

Chapter 2

Genesis of the Global Financial Crisis

Abstract This chapter traces the genesis of the global financial crisis of 2008 as it started in the USA and later spread across the world. After the US dot-com bubble burst in 2001, the US Federal Reserve Board followed an easy money policy for boosting up aggregate demand. This policy was facilitated by a large increase in investment in the US Federal financial instruments by China, Japan, Germany and oil exporting countries. As the liquidity increased in the USA, the Fed Funds Rate and Real Interest Rate touched the levels close to zero. Simultaneously, complying with the US government policy of providing cheap housing finance to the poor, the banks reduced the margins for such housing loans to almost zero level. This encouraged borrowing for houses by the sub-prime borrowers. Demand for houses increased which resulted in rise in house prices. A bubble was created in the US housing market due to several reasons. Very low rates of interest increased the risk appetite of investors leading to the increase in speculative investment in real assets. Through time, securitization of assets became popular. As a result, instead of originate-to-hold model, originate-to-distribute model of housing loans was used by the lending banks. This along with other financial innovations made it possible for financial intermediaries to distribute risks and unload them on unsuspecting investors. Lax regulatory practices in general as also regulatory capture and flawed credit ratings given by rating agencies resulted in underestimation and underpricing of risk. Investment in risky and tainted assets multiplied. In 2006, following policy-induced increase in the Fed Funds Rate, house prices in the USA started falling leading to large-scale foreclosures of housing loans resulting in bank losses and a drastic fall in liquidity. This triggered the financial crisis. Given the negative externalities of the market failure in the financial sector and the linkages across markets and countries, the crisis became global.

Keywords Genesis • Global financial crisis • Dot-com bubble • Subprime borrowers • Originate-to-distribute model • Regulatory capture • Financial engineering • International macroeconomic balances • Glass–Steagall Act

2.1 Introduction

By now, a number of studies have been conducted on the global financial crisis of 2008. Greenspan (2010), Reinhart and Rogoff (2009), Stiglitz Commission Report (2010), Krugman (2009), Rajan (2010), Sheng (2010), RBI (2010) and Reddy (2010), to name some of them. In this chapter, we discuss some of the factors responsible for the origin and manifestation of the crisis. The hypothesis of financial instability earlier advanced by Minsky (1986, 2008) is discussed as a possible analytical framework for the crisis. The Bank of International Settlements (BIS) perspective on the crisis is also discussed. We explain briefly the role of financial engineering in generating financial products as a combination of securities whose actual risk level was not properly assessed. The “originate-to-distribute model” is taken up in some detail. It shows how the possibility of offloading the risks of lending banks to a sequence of investors was a big change in sharing of risks in comparison with “originate-to-hold model”. However as is pointed out in this chapter, serious lapses in regulation and failure of rating agencies in assessment of risks resulted in mispricing of risks which precipitated the crisis. The present study is focused on the theme—Indian economy through the global financial crisis. However, before we take up the impact of the crisis on India and India’s policy response in detail in the later chapters, a brief overview of the immediate impact of the crisis on the global economy is presented in this chapter towards the end.

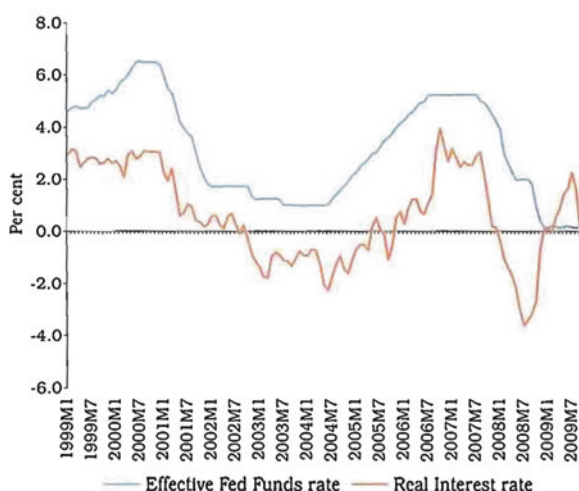
2.2 Origin and Manifestation of the Crisis

