

# The Impact of the Subprime Crisis on Global Financial Markets, Banks and International Trade



The Impact of the Subprime Crisis on Global  
Financial Markets, Banks and International Trade:  
A Quest for Sustainable Policies

By

Indranarain Ramlall

**CAMBRIDGE  
SCHOLARS**

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P U B L I S H I N G

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*Dedicated to my parents, the reason for my existence, and to God for  
granting me the strength to write this book.*

*“Success is not final, failure is not fatal:  
it is the courage to continue that counts.”  
—Winston Churchill*



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## PREFACE

With the occurrence of the US crisis, international focus has shifted from finance to financial stability, especially when vigorous efforts have been channelled worldwide to preserve financial stability. Financial stability constitutes a fascinating area by virtue of its inherent connection to a plethora of directly or indirectly related issues, including macroeconomic stability, debt sustainability and banking sector stability, amongst others. Interestingly, financial stability is so important that I strongly believe that the mandatory policy of any central bank in the world should be first and foremost to preserve financial stability, followed by price stability. The reason is that price stability is a necessary but not sufficient condition for financial stability. Beyond that, financial stability is more encompassing and hence best captures the whole intricacies of an economy's risks, let alone inflation risks.

I have written this book keeping in mind a broad audience. The book offers analyses of financial stability risk assessment at three main levels, namely international financial markets, banks and international trade. The research is innovative, timely and highly luscious in terms of policy implications. I believe that these three areas constitute the core fundamentals prerequisite for the smooth functioning of the global financial system. I coin the term “Egonomics” to label the wrong application of “Economics” in view of concentrating benefits to certain parties at the expense of deadweight losses to society. Many cases of “Egonomics” have been identified during the crisis and are reported in this book.

Today, the world is buffeted by three main crises, namely, debt crisis, ageing population and climate change. In that respect, it is utterly misleading to focus solely on policies to curb a debt crisis. Indeed, having too much emphasis laid upon debt sustainability issues signifies scaling up the level of Gross Domestic Product, even at the expense of witnessing a considerable increase in the level of CO<sup>2</sup> emissions. In a similar manner, issues relating to a growing ageing population are gaining momentum in developed economies; this gnaws at savings levels and subsequently ricochets into subdued future growth prospects. To deal with these crises, new policies have also been suggested.

I hope that the book will incite new thinking and open up possibilities for invigorating research. The book has been written for academicians,

policy-makers, regulators and researchers. It can also be used as a research text in the area of financial stability. I welcome any comments from readers.

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# CHAPTER ONE

## INTRODUCTION

Today, financial stability lies at the heart of any financial system in the world. Financial system stability is demonstrated by the capacity of a financial system to bear external shocks without engendering significant impairments on its macroeconomic activities. Alternatively stated, financial stability signifies the ability of the financial system to be resilient against any unexpected shocks. Financial stability can also be defined as a situation whereby there is public trust in the financial system. Conversely, financial instability pertains to a situation where even a small negative shock can create drastic and adverse consequences. By default, financial stability is deemed to be a public good because any financial crisis is symptomatic of market failure. The US crisis constitutes a major lesson to humanity in terms of devising new policies to consolidate the resilience of the world financial system.

One of the most widely used methods of gauging financial stability pertains to systemic risk assessment, in view of sieving out any potential threat that can spark off detrimental consequences onto the real economy. For instance, in the case of households, a fall in the share prices of their stock holdings not only eats up their wealth but also undermines their consumption of goods and services. Based on the fact that a systemic financial risk constitutes a rather rare event, it is usually not easy for the financial authorities to fully gauge the impact of such a risk on their economies. Notwithstanding, regulatory authorities should be on constant guard and regularly perform stress testing exercises.

To obviate any financial crisis, authorities usually wield two main tools: a macroprudential approach to deal with systemic risk (such as in systemically important institutions) and a microprudential approach to cope with institution-specific risk. Whenever distortions are exerted on financial markets, they impair on the efficient allocation of funds and result in subsequent costs to taxpayers. The severity of any crisis is principally assessed via its effects on the real economy and is mainly determined by the extent of financial system interconnectedness. For example, the stronger the interconnection between banks, firms and

households, the more pronounced the effects of financial instability tend to be. Larger financial systems constitute a double-edged sword. On one hand, it holds that the larger the financial system, the better its ability to absorb any given shock. On the other hand however, in the case of a large global shock, the larger the financial system, the stronger the transmission mechanisms are of the adverse effects.

