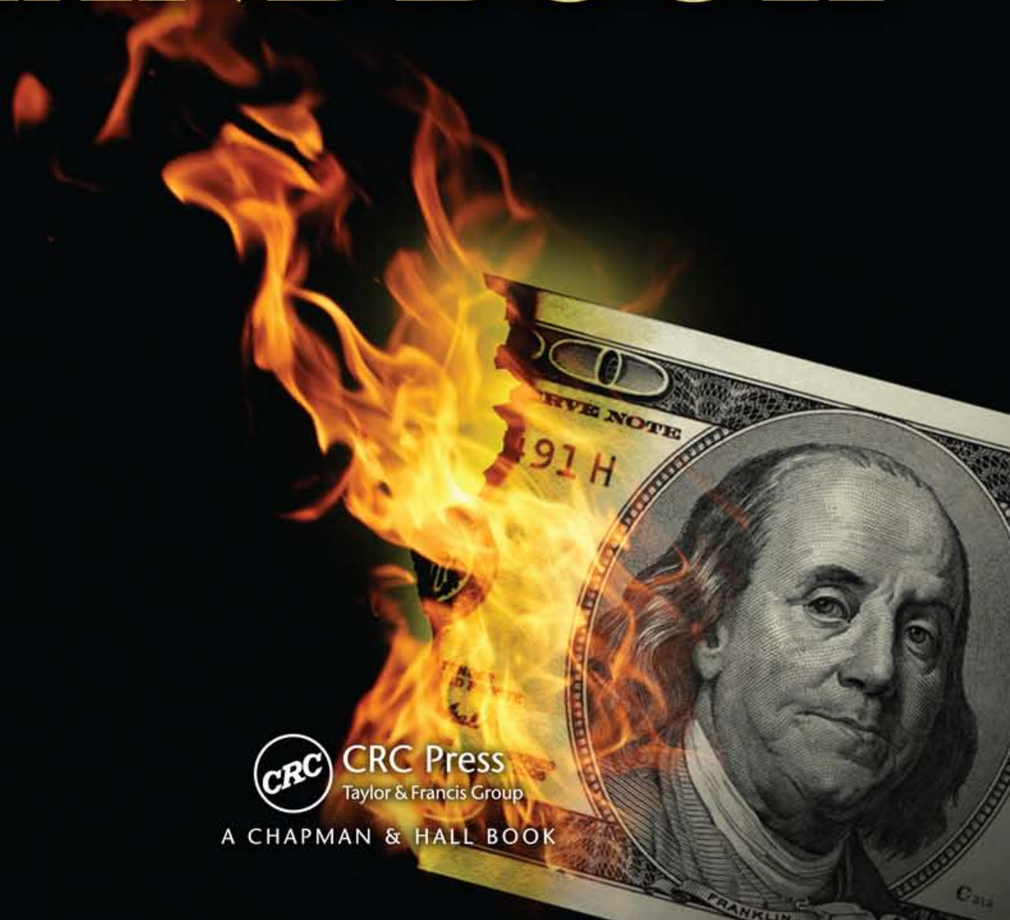
Edited by
Greg N. Gregoriou

The Banking Crisis Handbook



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Foreword

“This time is different” has perhaps been the most costly error in judgment made in almost every economic crisis thus far. This assertion embodies the premature hope on the part of capital market participants that a given crisis is not a true crisis, and hence will not lead to the severe impact expected by others. As a consequence of this misconception, market participants tend to revert to bullish portfolio allocations too soon, thus carelessly destroying significant amounts of capital.

Surprisingly, a detailed analysis of the current crisis leads exactly to the same impression: “This time is different.” The crisis that began specifically as a subprime crisis in the United States will likely go down in history as the event that precipitated the restructuring of the global financial system. Even now, 2 years after the first signs of the crisis began to emerge, it is still not possible to predict with any degree of certainty the mid- to long-term consequences and havoc that the ongoing crisis will bring about. It is nonetheless clear that the current crisis is more severe than any other crisis seen over the past decades and that its consequences are perhaps farther reaching than those brought about by the crisis of 1929. In order to provide the reader with a rough idea of the far-reaching consequences associated with the current crisis, the following key developments are noteworthy. The business model employed by investment banks is no longer economically viable with all major U.S. investment banks having either vanished from the market completely, adopted a commercial banking business model, taken over by other banks, or becoming insolvent. The best-documented example is perhaps the insolvency of Lehman Brothers, the impact of which was initially underestimated, thus leading to an unnecessary intensification of the current banking crisis. Citigroup, once the largest bank in the world based on market capitalization, has become a penny stock and needed to be bailed out with billions of dollars in taxpayers’ money. Similar is the case with Bank of America, Fannie

Mae, Freddie Mac, AIG, etc. Private equity funds, insurance companies, and hedge funds shut down their operations by the dozens, and with them important players (investors) in the securitization market vanished, thus undermining an extremely important economic instrument for facilitating the efficient allocation of credit risk to diverse capital market participants. The rating agencies reacted by adjusting their rating methodologies, subsequently placing countless securities with negative outlooks and the high probability of a future downgrade on their respective watch lists.

The banking crisis is nonetheless not solely an American problem, with banks throughout the world either being bailed out with government guarantees, forced to merge, or forced into insolvency. The various affected governments continuously surpass one another with increasingly ambitious bailouts with a total volume that exceeds several trillion U.S. dollars. Throughout the world, central banks are buying securities from commercial banks in an effort to generate desperately needed liquidity. Even entire states such as Iceland are bankrupt, or are on the verge of becoming bankrupt, based on the default probabilities implied by the spreads of credit default swaps referenced to their debt. Investment bankers around the world have been declared as the scapegoats for the current crisis with the branches of several major banks being destroyed during the G-20 summit in London and an ever-increasing number of people demanding that performance-based bonus payments be eliminated completely. "Bank runs" have occurred both in Hong Kong and in the United Kingdom (i.e., Northern Rock). The massive and sudden withdrawal of deposits served to exacerbate the problems of the banks in question and, in the majority of the cases observed, led to their bankruptcy.