In the USA, prior the 2008 crisis, the period from mid-1980s to 2007 was marked by macroeconomic stability. Very mild recessions were experienced in the US economy during these years. High economic growth amidst macroeconomic stability in this period, also called “great moderation” is attributed to two major factors. First, as Mcconell and Perz-Quiros (2000) say that in this period, service sector has played a relatively larger role and there has been considerable improvement in inventory management. Second, as Romer (1999) says that high and stable economic growth in this period was largely due to the low inflation policies implemented by the US authorities.

2.2.1 *Easy Money Policy and Increase in Risk Appetite*

Along with this high and stable economic growth, certain important developments were taking place in the US economy. The easy money policy pursued in the USA, after the dot-com bubble burst in 2001, kept the Fed rates very low. Low interest rates on Fed financial assets prompted investors to look for higher yields else

Chart 2.1 US Real Interest Rate (*green*) and effective Fed Funds Rate (*blue*)



where. In Chart 2.1, given below, graphs of Effective Fed Funds Rate and Real Interest Rate very clearly illustrate the profile of the two important rates from January 1999 to July 2009 (Source: Reserve Bank of India 2010). Policy of low interest rates reduced the borrowing cum opportunity costs of investible funds. Low interest rates during a period of relatively high and stable economic growth during 2003–2006 made the market participants optimistic and increased the risk appetite of investors. This encouraged financing of “risky and unsafe” investments including the subprime housing loans.

2.2.2 International Macroeconomic Imbalances

Large inter-country macroeconomic imbalances in the form of current account deficits emerged in the post-Bretton Woods international monetary and financial system and persisted for longer periods. Some factors are said to be responsible for delayed adjustments in global balances (see Kishore et al. 2011). First, in the post-Bretton Woods era, the US dollar has emerged as the most preferred reserve currency for the central banks. For accumulating US dollar reserves, the central banks invest in safe, albeit low return financial instruments floated by the US Federal Reserve. As a result, the USA gets an option to finance costlessly, its current account deficit for an extended period without adjusting its exchange rate. Second, countries holding current account surpluses with the USA can opt to delay their upward exchange rate adjustment vis-a-vis the US dollar and reap the benefits in terms of higher net exports and larger capital inflows. China is an example in the current context.

For many years especially after 2006, the current account deficit of USA and some other developed economies such as UK and France kept on increasing vis-a-vis

Table 2.1 Macroeconomic imbalances (US\$ billion) 2006–2009

Country	2006	2007	2008	2009
China	253.3	371.8	426.1	283.8
France	−11.6	−25.9	−64.8	38.8
Germany	188.4	253.8	245.7	160.6
Japan	170.4	211	157.1	141.7
Malaysia	25.8	29.2	38.9	32
Russia	94.3	77	102.4	47.5
Saudi Arabia	99.1	93.5	132.5	20.5
UAE	36.2	19.5	22.2	−7
UK	−80.8	−75.5	−40.7	−28.8
USA	−803.5	−726.6	−706.1	−418
India	−9.3	−11.3	−26.6	−25.9

Note (−) indicates deficit

Source IMF, World Economic Outlook, database

China, Japan, Germany, oil exporting countries, and Russia. This is mirrored in large-scale investment of the current account surplus of these countries in the US financial instruments. The result was a sustained increase in liquidity and further fall in the interest rates in the USA, as is discussed in Sect. 2.2.1 above. Table 2.1 presents the data on international macroeconomic imbalances from 2006 to 2009.