The US subprime crisis, which started in 2007 with losses manifesting at two Bear Stearns hedge funds, left behind permanent scars on the financial system. Amongst all the financial crises that have buffeted the world, the US subprime crisis is considered unique. First, the amount of losses incurred were huge (estimated in October 2012 by Mark Adelson, former chief credit officer at Standard & Poor's, to hover around \$15 trillion); it is considered the worst crisis since that of the Great Depression of the 1930s. Second, the crisis manifested itself in a period of free trade, whereby positive shocks induced positive growth effects, while negative shocks generated strong contagion effects. Above all, globalisation strengthened the speed at which the crisis could spread throughout the world, since many countries allowed entry to foreign banks under the globalisation philosophy. Third, the crisis did not seem to end even after the use of distinct policies such as government bailouts (which were used in the case of American Insurance Group) or unconventional monetary policies (Quantitative Easing).

This book is organised into seven chapters, all imbued with innovative research and policies. The second chapter focuses on the causes, consequences and policies to adopt with respect to the US subprime crisis. The author points out the need for a country Financial Stability Fund that would cater not only for systemically important institutions but also for those institutions imbued with a strong level of interconnectedness. Among other proposed solutions, the author argues for greening or socialising the "cost of capital" as the best way to hedge against erratic business cycles and thereby mitigate losses. Moreover, the author finds that Financial Stability Reports are not published by all central banks (only around 38 per cent of all central banks do publish Financial Stability Reports). Above all, for those reports which are published, there is still a lack of harmonised features, timeliness concerns and extent of authenticity in reporting and even divergence when compared to IMF country reports. Concerted efforts between central banks and IMF/BIS staff would undeniably leverage the quality and comparability of Financial Stability Reports worldwide. Ironically, some countries have utterly ceased reporting Financial Stability Reports post the onset of the crisis.

The third chapter of the book develops a Global Financial Stability Multifactor Arbitrage Pricing Theory model to uncover any crisis-induced irrational exuberance. This is executed through the investigation of 29 world assets, with findings confirming potential irrational exuberance for certain assets. The Global Financial Stability Multifactor Arbitrage Pricing Theory model is expected to be widely used by policy-makers when assessing international asset risk. The fourth chapter of the book probes into banks' specific and macroeconomic factors under a pre- and post-crisis investigation by using a unique database based on country-wise aggregate banks' data. Findings show that capital strength and funding costs constitute the most important drivers for banks' profitability, considering the fact that Portugal, Italy, Greece and Spain were all subject to problems even before the crisis. The fifth chapter develops a credit risk model that focuses on the repayment capacity of developing countries in the world with specific focus given to international trade. Results show that international trade has been particularly stimulating during the pre-crisis period with a positive effect noted on the debt repayment capacity of developing countries. However, post the crisis, no such effects prevail. Such a finding adds significant momentum to the fact that the crisis may already be curbing growth prospects via the trade channel for developing countries, with potential rekindling effects on protectionism.

In the sixth chapter of the book, the author draws attention to the need to enhance public debt management functions. Ironically, with the onset of the crisis, this can constitute the proper time for developing countries to leverage their debt management strategies. In the last chapter of the book, the author comments on global policies to be adopted to mitigate against not only the US subprime crisis (debt crisis) but also two other crises which have already taken firm grip on society, namely an ageing population and the adverse effects of climate change. The author argues that global policies should be trident in dimension to mitigate against any potential backfiring effects. For instance, the international community seems to be so focused on the financial crisis that efforts to leverage economic activities may further aggravate carbon emissions worldwide. Similarly, ageing populations increasingly impinging upon developed countries has the effect of triggering significant strains on savings and growth prospects. The author argues for the establishment of long-term approaches to policies; social banks; green finance; radical changes in the work environment; limits to speculation in derivatives; a shift from "Egonomics" to "Economics;" checks on growth of the artificial economy, as well as a re-engineering of bank loans approvals via inclusion of sustainability reports.

For academics, the crisis can be viewed in something of a positive light—perhaps possessing an element of spiritually ingrained wisdom for humankind, if you will—since it provides the opportunity to rethink the world of finance and propose new theories. Only a theory can kill a theory; dead theories cause new theories to develop, which can in turn be utilised until they fail. In essence, the efforts dedicated towards scaling up wealth for years went to waste as the US witnessed massive losses. This may imply that the concept of equilibrium may need to be revised in terms of having equilibrium as a balancing state between the material world and the spiritual world.