Falling equity prices, significant write-downs, diminishing liquidity, the credit crunch, rising unemployment, and dwindling consumer demand have all served to demonstrate the severe impact that the crisis has had on the "real" (i.e., nonfinancial) economy. The collapse of the ship freight index, Baltic Dry, by more than 90% and the multitude of freighters sitting idle in major ports around the world demonstrate that global trade has virtually come to a standstill. In the near term, the paralysis of market participants brought about by the initial shock may even lead to deflationary tendencies. Government aid programs have been massively expanded with a view to saving several hundred thousand jobs (i.e., in the automotive sector). However, the appeal for massive government intervention has come not only from Chrysler and General Motors. On the contrary, the appeals for government assistance/intervention have become louder in almost every sector of the economy. Money is being printed at an ever-increasing rate with concerns regarding the prospect of (hyper-)inflation already being voiced by some. Some already question the merits of capitalism and are propagating Marxism as a viable alternative economic system. Regardless of the aforementioned overreactions, it can certainly be said that the self-regulatory approach to financial markets espoused by the former FED chief Alan Greenspan does not function properly in times of systemic financial crises and that systematic bank risks can only be corrected with the state intervening in the markets as a lender of last resort.

Confidence in the interbrain market as well as the confidence of individual investors has been severely undermined, and it is to be expected that confidence will not be restored for several years to come. A quick glance at the many severe consequences stemming from the current crisis already shows the likely complexity of the answers to the key questions that have arisen: (a) What were the precipitating factors and how could it happen? (b) What needs to be done to restore confidence in the financial sector and, ultimately, find a way out of the current crisis?

The list of possible reasons for the crisis is long and discussions in the press concerning the causes are highly controversial. Aside from unjustifiable bonus payments, errors made in the valuation of individual assets, pressures to generate unrealistic returns, severe errors made by key rating agencies, ineffective risk management practices, the irresponsible use of excessive leverage for mergers and acquisitions, inefficient work on the part of regulatory bodies, inconsistencies in key regulatory frameworks and unethical behavior on the part of a few market participants, and the unquestioned faith in IT and market standard valuation models should perhaps be viewed as the most important contributors to the current market crisis. In the course of the preceding two decades, large sums of money were invested in IT systems and the development of valuation models. In this process, assumptions were made regarding correlations and the interdependency between asset classes. These assumptions were subsequently used within the framework of the aforementioned models but turned out to be unrealistic under the extreme market conditions encountered during the current crisis. In such extreme market conditions, the values of nearly all asset classes—with the exception of gold and other commodities—tend to move in the same direction. Blind faith was placed in these models and key business decisions were based on their results. The models, however, were based solely on historical data that led to unrealistic valuations. As a consequence, all models are being examined, modified, and stressed to reflect all the potential changes in the valuation of the specific asset classes caused by the crisis.

The crisis that began with the meltdown in the U.S. subprime market first expanded into a banking crisis before eventually evolving into a global economic crisis through the infection of the entire financial sector. The impacts of the banking crisis alone are so multifaceted, with many difficult aspects, that a multitude of financial experts will likely be required to isolate the underlying causes and put forth credible solutions. By compiling diverse financial articles written by established and globally active financial experts in *The Banking Crisis Handbook*, we have succeeded in highlighting the most important topics surrounding the current banking crisis. Constructive criticism is exercised, the right conclusions are drawn from past mistakes, and the relevant steps on the way into a new era for the global financial system are discussed. With a view toward the proposed solutions and changes, a quick, concerted implementation on the part of both the industrialized world and the emerging markets is the fundamental prerequisite for the restructuring of capital markets, the revival of confidence, and, thus, the prevention of a further economic downturn. Upon reading the handbook, it becomes very clear to the reader: "After this time, everything is different!"

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Introduction

At the time of the writing of this introduction, the Dow Jones Industrial Average fell to 6547 on March 9, 2009, returning to its lowest level since April 25, 1997. Nobody would have ever believed that the market would go down so rapidly. Pundits around the world began comparing the current crisis to the 1929 stock market crash, placing the U.S. economy in a brief depression-like state similar to that of the 1930s. At the onset, subprime loans and the remarkable growth of collateralized debt obligations (CDOs), which peaked in the last quarter of 2006, were considered to be the culprits. However, the finger was pointed at hedge funds, and they were being blamed for destabilizing the economy and leaving the world in a deeper mess. Nobody expected the chaos to spread around the globe so quickly with large and well-established banks falling like dominoes. Recent academic research has shown that hedge funds in fact provided liquidity during the global crisis of 2008.

Well-known investment banks, such as Lehman Brothers, which became a member of the New York Stock Exchange in 1887, filed for bankruptcy in 2008. With Bear Stearns leading the pack, a plethora of banks around the world were implicated in bad home loans that were repackaged as CDOs and presented as good-quality bonds to investors. In reality, they were worthless, and the losses amounted to nearly more than $2 trillion. The pricing of these exotic instruments (CDOs) was largely misunderstood and was too complicated for upper management and risk managers to pinpoint their real underlying risk. Senior bank officers knew that credit derivatives could be extremely profitable, amounting to massive bonuses, but were less interested and turned a deaf ear to the dark side of CDOs.