2.2.3 Housing Finance for the Low-Income Households

A home provides shelter, identity and security in old age, and as such, owning a house is a primary need of a household. In a democracy, the politicians trying to capitalize on this urge of households—as potential voters—at times initiate policies for “dream housing” projects. Around 1997, US Congress supported by President Clinton legislated for two things; first, real estate capital gain tax was eliminated on primary home real estate held over two years. This was a big tax cut, and because of this, investment in real estate became a popular investment. Following this, real estate prices increased in an unprecedented manner for the following ten years. Also, around the same time, the Congress was persuaded to put pressure on mortgage companies to provide housing loans to the poor and to those who did not qualify earlier for such loans.

In the USA, under the Glass–Steagall Act of 1933, conventional banking was segregated from securities business and the bank management was forbidden to lend to businesses owned by them. The commercial banking network was thereby segregated from the network of investment banks. However, the Glass–Steagall Act was repealed in 1999 in the USA. The “universal banking” model was adopted in the USA and other countries. This was a development with far reaching consequences. As a result of this policy change, the firewalls between the investment banking network and commercial banking were removed and business of banking

attracted big money. Through time, banking became more concentrated with large banks cornering big chunks of banking business. Concentration of banking business made it possible for big banks to afford high salaries of the financial wizards with proficiency in using complicated theoretical models of derivative pricing, using state-of-the-art superfast computers. As risks were being undertaken on a wider scale, the number of hedge funds increased. Hedge funds began operating in markets for equity, debt, commodities, derivatives, foreign exchange and real estate. As a result, financial markets were getting interlocked on a larger scale, making contagion inevitable.

For quite some time, the US political class and policy makers have been showing their concern for providing affordable housing finance to households with modest incomes. For making mortgages available to such people, in 1938, Federal National Mortgage Association (FNMA) popularly called Fannie Mae was created as a government agency for securitizing house mortgages. In 1968, Fannie Mae was made a publicly traded company and Government National Mortgage Association GNMA, popularly called Ginnie Mae was established as a wholly owned government company. In 1970, Federal Home Loan Market Corporation (FHLMC), also called Freddie Mac, was created to give competition to Fannie Mae. In 1992, for promoting affordable houses for the poor, Office of Federal Housing Oversight was set up. Around the same time, the Congress was persuaded to put pressure on mortgage industry to provide loans to those who had been denied in the past, such as the poor and the blacks. In the year 2000, Federal Housing Department wanted the housing finance agencies to declare that 50 % of newly funded houses are affordable for the low-income households. Following this, among the Fannie Mae, Freddie Mac and Ginnie Mae corporations, the first two guaranteed their own mortgage-backed securities and the third guaranteed mortgage-backed securities issued by private firms. These institutions were run by politically appointed people from both the Republican Party and the Democratic Party and as such were feeding the mortgage industry with billions of dollars earmarked for loans to those who previously did not qualify for such loans.

By 2003, Freddie Mac and Fannie Mae admitted that their financial statements could not be relied upon because of unsound financial practices. As long as home prices were rising, these unsound practices did not bother most people. In fact, the mortgage firms managed to sell their mortgages to firms such as Bear Stearns and Lehman Brothers who were on the look out for higher profits from their portfolios. These companies borrowed heavily for purchasing the mortgages, and ratio of leverage of these companies increased up to 30:1. This went on till the bubble burst.

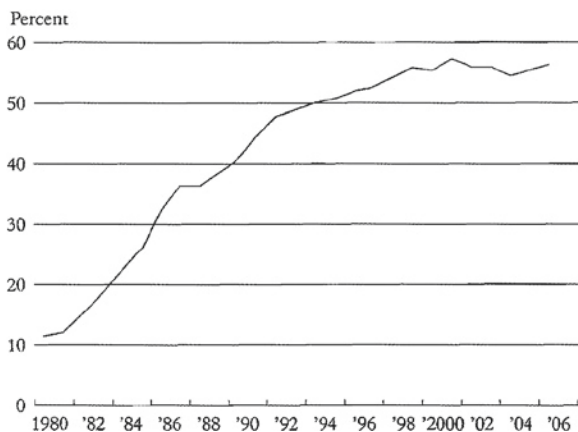
2.2.4 Securitisation—originate-to-distribute Model