# CHAPTER TWO

## CAUSES, CONSEQUENCES AND SOLUTIONS TO THE US FINANCIAL CRISIS

### **2.0 Introduction**

Three financial experts are widely acclaimed to have predicted the global financial crisis. Nouriel Roubini is considered to be the father of the crisis as he anticipated the coming collapse of the US housing market. Charles Morris, author of the book *Trillion Dollar Meltdown*, published in 2008, also predicted the crisis in early 2007. Finally, George Magnus foresaw that the US subprime crisis would result in recessions. However, to date, there still exists no single and clear-cut explanation as to the cause of the US financial crisis. The underlying consensus is that a mixture of factors contributed to the crisis, including falls in house prices, securitisation, information asymmetry, low interest rates, and leverage effects of hedge funds. This chapter is split into three sections; Section 2.1 addresses the causes of the US crisis, Section 2.2 deals with its consequences, while Section 2.3 focuses on possible solutions.

### **2.1 Explanation on the chart explaining the schema of the crisis**

I identify three main factors/forces that paved the way towards the US subprime crisis: core structural weaknesses or cracks, domestic shocks and external shocks as illustrated in Figure 1. The structural weaknesses refer to existing inefficiencies that permeated the unregulated banking sector of the financial system, such as long periods of deregulation following the repeal of the Glass-Steagall Banking Act of 1933 (no distinction between commercial banking and investment banking), real estate bubbles, opaqueness in securities, existence of information asymmetry, and perverse remuneration mechanisms. Domestic shocks pertain mainly to the fall in house prices, which acted as the catalyst for the crisis. External shocks refer to the burgeoning difference in current account positions

without proper adjustments in the exchange rates. For instance, despite the fact that China rejoiced over sustained current account surpluses, it strived even hard to maintain a low currency value. The crisis has also pointed out the importance of catering for endogenous risks, which had previously triggered harmful impacts onto the financial system via feedback effects.

**(a) Macroeconomic liquidity risk:** Large capital flows are usually associated with crisis periods. In the year 1973, oil-producing countries witnessed a significant rise in due to a fourfold hike in oil prices. These surplus countries channelled their monies to US banks that later lent them out to Latin American countries. However, the latter defaulted. Subsequently, Brady bonds were created to revamp the market debt instruments, allowing banks to alter their claims on developing countries into tradable instruments. Excess global liquidity coupled with limited assets usually constitutes the most germane conditions for the existence of asset price bubbles.

Ironically, the financial crisis appears to be something of a repetition of the above process. The source of the crisis emanated from macroeconomic imbalances at the international level based on current accounts imbalances and exchange rates misalignments; for example, China had been clinging to undervalued exchange rates for many years to boost exports and thereby accumulate burgeoning surpluses which then flew to the US economy. Based on the need to generate higher returns on these funds, US banks channelled these funds to local credit markets linked to mortgages. As cheap funds were present, this income boosted up the demand for mortgages, thereby engendering house price bubbles.<sup>1</sup> These price bubbles fed on themselves chiefly when higher house prices enshrined collateral values so as to induce more lending, which in turn led to higher house prices based on rising demand for houses.

**(b) Securitisation:** Credit risk transfer instruments consist of credit derivatives like Credit Default Swaps and credit securitisation like Collateralised Debt Obligations. Securitisation can be technically defined as the transformation of illiquid nonmarketable assets into liquid marketable ones, such as the pooling up of mortgage loans into liquid Collateralised Debt Obligations, which are then sold to investors. Without securitisation, banks would rely on deposits to provide loans to borrowers endowed with sound collaterals and repayment capacities. With securitisation, banks were

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<sup>1</sup> Technically speaking, a bubble can be defined as a consistent and sustained divergence of an asset market price from its fundamental or intrinsic value.

able to transform the loans into securities that could be offloaded to investors. However, the issue of concern about securitisation pertains to a system whereby in lieu of effectively transferring the risks, banks were taking back the risks again via investments in the mortgage-backed securities—synonymous to pulling the gun's trigger upon oneself. This is depicted in Figure 1 as the red thick arrow connecting banks to mortgage-backed securities.