I believe that the chapters in this book highlight and shed new light on the current banking crisis. The chapters provide possible remedies as to what should have been done prior, during, and after the crisis. The exclusive, new research in this book can assist bank executives, risk management departments in banks, and Op risk teams in banking, hopefully, to get a clearer picture of the banking crisis. The chapters in this book were written by well-known academics and professionals who have published numerous peer-reviewed journal articles and book chapters.

PART I: BANKING GROSS NEGLIGENCE AND SHADOW BANKING SYSTEM

Chapter 1 highlights the events that brought the largest economy to its knees and caused the worst knockout effect since the Great Depression. While the debate is still raging, the U.S. government has finally realized that its makeshift regulatory patchwork of not only dividing responsibility between federal agencies but also between state governments is not entirely the optimum structure; however, the world continues to suffer. Many questions need to be answered not only about why warnings from the Securities and Exchange Commission (SEC) in 2003 were not heeded, but also as to why the U.S. government allowed banks not to institute the 1999 Basel II Accord. Also why did they never deregulate the real estate industry? Why did they ignore the Financial Action Task Force recommendation on money laundering? Is the very party system that accepts such large donations from lobbyists the cause? Is it the uber democracy of totally wasteful presidential elections? Is this an aberration from the Westminster System of government? This chapter examines all possible causes and explains a regulatory taxonomy that could help solve the problem—a taxonomy that was derived from Australia's near miss in 1991.

In Chapter 2, the authors examine the effectiveness of the Federal Reserve Bank's monetary interventions as a response to the deteriorating economic conditions caused by the subprime mortgage crisis. They look at the stock price reaction of financial institutions listed in the United States to interest rate cuts and liquidity injections announced by the Fed from August 2007 to April 2008. They also link their stock price reaction to a number of firm-specific factors: the size of the institutions, their exposure to the subprime crisis, and their leverage. The authors find that interest rate cuts had a stronger impact on the market value of the financial institutions than liquidity injections; on average they caused a 4.7% and 3.3% increase in their stock price, respectively. Their results offer partial support to the hypothesis that small and credit-constrained institutions with strong exposure to the crisis profited the most from the FED's interventions. Overall, the FED has been successful in restoring the confidence of the investors in the markets in the short run.

Chapter 3 discusses unreasonable mortgage lending, which implicitly relied on the never-ending housing market bubble and caused losses to many participants in the U.S. subprime mortgage market. At first glance, it is surprising that these losses, modest relative to the size of the U.S. economy, managed to cascade into one of the largest global financial crises in history. An investigation shows that numerous mechanisms magnified the initial problem. The lack of transparency in the financial markets and institutions led to the loss of trust by investors and a system-wide run on both regular banks and shadow banks (bank-like institutions subject to little regulation). The flow of funds away from all risky assets created a credit crunch for many companies that had no exposure to the subprime. The reduction in trading volumes caused a lack of liquidity and a breakdown of the price discovery, which is the cornerstone of the modern financial system. In the conditions of low liquidity, highly leveraged institutions were prone to a loss spiral whereby falling asset prices forced fire-sale liquidations to meet margin calls, thereby creating additional downward pressure on the asset's value, leading to further margin calls. Poor risk management models, which used historical data without any adjustments to allow for the burst of a bubble, led to unexpectedly severe problems in the highest-rated institutions and extremely poor reliability of credit ratings. The central role afforded to the credit ratings by the financial regulators meant that even the most regulated sectors of the industry were not immune to the crisis.

In Chapter 4, the authors admit that the subprime crisis and its consequential effects highlight numerous factors and hazards that were not exactly unforeseeable. As we all know, the capital market is not perfect, correlations are not stable, and extrapolated historical volatility is a poor descriptor of future risk—to mention but a few examples. They thus raise these valid questions: Why did financial institutions not act or react much earlier? Was the combination of several coinciding shocks to the system truly inconceivable? The authors also attempt to provide appropriate answers to these questions. They critically examine whether the decision makers in financial institutions were possibly afraid of introducing overdue change in spite of knowing better, just because doing something differently could introduce personal liabilities and reduce returns in upward markets. Regulatory frameworks such as Basel II, as well as International Financial Reporting Standards and a variety of other laws, rules, and regulations are also identified to have introduced crisis-enhancing effects, inter alia, because they prescribe the use of techniques and models that do not always capture the true risk. The authors demonstrate that a combination of organizational and market-driven corrective steps are called for, including a reorientation of incentive systems, truly living up to what is called for in corporate governance, establishing enhanced and appropriate risk methodology, and impeding the use of risk methodological approaches that have demonstrably been proven wrong.

Chapter 5 suggests that while most economists and casual observers of the state of the economy have emphasized subprime lending as the central cause of the mortgage crisis, data and economic theory provide a different reading of what happened. Rather than being limited to subprime borrowers, the events that made the crisis possible concern all mortgagors. The financial fragility of all mortgagors increased to the point that their financial position became highly sensitive to changes in interest rate, amortization rate, home price, and income. Minsky provides a good framework of analysis to understand the current crisis. He shows that there are forces internal to capitalist economies that progressively push economic units in financial deals that rely more and more on refinancing and liquidation as a means to service debt commitments. He especially argues that "stability is destabilizing," i.e., that economic stability gives an incentive and forces economic units to take more risk, and progressively leads to an increase in financial fragility.

Chapter 6 analyzes the contribution of hedge funds to the crises and instability on global markets. As compared to mutual funds, hedge funds have, due to their position as private investment firms, much more freedom to act and are virtually not subject to publishing and accounting regulations. Existing hedge funds have deviated from the original idea of hedging and serve rather as leveraged derivate portfolios employed to boost equity performance. This framework leads to significant systemic risks as a consequence of instrument and balance sheet leverage. To make things clear, the authors analyze different hedge fund strategies and their contribution to the three global crises in the last decade with a strong emphasis on the financial crisis of 2007–2008. They find that existing loose regulations and opportunistic abuse of leverage instruments lead to market failure.

