supervisory convergence. This holds for Asia, but also for Europe which has already gone a long way in overall economic integration and efforts to foster regulatory and supervisory convergence.

On regulation and supervision, the crisis points to a two corner solution (Brunnermeier et al. 2009). The first "corner" is to go all the way in creating comprehensive identification in all relevant aspects between national and regional financial integration.69 The second one—which is also compatible with a strengthening of coordination and cooperation—is to keep regulation and supervision clearly in the domestic domain because, despite financial systems having become more integrated, regionally and globally, the fiscal (and monetary) implications of a crisis have to be dealt with at the national level. Against this background, the crisis seems to provide much food for thought on monetary integration in Asia and a strong call for Europe to decide on a sustainable regulatory and supervisory structure.

[68] The dilemma that better developed and integrated regional financial markets may reduce financial vulnerabilities, but the process of achieving such a level of development of integration involves a higher risk of financial instability, has been noted by Eichengreen and Park (2003).

[69] Bruni (2008) refers to an incompatible trio of *financial stability, financial integration, and decentralised regulation and supervision*: to keep the first two components of the trio the third has to be given-up. A similar concept has been put forward by Schoenmaker (2009).

APPENDIX: COUNTRY LISTS

a) List of economies—Figure 1

Mature economies	Emerging markets / developing countries			
Australia	Albania	Ecuador	Lithuania	Senegal
Austria	Algeria	Egypt	Macedonia	Singapore
Belgium	Angola	El Salvador	Madagascar	Slovak Republic
Canada	Argentina	Equatorial Guinea	Malawi	Slovenia
Denmark	Armenia	Estonia	Malaysia	South Africa
Finland	Azerbaijan	Ethiopia	Mali	Sri Lanka
France	Bahrain	Fiji	Malta	Sudan
Germany	Bangladesh	Gabon	Mauritius	Swaziland
Greece	Belarus	Georgia	Mexico	Syrian Arab Republic
Iceland	Benin	Ghana	Moldova	Taipei,China
Ireland	Bolivia	Guatemala	Morocco	Tajikistan
Italy	Bosnia and Herzegovina	Guinea	Mozambique	Tanzania
Japan	Botswana	Haiti	Myanmar	Thailand
Luxembourg	Brazil	Honduras	Namibia	Togo
Netherlands	Brunei Darussalam	Hong Kong, China	Nepal	Trinidad and Tobago
New Zealand	Bulgaria	Hungary	Nicaragua	Tunisia
Norway	Burkina Faso	India	Niger	Turkey
Portugal	Cambodia	Indonesia	Nigeria	Turkmenistan
Spain	Cameroon	Iran, Islamic Republic of	Oman	Uganda
Sweden	Chad	Israel	Pakistan	Ukraine
Switzerland	Chile	Jamaica	Panama	United Arab Emirates
United Kingdom	China, People’s Rep. of	Jordan	Papua New Guinea	Uruguay
United States	Colombia	Kazakhstan	Paraguay	Uzbekistan
	Congo, Dem. Rep. of	Kenya	Peru	Venezuela, Rep. Bol.
	Congo, Republic of	Korea	Philippines	Viet Nam
	Costa Rica	Kuwait	Poland	Yemen, Republic of
	Côte d'Ivoire	Kyrgyz Republic	Qatar	Yugoslavia
	Croatia	Lao PDR	Romania	Zambia

Mature economies	Emerging markets / developing countries			
	Cyprus	Latvia	Russia	Zimbabwe
	Czech Republic	Lebanon	Rwanda	
	Dominican Republic	Libya	Saudi Arabia	

b) List of economies—Figure 2

Mature economies	Emerging markets / developing countries			
Australia	Afghanistan	Djibouti	Lesotho	San Marino
Austria	Albania	Dominica	Liberia	Saudi Arabia
Belgium	Algeria	Dominican Republic	Libya	Senegal
Canada	Angola	Ecuador	Lithuania	Seychelles
Denmark	Antigua and Barbuda	Egypt, Arab Rep.	Macedonia, FYR	Sierra Leone
Finland	Argentina	El Salvador	Madagascar	Singapore
France	Armenia	Equatorial Guinea	Malawi	Slovak Republic
Germany	Aruba	Eritrea	Malaysia	Slovenia
Greece	Azerbaijan	Estonia	Maldives	Solomon Islands
Iceland	Bahamas, The	Ethiopia	Mali	Somalia
Ireland	Bahrain	Fiji	Malta	South Africa
Italy	Bangladesh	Gabon	Marshall Islands	Sri Lanka
Japan	Barbados	Gambia, The	Mauritania	St. Kitts and Nevis
Netherlands	Belarus	Georgia	Mauritius	St. Lucia
New Zealand	Belize	Ghana	Mexico	St. Vincent and the Grenadines
Norway	Benin	Grenada	Micronesia, Fed. Sts.	Sudan
Portugal	Bhutan	Guatemala	Moldova	Suriname
Spain	Bolivia	Guinea	Mongolia	Swaziland
Sweden	Bosnia and Herzegovina	Guinea-Bissau	Morocco	Syrian Arab Republic
Switzerland	Botswana	Guyana	Mozambique	São Tomé and Principe
United Kingdom	Brazil	Haiti	Myanmar	Tajikistan
United States	Bulgaria	Honduras	Namibia	Tanzania
	Burkina Faso	Hong Kong, China	Nepal	Thailand
	Burundi	Hungary	Netherlands Antilles	Togo