The familiar model of relending the deposits by commercial banks is called “originate-to-hold” model. In this model, a loan advanced by a bank remains in its balance sheet till it is paid off. This is true of all kinds of loans including the housing loans

which last for long periods. This model has been gradually replaced by what is called “originate-to-distribute” model. Here, financial institutions with limited working capital originate mortgage loans and then securitize these loans in order to multiply the reach of their working capital. Home buyers go in for long-term mortgage loans, sometimes as long as for thirty years. The lenders securitize the mortgages and earn more money while using the same capital. The lender who originates the mortgage charges origination fee for it, sells the mortgages to another institution for cash and transfers the right of payments to it. This company that buys the mortgages resells them to another party with a much larger resource base, say a pension fund. After collecting a fairly large number of mortgages, the last intermediary creates another company called a mortgage trust or “special purpose vehicle”—a legal entity. This trust buys a pool of mortgages and simultaneously creates a bond or a security. These securities are sold to fixed-income investors, and in this way, “mortgage-backed securities” also called collateralized debt obligations (CDOs) are created which have the backing of several mortgages. The mortgages are then classified into senior and junior tranches depending on the underlying risks. The junior tranches which are more risky are compensated by higher yields to them, and senior tranches would be paid first in a situation of a fund crunch. In case of mortgages fully financed by banks, the motivation for the bank is to make sure that payments come in time. This is not true for mortgages where brokers are involved. In such cases, the originators and the brokers do not hold on to the mortgages. They are motivated to deal in bigger and riskier loans. In this way, the share of mortgage-backed securities magnified in a big way. This is shown in Chart 2.2 (see Rosen 2007).

Insurance on CDOs is done through credit default swaps (CDS). The client promises to pay the insurance agency or the guarantor a fixed fee in exchange for the guarantee that if a bond defaults, the guarantor shall redeem it. AIG and some other monoline insurers sold credit default swaps, and when a large number of securities experienced a fall in their value, the financial position of guarantors became precarious and the US authorities had to bailout AIG.

Chart 2.2 Share of mortgage securities in total US mortgage debt (%).
Source Rosen (2007)



Traditionally in the USA, before getting housing loans, borrowers had to pay margins of 20 % or more of the total loan and the lending bank would lend out 80 % of the sum. Later in compliance with the government's policy stance, US banks somewhat relaxed these practices in order to cater to lower income borrowers. This increased their lending volumes. Subsequently, loans were given equal to the entire value of the house with the result that now borrowers had no stake. This is what was called “wholesale lending” loans which were given to people without documented income, jobs and assets, later nicknamed as NINJA loans. Lending banks bundled several loans together through securitization, calling the bundle a mortgage-backed security. By the middle of 2007, the size of subprime household loans was as big as 1.4 trillion US dollars. Financial engineers of the Wall Street had packed these loans into complicated financial instruments called collateralized debt obligations (CDOs).

Some banks offered “Teaser Loans”. These loans initially carried low interest rates which were reset after sometime. Initial attraction of low interest rates attracted many low-income borrowers. When interest rates were raised, poor borrowers could not pay. Lending banks were unconcerned as they had sold their loans through securitization.

In this way, US home lending and home prices shot up. As long as the economy and housing market were going good, borrowers paid instalments regularly. Eventually, housing prices peaked and then declined as shown in Chart 2.3 (Source, Shiller 2007).