Chapter 7 shows that the auction rate securities (ARS) market came into being after the decline in technology stock prices in 2001–2002, reaching about $330 billion of outstanding securities by early 2008. The key to the ARS market's success involved issuing securities with long maturities, but with coupons/dividends that reset frequently, say every four or five weeks. The rates were reset at the end of each period through a Dutch auction establishing the lowest rate that would clear the securities than being sold. However, following the recent credit crisis, the ARS market failed, leaving thousands of investors stranded, unable to sell, collect on, or otherwise convert their securities. This chapter provides a comprehensive analysis of the ARS market with a particular emphasis on the origins and mechanics that caused its recent collapse.

Chapter 8 mentions that at the end of 2008, many national regulators had started to massively react to the ongoing banking and financial market crisis. One of the reasons was that the latter was increasingly affecting the "real economy." National bailout plans included the nationalization of banks and taking regulatory measures such as granting guarantees and conferring large credits to the financial sector. Taken together, the crisis has led to serious doubts on the functioning of free markets and to an unexpected high level of state interventions into the private sector all over the world. This chapter, however, argues that the crisis was not entirely triggered by failures on free markets and "bad" accounting standards per se, but that regulatory failures also significantly contributed to its emergence. This should be taken into account when discussing a new regulatory framework and tougher oversight systems, possibly at the international level. In fact, modern efficient regulation requires policy makers to understand the boundaries of national politics and the general problems of interventions into the business system.

Chapter 9 assesses the effect of the banking crisis on insurance markets and looks at the way in which events in the insurance industry have, in turn, affected the banking sector. The authors begin by considering systemic risk in banking and insurance, and conclude that the risk of structural failure is greater in the banking sector than in the insurance industry, even though there have been local "crises" in insurance markets from time to time. Nevertheless, they find that insurers have suffered considerably in the current crisis, with the greatest adverse effects in the case of financial guarantee insurers (such as the U.S. "monolines"), companies that extended their operations beyond their traditional insurance business into risk areas of structured finance (such as AIG), insurers writing lines of business that are particularly sensitive to an economic downturn (such as credit and liability insurers), and "bancassurers" (insurers having close affiliations with banks). This chapter concludes by considering how the structure of the insurance industry may change as a consequence of the current crisis, and how changes in the regulatory system may also have an impact on insurers.

Chapter 10 looks at the role that the hedge fund industry played in the recent financial crisis. The authors discuss the growth of the hedge fund industry and demonstrate that the proliferation of hedge funds was clearly a value proposition for financial intermediaries. They confront two important misgivings about the hedge fund industry. The first pertains to the regulation of the hedge fund industry, which is often misunderstood, and the second relates to the generous performance fees awarded to the managers. They demonstrate that hedge funds do not operate in a parallel lawless dimension and argue that the recent deregulation of the banking industry has provided financial institutions with considerably more latitude than that afforded to most hedge funds. Second, hedge fund managers are also often assumed to have an incentive to take on excess risk due to the particular structure of their compensation agreements. However, the authors show that although the compensation fee is asymmetric, there are several mechanisms protecting investors' interests. Finally they argue, using a couple of case studies, that the disappointing performance of hedge funds in 2008 stemmed largely from the fact that the market infrastructure collapsed beneath them and not because the "hedge fund model" was flawed.

In Chapter 11, the author states that as capitalism's latest boom goes bust, the U.S. and global financial markets are experiencing their worst financial crisis since the Great Depression. The banking system no longer operates properly, credit markets have seized up, and liquidity has completely disappeared. Fear spreads and many claim that a market solution to the crisis no longer exists. They request an immediate government intervention to avoid a financial meltdown. As Main Street blames Wall Street for the crisis, scapegoating and finger pointing abound—there can be no doubt that the usual suspects such as hedge fund and private equity fund managers will soon be arrested. Is this really the solution? Probably not. In this chapter, the author discusses the various options available to solve the current crisis. He finds evidence in particular that collaborating with private pools of capital offers an interesting alternative solution to rescue the banking system.

In Chapter 12, the author uses a de-leveraging procedure and demonstrates that the default probability of all the hedge fund strategies has started to increase since September 2008. The same procedure allows them to conclude that in 2008 the hedge find strategies did not need leverage to increase portfolio efficiency. These results could be interpreted in two different ways. The first is simpler and is based on the sudden increase of the volatility of the markets. All hedge fund strategies suffered from this dramatic increase in volatility, which caused an increase of their own asset volatility. Increasing default probability explains why "margin financing from prime brokers has been cut and haircuts and fees on repo financing have increased" (IMF, 2008). In other words, the business risk of the strategy became so high that the banks were forced to ask hedge funds for an immediate de-leveraging process. The second explanation is more intriguing. The lenders asked hedge funds for immediate de-leveraging because of their specific liquidity problems (see Adrian and Shin, 2008; ECB, 2008), independently from the concrete default risk of the hedge funds. These unjustified requests explain the sudden and correlated increase of the hedge fund's default probability.

Chapter 13 stresses that within the global economy as a whole, emerging market economies are becoming increasingly important. Any financial and banking crisis within emerging markets may well lead to rapid and widespread contagion to other financial markets and banking sectors throughout the world. Thus, a clear understanding of the dynamics of the macroeconomic and financial variables within emerging markets will be significant and valuable for the developed markets. China's equity market has grown by leaps and bounds, and foreign investment has played a key role in this expansion. Over the past year, the Chinese equity market has experienced a significant correction, partly due to the global banking and stock market turmoil, and partly due to aggressive tightening of central bank policies to address surging inflation. The author's outcome is evidence of China's recent transformation from a closed to a relatively open economy with more open capital markets. This process is likely to continue. This is positive for the long-term development of the Chinese stock markets and economy.