One of the causes of the crisis was improper use of securitisation. Securitisation was devised mainly for credit risk transfer to investors willing to bear credit risk. However, this innovative financial tool was misused by banks, who neglected their initial purpose by employing them principally to increase their leverage to such an extent that a negative shock would convert these off-balance sheets onto on-balance sheet modes.<sup>2</sup> This utilisation thereby substantially increased the exposure of banks. Consequently, securitisation camouflaged the separation of market and credit risk since banking book positions could be hedged using trading book instruments. Banks had strong incentives to scale up their components of asset-backed securities because the latter involved low capital weights based on their high ratings by rating agencies. These off-balance sheet instruments consisted mainly of asset-backed commercial paper and structured investment vehicles. Once the quality of these assets deteriorated, investors would have recourse to the banks, which would then provide both liquidity and credit enhancements.

As long as things remained rosy, banks would avail of such leverage to spur profits. However, once a negative shock emerged, it would have devastating consequences for both the bank, in terms of eroding away its' capital base, as well as the economy as a whole via the ripple effect. Consequently, banks were exposed to significant latent risks not truly captured by their capital base, which evidently burst into larger losses for banks having greater exposure to asset-backed securities. The irony of this is that latent risks built subsequent burgeoning latent risks which fed upon themselves, since by having lower risk weights for risky assets, the implicitly saved capital could be employed towards further leverage activities. The process was accentuated on the back of rising house prices, which acted as a real catalyst to the securitisation process. Consequently, once the bedrock component was affected, i.e. falling house prices, this engendered explosion in all parts of these intricate processes with direct

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<sup>2</sup> All three types of conduits, whether fully supported conduits, partially supported conduits or structured investment vehicles, have recourse to the bank balance sheet.

effect on banks' balance sheets in the form of insufficient capital base. This clearly explained why those banks which had considerable exposures to asset-backed commercial paper suffered the most from the crisis.

**(c) Securitisation and credit boom:** Securitisation has been implemented in view of alleviating the credit risk of banks by transferring credit risk to those willing to bear it. Since these securitised transactions were recorded as off-balance sheet items as long as collaterals value (house prices) remained in the comfort zone, it signifies that no strong capital requirements were needed for these securitisation transactions. Securitisation enabled banks to leverage up as much as they could and in the process they provided credit to bad borrowers. Excessive leverage bred inefficient allocation of capital. Above all, this provided an opportunity for banks to offload bad borrowers' risks onto the market—a blatant instance of adverse selection. Bad borrowers were provided with credit as they were made to pay higher interest rates, and these signified higher profits for banks. In this process, securitisation was amplified in lieu of mitigating credit risk, which assisted in rendering the crisis to a mountainous scale. Central banks acted as central bombs as they clung to excessively low interest rates, which induced robust speculative forces so as to accentuate the process. When things remained positive, this booming state stimulated not only an appetite for leveraging but also asset bubbles in the housing market. However, once things turned sour, the bubble burst, thereby unleashed deleveraging and company collapses. Indeed, once the collateral value fell below the loan value, lenders started to undertake forced sales to recoup on funds and this significantly drove down values of other houses, which thereby negatively impacted on loans along with massive defaults.

**(d) Characteristic of subprime loans:** The nature or feature of subprime loans was such that their refinancing hinged mainly on the appreciation of mortgages' values so that these loans generated large-scale macroeconomic effects. Indeed, these loans were fixed in interest rates for the first two or three years and thereafter were subject to adjustable rates so that the borrowers either defaulted or refinanced their loans once the fixed interest rate period was over. Substantial increase in subprime loans was caused by easy credit, low interest rates and the securitisation process, which was stimulated by high ratings on assets.

**(e) Hedge funds, leverage and shadow banking:** Leverage signifies getting funds by increasing debt to amplify investment returns. Hedge

funds<sup>3</sup> along with private equity firms have mostly been the catalytic components behind leverage investments. However, leverage constitutes a double-edged sword with strong asymmetric effects; it amplifies not only profits during good times but also losses, thereby scaling up the probability of going bankrupt during bad times. For instance, a highly geared company can enhance its profits by taking on more debt during periods of low interest rates. However, should interest rates be subject to drastic hikes, this would imply rising interest rates, which directly unleash concerns about the company's repayment capacity.

The shadow banking system inherent in the financial systems of developed countries such as the US also played an important role in inducing the crisis. In principle, shadow banks operate like normal banks by borrowing short-term but investing the proceeds into long-term assets. However, compared to the conventional banking system, shadow banks are not regulated and thereby do not respect any capital requirements. Most importantly, hedge funds, a component of shadow banking, cling to excessive leveraging. This results in a strong systemic risk, chiefly when hedge funds tend to demonstrate correlated positions, which poses substantial negative externalities to the financial system.