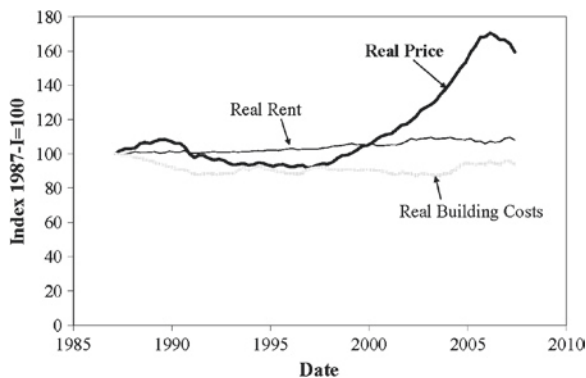


Chart 2.3 Behaviour of house prices. *Notes* Real US home prices, real owners' equivalent rent and real building costs, quarterly 1987-I to 2007-II. *Source* Shiller (2007) [attachment to this testimony]. Real US home price is the S&P/Case-Shiller US National Home Price Index deflated by the Consumer Price Index (CPI-U) for the first month of the quarter rescaled to 1987-I = 100. Real owners' equivalent rent is the US Bureau of Labor Statistics Owners Equivalent Rent december 1982 = 100 from the CPI-U divided by the CPI-U, all items, 1982-4 = 100, both for the first month of the quarter, rescaled to 1987-I = 100. Real building cost is the McGraw-Hill Construction/Engineering News Record Building Cost Index for the first month of the quarter (except for the years 1987, 1988 and 1989 where the index is only annual) deflated by the CPI-U for that month

As house prices declined, US banks were facing borrowers who could not pay back their loans because of lack of income. Further, borrowers had not paid any margin money against their housing loans. Loans were secured only by the mortgage property, and the borrowers were free of any obligation, if they returned the property. When house prices declined, such borrowers would not pay loan instalments for houses which were now worth less than the contracted loan amount. When such defaults increased, the value of mortgage-backed securities declined in a big way. Losses were inflicted on the holders of mortgage-backed securities and investment banks including the big financial giants such as Citibank and Bank of America.

2.2.5 Role of Financial Engineering

The US financial sector is historically very vast and deep. In the USA and other developed economies, financial engineering created financial derivatives and repackaged financial products whose risk levels were difficult to ascertain. Such financial instruments were intermediated through global financial giants such as Citibank and were subsequently easily offloaded on other unsuspecting agents, largely because of the “too big to fail” theory, which is of course discredited now.

The IMF estimated (see Sheng 2010) that as of 2007, total value of global financial assets comprising of (a) banking assets, (b) stock market capitalization and (c) bond market value amounted to 230 trillion US dollar, four times the global GDP, at 55 trillion US dollar. By contrast, the total “notional” value of global derivatives amounted to 596 trillion US dollar roughly 11 times the world GDP and 2.6 times of underlying financial assets.

Roche (2007) estimated that financial derivative products constituted 1012 % of global GDP and 80 % of liquidity; debt and asset-backed securities formed 129 % of global GDP and 10 % of world liquidity; broad money was 115 % of global GDP and 9 % of world liquidity; and high-powered money was 8 % of world GDP and only 1 % of world liquidity.

2.2.6 Problems in Assessment and Pricing of Risk

Can the risk levels of newly engineered financial products be measured and priced accurately by using the well-known Markowitz models used in the literature? Professor Persaud (2007) rightly comments that Value at Risk (VaR) models, used in the literature for measuring and controlling risk, make the simplifying assumption that when an investor is buying or selling in the market, he is the only one doing so. In reality, when every market participant has more or less the same information and/or the same model, an investor shall be selling with the herd and buying with the herd. Such a behaviour will not diversify risk but will concentrate it. Given this herd behaviour, when an investor, confronted with price volatility, plans to sell a security

to cut his losses, others do the same. This results in a deeper cut in security prices. The VaR approach therefore fails in assessing the risk and pricing it correctly. With financial innovations, financial instruments turn to be more complicated. As Sheng (2010) has noted that value of complex financial instruments with “embedded leverage” can change very rapidly within days or even hours. This makes assessment and pricing of risk of derivative products all the more difficult.