PART II: GLOBAL, EUROPEAN, AND EMERGING MARKETS' PERSPECTIVES

Chapter 14 examines the recent financial crisis that has erupted due to a housing boom and the subsequent inevitable bust of the housing market in the United States. The effect of this U.S. financial crisis has eventually caused substantial damage to the overall world economy. Even though the financial world experienced several episodes of financial crises in the past, none were nearly as fierce as the current crisis. During the time of this severe financial turmoil, shareholders of banking and financial companies experienced major loss of wealth. This chapter aims at investigating various issues pertinent to the financial loss sustained by global investors.

First, the authors investigate how the financial crisis has negatively impacted the share prices of U.S. and foreign banks. For this purpose, they consider a comprehensive sample of 2467 banks across 107 countries and categorize them into five portfolios based on their country of origin and the geographic distribution of their operations. They find that losses are most severe for foreign banks with substantial U.S. operations, and U.S. banks operating internationally. These are followed by U.S. banks with purely domestic operations. Interestingly, foreign banks with international operations outside the United States are severely affected as well due to the highly integrated nature of financial markets. Foreign banks with mainly home operations suffer the least damage but are not untouched by the effects of this global liquidity crisis.

Next, they test the effect of different crisis events and policy interventions on stock prices of banks. They collect various financial crisis and intervention-related dates from sources like BBC News, CNN Money, and the *Washington Post*. The crisis events that were most significantly associated with investor wealth loss were (Chapter 11) the filing of bankruptcy by Lehman Brothers, the SEC ban on short selling, the rejection of bailout legislation by the house of representatives, Paulson's announcement that TARP funds would not be used to buy illiquid assets, and the NBER declaration of formal recession. The policy interventions that had the most notable positive impact on bank stock prices were the global expansion of swap lines by central banks; the U.S. treasury's purchase of bank-preferred stocks; the FED tax cut rate to 0%; and, finally, the provision of guarantees, liquidity, and capital by the FED and FDIC to large individual banks such as Citibank and Wachovia.

Finally, the authors apply multivariate regression analysis and examine whether some firm-specific attributes such as size, leverage, and market-to-book ratio could explain the amount of loss sustained by the stock market. They find that the country of origin and operations continue to affect returns in a multivariate setting; they also find that large banks suffer the least losses. They believe that depositors, bank stock investors, as well as regulators would benefit from the findings in this chapter.

Chapter 15 demonstrates that deficient governance systems of banking firms are one of the causes of the recent financial crisis. Institutional myopia and lax constraints for self-dealings by bankers have led to the buildup of untenable risk positions in the banking industry. This chapter looks at the challenges ahead from a European perspective. The financial crisis has been largely triggered by the accumulation of bad credit risks in securitization markets, and has subsequently spread to the rest of the regulated banking system as well as the shadow banking system. In this context, the authors highlight relevant differences between the U.S. and the European securitization markets and explain why European banks were actually among those institutions that suffered the most. Focusing on the investors' perspective, this chapter analyzes different regulatory alternatives from increased transparency to strengthening financial oversight in order to shield the banking industry from similar crises in the future. It further discusses how they may contribute to the resuscitation of financial markets in the near future.

Chapter 16 investigates the fragility of the financial system as a consequence of systemic risk that has been a matter of concern for a long time (see Thornton, 1802; Bagehot, 1873). Systemic risk was thought to be caused by the irrational and subsequent herding behavior of investors who, all of a sudden, might decide to withdraw their liquid assets from an institution. The figure of a lender of last resort (LOLR) was then suggested by these authors as a way of reducing the probability that a financial collapse occurs. Since then, however, they were disturbed by the contradicting effects that an LOLR would have upon the stability of the financial system. In this regard, the literature has been divided into supporters and opponents of the LOLR. The latter would prefer arrangements such as deposit insurance contracts and/or the provision of own capital requirements, whereas those in favor of the LOLR appear to be confronted with the so-called problem of eligibility, which consists in choosing the features or criteria an institution under financial distress should fulfill in order to be eligible for the LOLR rescue.

Chapter 17 looks at the sharp slump in the economic growth forecasts and equity market prices; it is evidently not rational to assess that emerging markets are decoupled from the current global financial crisis, or at least from the U.S. economic recession. The reason appears to be simple as the United States currently accounts for about 25% of the world's import volume of goods and services and has become the first importer of the emerging countries during the last two decades. Moreover, the globalization process has rendered emerging markets more vulnerable to external shocks due to the immaturity and weakness of their financial infrastructure, and more correlated with the developed markets in times of crisis. Asking, then, how large are the impacts of the U.S. banking crisis on emerging stock markets is an important issue for academic researchers, investors, and policy makers. In this chapter, the authors focus on the finance channel of crisis shock transmission from the United States to

Argentina, Mexico, South Korea, and Thailand using a multivariate cointegration model over the period from December 1987 to January 2009. Their findings show significant but asymmetric effects of the current crisis on selected emerging stock markets due to the regional differences. Despite their efforts to reduce their financial dependences on the U.S. economy through stimulating internal demands, emerging markets seem not to be protected from the current crisis.

In Chapter 18, provisioning for loan losses plays a key role in determining the makeup, and thus the transparency and representational faithfulness, of banks' balance sheets. From a regulatory perspective, discretion in loan impairment provisioning may provide greater capacity to build up substantial buffers against deterioration in credit quality prior to the existence of actual impairment in individual loans.