**(f) Interbank market and liquidity risk:** Liquidity risk can be defined in three ways. First, liquidity risk, if understood in its market definition, is when an asset can easily be sold without being subject to major costs. Such a definition also implies the inability to find funds despite having high quality assets on the balance sheets. Second, liquidity risk refers to the extent of assets-liabilities mismatch and is usually captured under the risk management section of most financial statements in the form of gap analysis. A third way to classify liquidity risk involves the type of focus—local or global. At a local level, liquidity pertains to the extent to which the bank can easily fund itself from the interbank market. During the crisis, interbank markets were frozen, which led to rising spreads and meant that banks found it costly to refinance their interbank liabilities. These also generated negative externalities since, despite the fact that some banks were not exposed to toxic assets, they were still subject to financing difficulties. At the global level, macroeconomic liquidity risks manifest themselves in the form of a “savings glut” like that of China, other Asian countries, and oil-producing countries channelling monies to the US, the latter of which is distributed as cheap credit to uncreditworthy borrowers, as well as funding projects of companies which may not be

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<sup>3</sup> Effectively speaking, hedge funds are well-known for selling volatility.

endowed with positive NPV projects. In a parallel manner, macroeconomic liquidity lies at the basis for carry trades, which further increase risk.

It is important to bear in mind that ordinarily, liquidity tends to work perfectly without any constraint; however, during stressful conditions, liquidity tends to dry up and thereby engenders heightened volatility; an inverse relationship exists between liquidity and volatility. This explains the need to consider liquidity stress testing exercises in view of sieving out any feasible liquidity risks, chiefly in the banking sector.

It can be argued that the US financial crisis originated from macroeconomic liquidity risk, which then transformed into a bank liquidity crisis, thus engendering the need for Basle III.

**(g) Credit derivatives and credit boom:** Credit Default Swaps were employed to mitigate risk exposures related to the Collateralised Debt Obligations. With credit derivatives, banks were able to shift credit risk to other players, which allowed them to provide more loans to borrowers. This helped in the creation of the credit boom.

**(h) Traders and herd behaviour:** Traders followed the “herd behaviour,” thereby ignoring the importance of clinging to fundamental or intrinsic values, and hence amplifying the bubble’s effects. Short-term investment strategies are heavily tilted towards technical analysis tools which utterly fail to capture fundamentals; this means that an investment is made purely on the basis of high short-term profits, independent of whether the company is sound in terms of financial ratios. In principle, any sound investment undertaken should be based on three important elements: fundamental analysis, technical analysis and intuition.

**(i) Extremely accommodative monetary policy and central bombs:** Calm water is very deep as to induce drowning—this is also the truth in financial markets. As central banks espoused low interest rates, the latter induced strong speculation in view of making higher and higher profits without any checks made onto how the artificial economy was growing with respect to the real economy. In the process, this triggered considerable leveraging (asset bubbles) which when pricked, released deleveraging and vicious circles of falling prices and defaults. **Central banks were implicitly acting like central bombs** with low interest rates inducing carry trades, characterised as going long position in high-yielding currencies and short position in low yielding currencies. Above all, the Libor scandal showed that the Bank of England did not take any concrete measures, despite being aware of the Libor manipulations.

The Libor scandal revealed deceptive activities undertaken by banks which adjusted the Libor rates as and when required to generate profits from trades, with low Libor rates reflecting heightened confidence in the financial system and high Libor rates being symptomatic of high levels of risk aversion. When the Libor scandal broke, it transpired that Libor manipulations had been a common practice since 1991. Such Libor manipulations directly impacted on the US derivatives markets and thereby engendered negative spillover effects. In June 2012, Barclays Bank was forced to pay \$200 million to the Commodity Futures Trading Commission, with total payments of \$453 million to both UK and US regulators.

**(j) Poor regulatory structures:** Lax regulatory policy prevailed since the capital base of banks was found to be underestimated with respect to the level of risk assumed. This was also due to regulatory authorities not creating the proper demarcation line between commercial banking and investment banking.

**(k) Opaqueness in instruments:** It should also be stressed that the asset-backed commercial paper and structured investment vehicles were opaque in nature; banks had no knowledge of the potential losses, should the asset-backed commercial paper market be subject to stressful conditions.

**(l) Guarantees:** Both direct guarantees in the case of deposit insurance schemes and indirect guarantees in the case of certain banks being “too big to fail,” ironically triggered distortions in the financial system in terms of increasing the costs to taxpayers.