2.2.7 Governance Failure and/or Market Failure

The IMF (2009) attributes the global crisis primarily to the failure in governance, to the extent the central banks focused on control of Consumer Price Index (CPI) inflation and lost sight of systemic financial stability. At the board level of corporate governance, internal audit and controls failed to check the risky and tainted portfolios. External auditors and other consultants also seemed to have failed in discharging their duties. The rating agencies which are normally expected to use their rating scales for correct assessment of risks also failed miserably.

The ideology that unfettered markets are self-equilibrating was given a free run in the USA. Loose monetary policy and market led growth between August 2003 and December 2007 created 8.25 million jobs in the USA and overall prosperity in other countries (see Sheng 2010). This created an euphoria about market efficiency and resulted in general complacency in regulatory policymaking and its enforcement. Economists like Krugman (2009) attribute the crisis to failure of free market philosophy in which the world capitalist structure is rooted. Stiglitz Commission (2010) in its report observed that the governments were deluded by market fundamentalism and forgot lessons of economic theory and historical experience that financial markets need to be effectively regulated. The Commission further observed that the case for financial deregulation has been pushed too much and this sector has become the main driver of economic activity. Stiglitz (2012) pointed out that the root cause of the financial crisis of 2007 in the USA was increasing income inequality and weak effective demand. Interventions by the Federal Reserve Board create demand bubbles which inevitably burst and create instability. Taking a closer look at the 2007 crisis, Rajan (2010) also points out that increasing income inequality, resulting in weak effective demand, is a deep-rooted fault in the free market economy of the USA.

2.2.8 Laxity in Supervision and Regulation of Financial Institutions

An important reason for the global financial crisis has been a number of weaknesses in the supervisory and regulatory structure for financial institutions. Lax supervisory oversight and relaxations in standards of prudential regulation have been cited widely.

The IMF surveillance has come in for serious criticism. Article IV Report of the IMF on Surveillance of the USA, dated 11 July 2007 said “Core commercial and investment banks are in a sound financial position and systemic risk appears low” (Report, page, 14). This type of surveillance report was filed by the supervisors of the IMF in spite of the fact that the severity of the subprime housing loan crisis in the USA was very much in the public domain. The report also turned a blind eye to the systemic risks associated with huge current account imbalances across countries and gave a clean chit on that account as well.

Regulators could not recognize systemic risks and due to lack of skills at their end could not measure risks of complex financial products in circulation. For quite some time, off balance sheet activities of banks and operations of nonbanks or the so-called shadow banks have remained outside the purview of regulators. Over time, financial institutions have been pushing the accounts of some of their activities outside the regulatory boundaries and escaping from compliance of capital adequacy requirements. This increased their exposure to risk.

2.2.9 Regulatory Capture

Regulatory capture means the regulated exercising undue influence on the regulators. In the years immediately preceding the crisis, in advanced economies and in important financial centres, rate of growth of the financial markets was disproportionately higher than that of the real sector. The financial sector had grown faster in size, wealth and its influence over the media, relative to the nonfinancial sector. Benefits of deregulation of the financial sector were advocated frequently in the media. There is a view expressed by several responsible high-profile scholars (see Reddy 2010; Sheng 2010) that the central banks and other financial regulators in many advanced economies facilitated excess supply of financial services with high leverage. Also, there is the widespread practice of former financial regulators being hired by financial firms for lobbying with the current regulators in seeking relaxations.

One may here raise the question of independence of central bank governors as regulators vis-a-vis the government. Alan Greenspan, while testifying before a House Panel, admitted that in his long innings as the Chairman of Federal Reserve, he was often following “will of the Congress” and did “what I am supposed to do, not what I would like to” (see Scannell and Reddy 2008).

2.2.10 Financial Instability Hypothesis

Minsky (1986, 2008) advanced the view of financial instability as a cause of overall economic crisis in his book. The crux of the Minsky’s theory is that speculative investment bubbles are endogenous to financial markets. In an upswing, corporate cash flow increases beyond what is needed to pay off debt, generating speculative

euphoria. Soon debt exceeds what borrowers can pay off from current incoming revenue which results in financial crisis. As a result of such bubbles, banks and lenders tighten credit supply and the economy contracts. This slow movement of the financial system from stability to fragility is followed by the economic crisis. Minsky calls it Financial Instability Hypothesis.