However, under the approach to loan impairment and provisioning prescribed by IAS 39—*Financial Instruments: Measurement and Recognition*, any forward-looking, uncertainty-tolerant approach to loan impairment provisioning is in stark contrast to the contemporary accounting rules on the subject that emphasize the primacy of objective and verifiable evidence over future-oriented conjecture. In effect, the prudential regulatory management approach to impairment provisions is best characterized as anchored within an expected losses model, while the contemporary accounting rulemaking approach to loan impairment provisioning is anchored within an incurred loss tradition that ensures that it is historically oriented rather than future oriented.

The evidence in 2007 and 2008 suggests it was clear that substantial portions of the globe's financial and economic fabric lay in a state of severe distress; however, the financial disclosures by the Asian banks over this period show a picture at odds with this larger reality. In part, it seems strongly arguable that the impairment recognition procedures stipulated by IAS 39 represent an element of any explanation for the muted response of Asian banks to impairment recognition in the face of a gathering economic storm.

If one of the objectives of the International Financial Reporting Standards (IFRS) regime is to allow reporting entities (in this case, banks) to produce financial disclosures that are of greater assistance to users by way of being constructed on a foundation of more useful information, it may be that this objective is being poorly served by the current approach to evidence set out in IAS 39.

Chapter 19 explores the financial turmoil over the past decade that has stimulated research into various sources of vulnerability of economies around the world. In particular, both maturity and currency mismatches have been found to be associated with many of the episodes of financial fragility recorded in the past decade. This chapter addresses the following: First, the authors present empirical evidence on the extent of currency and maturity mismatches for Latin American countries using recent data from 1993 to 2007. Second, they summarize the main factors identified by the empirical literature as determinants of mismatches and shed light on the links between mismatches and financial fragility, both at the sovereign and corporate levels. Third, they discuss the roles of bond markets, financial derivatives, and capital markets, in general, in mitigating currency and maturity mismatches in developing countries. This chapter also raises issues for future research in various directions.

Chapter 20 shows that the Russian banking system is in its worst crisis since 1998: on the one hand, this is a consequence of the global financial and economic crisis; on the other hand, there are specific country factors. First of all, the Russian economy depends on a relatively small number of industries. Second, Russian firms have a large amount of foreign debt. Furthermore, when oil prices decrease, there is a decline in the ruble against the dollar and the euro. However, differently from 1998, the banking system finds itself in a better position thanks to the previous macroeconomics boom, which lasted almost 10 years. Still, the Russian banking sector may face important risks in the near future in case of a continued decrease in oil prices, a lack of stabilization in the FOREX market, and a declining quality of the collaterals, with an increase of bad loans in the banks' portfolios. Nevertheless, major improvements have been made and the Russian banks have used the current situation to improve and optimize their expenses.

Chapter 21 observes how the Australian banking system has a number of distinguishing characteristics, among which are its geographical remoteness, its uninterrupted strong growth record, and its so-called Four Pillar policy. The authors investigate the stability of the Australian banking system and analyze whether this unique set of features has kept it insulated from the 2007–2008 credit crisis. They apply Extreme Value Theory, which is particularly suitable for such a risk management analysis, and find that the Australian banks' share price return distribution functions exhibit fat tails. The risks thus exceed those indicated by the common assumption of normally distributed returns. They further find that the relatively high cocrash probabilities between the four pillar banks support the conjecture that these are "too big to fail." During the crisis, the cocrash probabilities between most Australian banks have increased markedly. Moreover, the authors show that the tail-dependence of the Australian banking sector on the American, Asian, and, to a lesser extent, European banking sectors has also been boosted.

In Chapter 22, the authors examine how Australia's banking regulation in the years leading up to the recent global financial crisis has been one of adherence to the guidelines set down by the latest and previous Basel accords requiring banks to hold adequate liquid capital to the specified percentages of risk-weighted assets as a safety valve to cover losses due to market, credit, and operational risks. The need had not been evident pre-crisis to take the additional step of insuring bank deposits. Systemic risk was deemed to have been well covered. This chapter discusses the efficacy of the Australian regulatory and institutional environments from a legal perspective and also produces empirical evidence from correlation, regression, cointegration, and causality analysis that illustrates the global positioning of the Australian banking industry in the years leading up to the crisis. Reasons why the banking system has experienced a combination of good luck and good management are put forward on the basis that the problems faced by other larger developed economies in Western Europe and North America have so far been avoided. This is not to say that Australian banking is immune from the crisis, as mining and associated companies face falling global demand for minerals and banks face higher bad and doubtful debts.

Chapter 23 reveals that in recent years, large financial institutions have expanded their operations across national boundaries. Undertaking these operations has led to stronger interconnections across institutions due to extensive interbank activities; heightened counterparty risk arising from global trading activities, inclusive of OTC derivatives contracts; and increased participation in equity, bond, and syndicated loan issuance. Such development has given rise to the "too-interconnected-to-fail" problem, which in the aftermath of the subprime mortgage crisis has become a major concern to policy makers and risk managers alike. The author introduces a methodology for assessing default risk codependence, or, in other words, how the default risk of a financial institution affects the conditional default risk of another institution. The methodology relies on market prices of default risk, so it bypasses the need to use detailed information on linkages across banks provided market prices are efficient. The methodology is applied to a sample of 25 global banks and casts some insights into the bailout of Bear Stearns and AIG, and the bankruptcy of Lehman Brothers.

In Chapter 24, the authors show that while the European financial market is experiencing a big crisis, it also has to cope with the integration of the Markets in Financial Instruments Directive (MiFID) to the legislation of all EU countries, as one step forward for succeeding as a single European financial market. Ethnographic research was recently carried out to study the first results of MiFID implementation in the Greek financial market, which reflect that most companies are not on the verge of such a big change and most of their customers are lacking knowledge on coping with such an important issue for their financial objectives. Moreover, part of the staff of these companies is still missing important aspects of this change and the implications it will bring in their everyday interaction with customers and companies' goals.