**(m) Lax credit policies and credit boom:** Imprudent credit policies were also in place, such as increases in loan-to-value ratios due to easy credit flows, which led to poor lending standards. Banks also practised vigorous lending so that securitised products were sold to investors who did not understand the true nature of these products. Above all, it is a pity to note that financial institutions lacked not only knowledge of the loans that they securitised, with most securitised products being highly complex and not transparent, but also knowledge of who was holding these complex products. Ultimately, the craving for profits acted as a blindfold to proper risk management.

**(n) International trade:** The positive effects of globalisation have tapered as bruised economies begin to rekindle their own economic activities; a useful analogy in this instance is that if everybody's house was on fire, each homeowner would strive hard to save their own house first. This can be simply captured by the basic Aggregate Demand function whereby if (X-M) component does not work, stress would have to be laid upon C, I and G components to stimulate demand and rekindle local economic activities.

**(o) Derivatives ironically inducing higher risks:** Derivatives markets have been particularly helpful in the risk management activities of many companies in the world for distinct types of risks like credit risk, interest rate risk, liquidity risk and currency risk. By luring hedgers, speculators and arbitrageurs, derivatives markets also induce liquidity and thereby reduce transaction costs. Moreover derivatives (in particular options) help to sieve out volatility (implied) and thereby improve on analysis that would rely solely on historical volatility.

There are two types of derivatives markets: Over The Counter markets and Exchanges. Exchanges have recourse towards standardised contracts which induce liquidity, transparency and well-contained counterparty risk since the Clearing House acts as a buyer to every seller and as a seller to every buyer. However, in the case of Over The Counter markets, counterparty risks are significantly increased by virtue of customised and non-standardised products. Above all, there is a higher level of counterparty risks since each market player directly deals with another market player (bilateral system) rather than trading with a centralised player (like the Clearing House in an exchange market). The statement made by Warren Buffet (2002) whereby "Derivatives are financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal," undeniably holds true.

Finally, the true meaning of "Economics" has not been applied in practice but simply moulded to suit the specific needs of distinct parties, and is properly renamed as "Egonomics," as captured in Table 2.1. This table depicts the differences between "Economics" and "Egonomics" on several fronts such as securitisation, financial derivatives, central banks, and rating agencies, among others.



**Table 2.1: Establishing the demarcation line between Economics and Egonomics**

<b>Specific Focus</b>	<b>Economics</b>	<b>Egonomics</b>
<b>Securitisation</b>	Credit risk transfer	Offload risk from bad borrowers
<b>Financial derivatives</b>	Risk-sharing	OTC-opaqueness/Complex
<b>Balance of payments imbalances</b>	Surplus countries— appreciating currencies; Deficit countries —depreciating currencies	China keeping undervalued currency
<b>Information</b>	Free flow of information	Asymmetric information-Market players having no access to timely and accurate information
<b>High Foreign Reserves</b>	Portfolio Diversification- spread between both real and financial assets	Skewed towards financial assets to generate high short-term profits
<b>Trading philosophy</b>	Fundamentals	Herd Behaviour-Traders acting like frantic ants
<b>Central Banks</b>	Sound regulators	Central Banks = Central Bombs-Bank of England aware of Libor manipulations well before the Libor Scandal. Extremely accommodative monetary policy stance induced excessive risk-taking. Allowed regulatory arbitrage
<b>Banks</b>	Well-capitalised	Shadow banking like hedge funds; regulatory arbitrage
<b>Rating Agencies</b>	Risky assets should be given low ratings	Risky assets given higher ratings; Rating agencies acting as both driver and traffic controller
<b>Credit Processing</b>	Sound repayment capacity and proper collateral values	“No Income, No Job and No Assets” (NINJA) borrowers

## **2.2 Consequences and implications**

### **(a) Moral hazard and frantic bailouts**

The crisis has shown increased moral hazard problems as governments intervened to save important institutions like the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). It can be argued that the failures of these institutions would have entailed major costs to the financial system, let alone strong negative effects onto the real side of the economy. However, by saving these institutions, the government indirectly increased the scope for moral hazards in the case of systematically important institutions.