The key mechanism that pushes an economy into a crisis is accumulation of debt by three types of borrowers in the private sector. These are “hedge borrowers”, “speculative borrowers” and “ponzi borrowers”. In the Minsky model of the financial system, hedge borrowers earn enough from their investments and pay back the loan and the interest. For a speculative borrower, cash flow from investment can service the debt, but the speculative borrower must reborrow the principal. Ponzi borrower borrows on the belief that appreciation of the value of the asset must be enough to refinance the debt, but such a borrower cannot pay back principal amount and the interest. Only appreciation of asset values keeps such borrowers afloat. When asset prices stop rising, speculative borrower can no longer refinance his principal even if interest can be paid back. As with a line of dominoes, collapse of speculative borrowers can bring down the hedge borrowers who are unable to find credit though they have made “apparently” sound investments.

It is abundantly clear that there have been definite Minsky elements in the initial subprime lending crisis and also in the subsequent scarcity of overall liquidity.

2.2.11 The Financial Cycle Hypothesis—A BIS Perspective

Borio (2012) points out that “a financial system just does not allocate but also generates purchasing power”. Through the global financial markets and input and output markets, the global economy is highly integrated. Borio defines a financial cycle as “self reinforcing interactions between perceptions of value and risk, attitudes towards risk and financing constraints which translate into booms followed by busts”. Borio says that financial liberalization weakens financing constraints and it supports the self reinforcing interplay between perceptions of value and risk, risk attitudes and funding conditions.

This typical BIS view clearly points towards financial liberalization resulting in easy availability of finance as the root cause of excessive risk-taking leading to a boom and ending in the inevitable bust. Post facto it can be argued that excessive risk exposure of financial institutions was one of the important reasons behind the crisis.

It is observed that financial institutions tend to over-expand their lending during an upswing and tend to retrench it in the downturn. When financial institutions lower their standards of accounting and regulation during the upswing and go in for excessive risk-taking, the result is deterioration in asset quality. Rajan (2005) calls it “herd behaviour”. Guttentag and Herring (1986) call it “disaster myopia” or shortsightedness in clearly seeing through the loss in high-return high-risk investments. In fact, in the 2008 global crisis, if accounting standards and regulatory mechanisms were strict, the rot could have been stemmed at the very outset.

2.3 Global Impact of the Financial Crisis—A Synoptic View

The impact of the global financial crisis was transmitted very fast across countries. The first tremors were experienced through stock markets (for details see Chap. 7 below). Portfolio capital inflows were reversed in a number of EMEs such as Brazil, Russia, India, South Africa and also Japan (see Table 2.2). Financial institutions were in the dark about the proportion of tainted assets in each others' portfolios and their exposure to risk. This created scarcity of liquidity in national and international capital markets. Demand for merchandise exports decelerated (see Table 2.3). With fall in export demand, rates of growth of GDP came down and turned negative in many countries including the advanced economies (see Table 2.4). The adverse impact of the crisis on aggregate demand in advanced economies was comprehensive. The data in Table (2.5) show that gross fixed investment in USA, UK, Euro area and Japan turned negative in 2008 and 2009.

Table 2.2 Portfolio Investment during the crisis (US\$ billion)

Country	Inflows			Outflows		
	2007	2008	2009	2007	2008	2009
Brazil	48.1	−0.8	46.2	−0.3	−1.9	−3.0
Russia	16.0	−27.4	8.2	10.0	7.8	10.9
India	35.0	−15.0	Na	−0.2	0.0	Na
South Africa	13.7	−7.6	13.4	3.4	6.7	1.9
France	114.5	242.6	417.2	282.1	126.8	92.4
Germany	401.2	25.0	−26.0	199.9	−23.1	101.6
Japan	196.6	−103.0	−56.3	123.5	189.6	160.2
UK	406.7	363.9	284.0	179.6	−199.6	241.1
USA	1154.7	527.7	376.6	396.0	−117.4	549.4
China	21.0	9.9	Na	2.3	−32.7	Na