PART III: PREVENTING BANKING CRISES, BANK RUNS, REGULATION, AND BAILOUTS

In Chapter 25, the authors reveal that the 2007–2008 credit crisis not only vastly affects the financial system but is also likely to have severe consequences for the global economic development. The extent of the crisis is enormous. Due to the growing globalization and complexity of the financial system, the contagion effect of the current crisis throughout financial markets is unprecedented. The crisis clearly reveals the vulnerabilities of the financial system in its current form. Hence, it is of particular importance to understand what actually triggered the collapse of the financial system, and how such a collapse can be prevented in the future. The literature thus far on how bailout plans should be arranged is scarce. The authors take a view from the perspective of credit derivatives and explain the circumstances that led to this crisis. They describe the instruments fostering the instability of the financial system and show how the collapse was triggered. They further comment on the recent measures of short-term government intervention, which aim at limiting the acute damage to the financial and economic system. In addition, they discuss how the design of government bailout programs can influence decision making among financial institutions. Furthermore, they argue that only rescue packages including a purchase program for distressed assets create a setting where illiquid, but otherwise solvent, banks are separated from insolvent banks. Such a setting provides a valuable signal to outsiders, including investors as well as government agencies. Finally, they suggest relevant areas for improved long-term financial regulation and provide an overview of the possible consequences for the design as well as the regulation of the financial system in the future.

In Chapter 26, the authors state that a "bank run" corresponds to the phenomenon where people run to their banks to withdraw all of their deposits. This collective behavior seriously affects the bank's liquidity and often results in bankruptcies. At the present time (2008), the major Swiss private banks, UBS and Credit Suisse, are troubled due to the current "subprime" crisis. In this chapter, the authors show the main findings of a survey conducted in May/June 2008 with 363 people living in Geneva. In particular, they aim to assess individuals' confidence toward Swiss banks and attempt to recognize signals that would lead to a bank run. The authors perform this task by identifying sociological clues connected with bank run attitudes, which may be the first step in efficiently managing this type of risk. Descriptive statistics show that most people do not plan to change banks in the coming future. Moreover, Geneva inhabitants still have confidence in their banks while carefully watching the evolution of the crisis. These and other related topics (i.e., UBS president resignation, the perceived default risk of a Swiss bank, the judgment Geneva inhabitants have vis-à-vis of Swiss banks) have been analyzed, and research hypotheses have been verified on the basis of nonparametrical tests. The authors' findings highlight that people who believe their bank savings are at risk are more likely to take part in a bank run than the others. Also, confidence toward Swiss banks among Geneva inhabitants seems to be a factor that might reduce the likelihood of a bank run in the given area.

The current financial crisis places the spotlight on the ability of banks to meet their financial obligations. This chapter examines and compares changes in bank default risk in the United States and the United Kingdom over time, including the current period of crisis. A common approach used by banks to measure the probability of default (PD) among customers is the KMV/Merton structural model, which measures distance to default (DD). The authors use this same approach to measure the DD of the banks themselves. As a further measure of variation of bank risk over time, they use the value at risk (VaR) methodology to examine the banks' equity risk, as well as the increasingly popular conditional value at risk (CVaR) methodology to measure their extreme equity risk. In addition, they incorporate CVaR techniques into structural modeling to measure extreme default risk. The study finds that U.S. and U.K. banks are in an extremely precarious capital position based on market asset values, especially in the United Kingdom, where the banks are more highly leveraged.

They also find the existing credit ratings of banks are much more favorable than default probabilities indicate they should be. Movements in market asset values are currently not factored into capital adequacy requirements, and based on their findings, recommendations are made for a revised capital adequacy framework.

Chapter 27 demonstrates that the link between credit risk and the current financial crisis accentuates the importance of measuring and predicting extreme credit risk. CVaR is a method used widely in the insurance industry to measure extreme risk, and it has also gained popularity as a measure of extreme market risk. The authors combine the CVaR market approach with the KMV/Merton credit model to generate a model measuring credit risk as applied to banks under extreme market conditions.

The KMV/Merton model is a popular model used by banks to predict PD of customers based on movements in the market value of assets. The model uses option pricing methodology to estimate DD based on movements in the market value of assets. This model has been popularized among banks for measuring credit risk by KMVs who use the DD approach of Merton but apply their extensive default data base to modify PD outcomes. The authors apply this measure to the banks themselves. The current financial crisis places the spotlight on the ability of banks to meet their financial obligations. This chapter examines and compares changes in bank default risk in the United States and the United Kingdom over time, including the current period of crisis. VaR has become an increasingly popular metric for measuring market risk. VaR measures potential losses over a specific time period within a given confidence level. This concept is well understood and widely used. Its popularity escalated when it was incorporated into the Basel Accord as a required measurement for determining capital adequacy for market risk. CVaR measures extreme returns (those beyond VaR). Pflug (2000) proved that CVaR is a coherent risk measure with a number of desirable properties, such as convexity and monotonicity, among other desirable characteristics. Furthermore, VaR gives no indication on the extent of the losses that might be encountered beyond the threshold amount suggested by the measure. By contrast, CVaR does quantify the losses that might be encountered in the tail of the distribution. The authors apply CVaR in their model of DD. The study finds that U.S. and U.K. banks are in an extremely precarious capital position based on market asset values, especially in the United Kingdom, where the banks are more highly leveraged. They further find the existing credit ratings of banks are much more favorable than default probabilities indicate they should be. Movements in market asset values are currently not factored into capital adequacy requirements, and based on their findings, recommendations are made for a revised capital adequacy framework.