### **(b) Central Bank Balance Sheets as Shock Absorbers**

Central banks' balance sheets for both developed and developing countries have undergone drastic changes following the crisis. This signifies that the risks have now been transferred to central banks (as shock absorbers) which are now subject to new challenges in terms of balance sheet restructuring. In that respect, empirical studies are further needed at the central bank level to gauge the level of risks borne by central banks. For instance, one of the recurring aspects among most central banks' balance sheets pertains to a considerable rise in Special Drawing Rights under the IMF. The benefit that central banks avail of is that their liabilities side does not involve major costs based on their sole vested power in the issuance of notes and coins.

### **(c) Considerable deadweight losses**

It is no wonder that the rising number of households who defaulted on their loans triggered significant deadweight losses to the financial system. Above all, selling pressures on mortgages further drove down the prices in a vicious spiral which could also affect households, who despite having sound repayment capacity, were still subject to negative net worth.

### **(d) Burgeoning Public Debt and declining private debt**

During the period of the financial crisis, massive government expenditures led to escalating government debts. As far as private debts (household debt makes up a large proportion of the components of private debts) were concerned, they declined on the back of dwindling economic activities and incomes. Moreover, burgeoning public debt levels compelled governments to resort to taking austerity measures, which adversely impacted upon growth, which was already feeble.

**(e) Countries operating under Fixed Exchange rate regimes bear more pressures**

It is widely accepted that countries subject to fixed exchange rate regimes have to sacrifice internal balance to maintain external balance, meaning that an inherent conflict of objectives prevails. Above all, under crisis conditions, there is a need for a higher level of reserves to maintain external balance. For instance, the Namibian dollar is linked to the South African rand so that despite experiencing sluggishness in demand, Namibia is compelled to cling to a similar inflation rate as that prevailing in South Africa so as to ensure exchange rate parity. In that respect, Namibia is forced to sacrifice its internal policy of boosting demand under crisis conditions merely to ensure exchange rate parity. This can feasibly account for the very high unemployment rate in Namibia, chiefly if it happens to be of a frictional nature.

**(f) Decline in remittances, Foreign Direct Investments Portfolio Investments and aid flows**

The crisis has engendered significant declines in remittances to developing countries, some of which heavily relied on them to spur growth. This signifies that countries have to source funds elsewhere to be able to maintain growth prospects. In a parallel manner, Foreign Direct Investments and Portfolio Investments have undergone downward trends. The crisis has also undermined the level of aid flows to African countries which indirectly bear the adverse effects of the crisis, despite having no or fewer exposures to toxic assets—a glaring instance of negative spillover effects.

**(g) Implicit costs of higher public debt due to poor central banks' profitability**

One important element, which has been utterly overlooked in the aftermath of policies taken to deal with the crisis, pertains to the profitability of central banks. Indeed, the era of very low interest rates has significantly undermined the net interest income of central banks. This results in vital repercussions on public debt since central banks' profits in most countries go to the government purse. Such a state serves to considerably lower the ability of governments to finance themselves from central banks' profits; this can therefore be considered as implicit costs in terms of higher public debt.

**(h) Fair Value Accounting—Curtailing excessive risk-taking**

Had fair value accounting been overlooked, this could have caused more risk to the financial system in the US. Indeed, by marking to market, fair

value accounting depicted the extent of financial damage to institutions. If cost accounting were to be maintained, institutions would be urged to undertake even higher levels of risks in view of making good for past losses and thereby significantly scaling up the upside risks to financial stability.

**(i) Lack of Regulation increases taxpayers' costs**

Lack of regulation induced perverse incentives and generated negative externalities. The crisis has clearly shown the necessity of creating a proper demarcation line between commercial banking and investment banking. Authorities now mourn having repealed the Glass-Steagall Banking Act of 1933 in 1999.

**(j) Level of Financial Development: Trade-off between Resilience and Contagion**

The financial crisis has clearly demonstrated that the more financially developed a country, the quicker the transmission is of shocks throughout its whole financial system. Financial innovation helps to scale up resilience of the financial system with respect to shocks but they also quickly spread to the whole system. This is the inherent trade-off imbued with financial development: resilience versus contagion. In a parallel manner, the presence of foreign-owned banks helps to diversify the provision of credit but ironically it represents one of the key transmission channels of outside shocks onto the local financial system.

**(k) Impotency of Portfolio Diversification**

Modern Portfolio Theory points out the benefits of diversification in reducing risks. However, when the US crisis broke out, portfolio diversification benefits faded away. In essence, as the crisis engulfed global markets, assets commoved strongly as to wipe out potential diversification benefits, thereby rendering Modern Portfolio Theory impotent. This signifies that portfolio diversification constitutes a double-edged sword; when things are going well, diversification does work but when things go sour, no benefits can be derived from portfolio diversification. Under the same perspective, the strategy used by multinational banks to enhance their value by diversifying their activity base is unlikely to pay off during crisis times.