Mature economies	Emerging markets / developing countries			
	Cambodia	India	Nicaragua	Tonga
	Cameroon	Indonesia	Niger	Trinidad and Tobago
	Cape Verde	Iran, Islamic Rep.	Nigeria	Tunisia
	Central African Republic	Iraq	Oman	Turkey
	Chad	Israel	Pakistan	Turkmenistan
	Chile	Jamaica	Panama	Uganda
	China, People's Rep. of	Jordan	Papua New Guinea	Ukraine
	Colombia	Kazakhstan	Paraguay	United Arab Emirates
	Comoros	Kenya	Peru	Uruguay
	Congo, Dem. Rep.	Kiribati	Philippines	Uzbekistan
	Congo, Rep.	Korea	Poland	Vanuatu
	Costa Rica	Kuwait	Qatar	Venezuela, RB
	Croatia	Kyrgyz Republic	Romania	Viet Nam
	Cyprus	Lao PDR	Russian Federation	Yemen, Rep.
	Czech Republic	Latvia	Rwanda	Zambia
	C☐e d'Ivoire	Lebanon	Samoa	Zimbabwe

c) List of economies—Figure 3

Mature economies	Emerging markets / developing countries			
Australia	Albania	Egypt	Kyrgyz Republic	Russian Federation
Austria	Algeria	El Salvador	Latvia	Rwanda
Belgium	Argentina	Equatorial Guinea	Lithuania	Senegal
Canada	Armenia	Estonia	Macedonia, FYR	Singapore
Denmark	Azerbaijan	Ethiopia	Madagascar	Slovak Republic
Finland	Bangladesh	Fiji	Malawi	Slovenia
France	Belarus	Gabon	Malaysia	South Africa
Germany	Benin	Georgia	Mali	Sri Lanka
Greece	Bolivia	Ghana	Mexico	Syrian Arab Republic
Iceland	Bosnia and Herzegovina	Guatemala	Moldova	Tanzania
Ireland	Botswana	Guinea	Morocco	Thailand

Mature economies	**Emerging markets / developing countries**			
Italy	Brazil	Haiti	Mozambique	Togo
Japan	Burkina Faso	Honduras	Nepal	Trinidad and Tobago
Netherlands	Cambodia	Hong Kong, China	Nicaragua	Tunisia
New Zealand	Cameroon	Hungary	Niger	Turkey
Portugal	Chad	India	Nigeria	Turkmenistan
United Kingdom	Chile	Indonesia	Oman	Uganda
United States	China, People's Rep. of	Iran, Islamic Republic of	Pakistan	Ukraine
Norway	Colombia	Israel	Papua New Guinea	Uruguay
Spain	Congo, Rep. of	Jamaica	Paraguay	Venezuela
Sweden	Cote d'Ivoire	Jordan	Peru	Viet Nam
Switzerland	Croatia	Kazakhstan	Philippines	Yemen, Republic of
	Czech Republic	Kenya	Poland	Zambia
	Dominican Republic	Korea	Romania	

d) List of economies—Figure 4

Mature economies	**Emerging markets / developing countries**			
Austria	Albania	Dominican Republic	Lithuania	Sierra Leone
Denmark	Angola	Ecuador	Macedonia, FYR	Slovak Republic
Finland	Antigua and Barbuda	Egypt	Malawi	South Africa
Greece	Argentina	El Salvador	Malaysia	Sri Lanka
Iceland	Armenia	Estonia	Maldives	St. Kitts and Nevis
Italy	Azerbaijan, Rep. Of	Ethiopia	Mauritius	St. Lucia
Japan	Bahamas, The	Fiji	Mexico	St. Vincent & Grens.
Netherlands	Bahrain	Gambia, The	Moldova	Sudan
New Zealand	Bangladesh	Georgia	Mongolia	Suriname
Norway	Barbados	Ghana	Morocco	Syrian Arab Republic
Spain	Belarus	Grenada	Mozambique	Tajikistan
Sweden	Belize	Guatemala	Myanmar	Tanzania
Switzerland	Bhutan	Guinea	Nepal	Thailand
United Kingdom	Bolivia	Guinea-Bissau	Netherlands Antilles	Tonga

Mature economies	Emerging markets / developing countries			
	Bosnia and Herzegovina	Haiti	Nicaragua	Trinidad and Tobago
	Bulgaria	Honduras	Nigeria	Turkey
	Cambodia	Hungary	Oman	Turkmenistan
	Cape Verde	Indonesia	Pakistan	Uganda
	Chile	Israel	Papua New Guinea	Ukraine
	China, People's Rep. of	Jamaica	Paraguay	United Arab Emirates
	Hong Kong, China	Kazakhstan	Peru	Uruguay
	Colombia	Kenya	Philippines	Uzbekistan
	Comoros	Korea	Poland	Vanuatu
	Congo, Dem. Rep. of	Kuwait	Qatar	Venezuela, Rep. Bol.
	Costa Rica	Kyrgyz Republic	Romania	Viet Nam
	Croatia	Lao PDR	Russia	Yemen, Republic of
	Cyprus	Latvia	Rwanda	Zambia
	Czech Republic	Lebanon	Samoa	Zimbabwe
	Djibouti	Liberia	São Tomé & Príncipe	Slovenia
	Dominica	Libya	Saudi Arabia	

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