Chapter 28 examines how the regulators of financial institutions have identified poorly designed remuneration structures as a major contributing factor to the losses in financial institutions that precipitated the global financial crisis. Specifically, many structures encouraged excessive risk-taking on the part of individuals in these firms by paying bonuses for writing volume business in loan markets, without appropriate adjustment for the risk being incurred. The response from a number of regulators has been that financial institutions must review and "correct" their remuneration structures to prevent excessive risk-taking. In order for this to be achieved, it is fundamental that an institution identify and articulate its risk appetite. Institutions must also anticipate and establish controls to mitigate agency problems that arise with the use of risk-adjusted performance measures, as well as deal with the phenomenon of managerial overconfidence with respect to estimates of risk. These conceptual factors present significant challenges that threaten the effectiveness of risk-adjusted remuneration structures in financial institutions. There is much work to be done on the part of regulators and other relevant authorities with respect to these issues.

Chapter 29 examines the threat faced by the entire economy, both nationally and internationally, when banks get into financial trouble. Government intervention is often called for to reduce the adverse effects that would otherwise occur. Governments and the economists who work for them estimate the adverse effects that would ensue in the absence of intervention. Multiplier theory is often employed to show the secondary effects that are expected to ripple through the economy.

The problem with this approach is that policy makers focus only on the losses incurred by the banks and the adverse ripple effects that are caused by the problems in the banking sector. A good utilitarian analysis would examine the effects a policy has on all groups, both long term and short term. Rights issues are often ignored since utilitarian analyses almost uniformly disregard the existence of rights.

This chapter examines the current banking crisis and applies both the utilitarian ethics and the rights theories of Frederic Bastiat to determine when, and under what circumstances, government intervention in financial markets can be ethically justified.

Chapter 30 shows how, in the aftermath of the global financial crisis, there has been considerable controversy over the role of the state in relation to financial markets. The author demonstrates that Hong Kong's introduction of comprehensive regulation of financial services in response to repeated market failures did not deter investment or stifle innovation in this bastion of free enterprise. By the end of the last century, it had become a major international financial center, offering the highest standards of banking performance and the most open business environment in Asia. Hong Kong offers a persuasive case in favor of official measures to maintain depositors' confidence and to stabilize financial markets even when the government and the business community are deeply committed to laissez faire.

Greg N. Gregoriou and the Contributors

Editor

Greg N. Gregoriou has published 34 books, over 50 refereed publications in peer-reviewed journals, and 20 book chapters since his arrival at the State University of New York (Plattsburgh) in August, 2003. His books have been published by John Wiley & Sons, McGraw-Hill, Elsevier-Butterworth/Heinemann, Taylor & Francis/CRC Press, Palgrave-MacMillan, and Risk books. His articles have appeared in the *Journal of Portfolio Management*, the *Journal of Futures Markets*, the *European Journal of Operational Research*, the *Annals of Operations Research*, and *Computers and Operations Research*. Professor Gregoriou is a coeditor and editorial board member for the *Journal of Derivatives and Hedge Funds*, as well as an editorial board member for the *Journal of Wealth Management*, the *Journal of Risk Management in Financial Institutions*, and the *Brazilian Business Review*. A native of Montreal, he obtained his joint PhD in finance at the University of Quebec in Montreal, which merges the resources of Montreal's four major universities (McGill University, Concordia University, University of Quebec at Montreal (QUAM), and École des Hautes Études Commerciales [HEC]–Montreal). His interests focus on hedge funds, funds of hedge funds, and managed futures. He is also a member of the Curriculum Committee of the Chartered Alternative Invesmtent Analyst Association.

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I

Banking Gross Negligence and Shadow Banking System

CHAPTER 1

The Banking Crisis of the New Millennium—Why It Was Inevitable

Carolyn V. Currie

CONTENTS

Under the new theory of financial regulation developed by this author, collapse in the United States financial system was inevitable. Removal of protective measures accompanied by the failure to increase prudential measures, accompanied by conflicting state/federal relations, barriers to entry to the real estate industry, together with regulatory confusion resulting in regulatory arbitrage, set the scene for not only erosion from within, but also for transnational crime to destabilize the entire fabric of the world financial system. Understanding the causes helps in rectifying the financial architecture. This chapter details the enormous numbers of regulatory models that can exist and outlines formulas to assess the type of regulatory model that should be imposed on a system after assessing the stage of economic and social development.

1.1 INTRODUCTION

Today, we are greeted everyday in the media with common excuses for the global financial crisis (GFC). We admit a lack of prudential supervision and blame laissez-faire capitalism. However, we never admit to the major flaws in the regulatory structure as well as the political philosophy of the largest world economy that has almost destroyed a decade of progress.

The fact is that not only in the United States have state governments been left to administer the originators of mortgages and credit default swaps, but the federal government has never complied fully with the Financial Action Task Force money laundering provisions. By not complying they have created the ability to abort such legislation using cross-border transactions and complex financial instruments. In addition not only was the implementation of Basel II lobbied against by U.S. financial interests since 1999 and never instituted in the United States financial system, which could have highlighted the overlending to the residential mortgage market, but since 2003 SEC recommendations to control the hedge fund industry were never instituted.

A further flaw in the United States market is the fact that their real estate industry is not subject to market forces and that the tax system can encourage overborrowing. For instance, in Australia, the buyer pays no premium to a broker to find a property. All fees are negotiable and rarely go above 2%, not the 6% that is paid in the United States. In Australia, real estate agents can offer properties nationally and are subject to federal legislation. Overseas buyers can buy in subject to certain requirements—for instance, properties below A$400,000 are protected, and overseas investors in the unit/apartment market cannot buy second-hand real estate. Moreover the exemption from capital gains tax, but the non-expensing of interest on home loans against income, encourages owners to never walk