**(l) Ponzi Schemes Unveiled and Tragedies**

The crisis has unveiled the existence of ponzi schemes, which would have otherwise remained hidden. The longest and largest ponzi scheme ever

disclosed in history pertained to Bernard Madoff, who was later sentenced to 150 years of imprisonment for hiding a fraud of \$65 billion. Unfortunately, such fraud also left behind human tragedies. The son of Madoff, Mark Madoff, who was running a separate division at Madoff Securities, committed suicide by hanging himself in 2010. Jeremy Friebling, son of Madoff's accountant also killed himself after his father, David Friebling, pleaded guilty in 2009. Although there is no clear indication as to whether Jeremy Friebling's suicide is linked to the fraud scandal, it does appear that such things do not occur out of thin air. These examples provide robust evidence that excessive greed leads to bleed and not to bliss.

#### **(m) Macroeconomic evils**

The crisis occasioned unwanted macroeconomic evils such as loss of GDP, rising unemployment with corresponding human sufferings and loss in wealth. In addition, by increasing the capital base of banks to enshrine their resiliency levels, the authorities ironically reduced the level of loanable funds. Alternatively stated, as banks maintained a higher capital base to cushion any potential losses, this signified constraint on credit creation process. Moreover, rising sovereign risks in certain countries signified that banks found it difficult to obtain short-term funding. To scale down funding pressures, some euro-area banks sold liquid assets, including equities, which contributed towards further equity price declines.

#### **(n) Vicious circles of rising yields**

Countries like Portugal, Italy, Greece and Spain underwent vicious circles of rising yields. As debt levels rose, this led to downward credit ratings. Consequently, whenever these countries needed to raise funds, they were subject to higher costs to compensate investors for the higher risks involved in investing in the issued bonds. Consequently, these rising costs led to even higher public debt which in turn induced further downgradings, all sparking off vicious circles of higher debts and rising costs of issuances. Downgradings to junk bonds have also been noted for certain countries. The standard benchmark used for capturing European sovereign spreads is via the difference between a given 10-year European government bond yield with respect to its German counterpart.

#### **(o) Gold as the best hedge against uncertainty**

Prior to the onset of the crisis, investors purchased gold to harness maximum benefits from portfolio diversification. The crisis triggered a comeback for gold, so much so that gold is now viewed as an alternative

monetary market, in addition to a reference point for inflation expectations. Above all, gold constitutes the best hedge against uncertainties. Moreover, the very fact that interest rates are very low signifies that the costs of holding gold in terms of forgone interest rates do not matter significantly, unleashing additional impetus to hold gold.

#### **(p) Vulnerable Capital Inflows**

The low interest rates in the advanced economies, combined with the earlier and stronger recovery in a number of emerging economies, help to drive significant capital inflows into emerging markets. However, a quick reversal can also manifest itself, as the developed economies require more funds to spur their own economic growth on the back of the crisis. Consequently, risks loom large on feasible reversal in capital inflows to emerging markets, which could increase their vulnerabilities to capital flows shocks.

## **2.3 Solutions**

#### **(a) System-wide risk analysis**

The best approach to regulation consists of both a system-wide risk analysis and institution-specific risk analysis, both of which complement each other. The chief benefit of system-wide analysis is that it fosters financial stability by explicitly accounting for interconnectedness among the distinct units of the financial system. The microscopic approach to regulation does not provide a true picture of the whole risk of the financial system as it fails to identify the interconnectedness (and hence extent of externalities) among units of the financial system. Nonetheless, microscopic analysis is crucial when it comes to assessing systemically important institutions. Technically speaking, network analysis can be applied as the appropriate tool to identify the extent of interconnectedness.

#### **(b) Leveraging risk management processes via improving data and models**

One of the vital avenues that can be employed to promulgate financial stability worldwide is to leverage the risk management processes. This can be accomplished via three main channels. First and foremost, it is of paramount significance to have timely, accurate and comprehensive data so that modelling processes trigger reliable results. Otherwise, this will simply take after the GIGO (Garbage In Garbage Out) system. Second, it is important that human efforts are confined solely to modelling issues and not to the collection of data, so as to minimise errors and distortions.