Source IMF, International Financial Statistics, June 2010. “na” is not available

Table 2.3 Impact of crisis on export demand in selected Asian economies (Merchandise export growth as % of GDP)

Country	2007	2008	2009
China	25.8	17.6	−16.1
Hong Kong	8.9	5.6	−11.9
India	28.9	13.7	−15.0
Indonesia	14.0	18.3	−14.4
Korea	14.2	14.2	−13.7
Malaysia	9.6	13.1	−21.1
Philippines	6.4	−2.5	−22.3
Singapore	10.1	13.0	−20.3
Thailand	18.2	15.9	−13.9

Source Asian Development Bank, Asian Development Outlook, various issues

Table 2.4 Rates of economic growth during the crisis

Country	2007	2008	2009
USA	2.1	0.0	−0.6
Germany	2.5	1.2	−4.9
France	2.3	0.1	−2.5
Italy	1.6	−1.3	−5.0
Spain	3.6	0.9	−3.6
Japan	2.3	−1.2	−5.2
UK	2.6	0.1	−4.9
Canada	2.5	0.5	−2.5
Sub-Saharan Africa	7.0	5.5	2.3
Central and eastern Europe	5.5	3.1	−3.6
Russia	8.1	5.6	−7.9
China	13.1	9.6	9.1
India	9.4	6.4	5.7
Brazil	5.7	5.1	−0.2
Mexico	3.3	1.5	−6.5
ASEAN 5	6.3	4.7	1.7
European Union	3.1	0.8	−2.1

Source IMF, World Economic Outlook, various issues

Table 2.5 Impact of the crisis on aggregate demand in advanced economies (annual % change)

Country	Private consumption			Public consumption			Gross fixed investment		
	2007	2008	2009	2007	2008	2009	2007	2008	2009
USA	2.7	−0.2	−0.6	1.4	3.0	1.8	−1.2	−3.6	−14.5
UK	2.1	0.9	−3.2	1.2	2.6	2.2	7.8	−3.5	−14.9
Euro Area	1.6	0.4	−1.1	2.3	2.1	2.2	4.8	−0.4	−11.1
Japan	1.6	−0.7	−1.0	1.5	0.3	1.6	−1.2	−2.6	−14.3

Source IMF, World Economic Outlook, April 2010

Rates of growth of private consumption in USA, UK, Euro area and Japan turned negative in 2009. In these countries, only public sector consumption increased during 2007 through 2009 because of fiscal stimuli administered in these economies.

2.4 Concluding Remarks

This chapter explains the origin and manifestation of the global financial crisis. Following the dot-com bubble burst in 2001, the US Fed followed a policy of easy money in order to boost aggregate demand. Current account deficit of the

USA increased, financed as it was by investment of current account surpluses of other countries in US financial instruments. Complying with the US government policy of providing cheap housing finance to the poor, banks reduced the margins to almost zero level for housing loans. Demand for houses increased, resulting in rise in house prices. This encouraged large-scale borrowing for housing in the subprime category. Evolution of originate-to-distribute model of long-term lending made it possible to spread the risks and unload these on unsuspecting investors. On top of this, the regulatory failures and flawed credit ratings handed down by the rating agencies, resulted in underestimation and underpricing of risk. Speculative investment in assets increased, creating bubbles in the real estate market. Remaining too busy with controlling CPI inflation, central banks as regulators, ignored the abnormal asset price behaviour. In 2006, following increase in Fed Funds Rate, house prices declined in the USA. This triggered the crisis. Foreclosures of loans and bank losses became rampant. Given the externalities in the financial sector, the crisis became contagious. Due to the global linkages, transmission of the crisis across countries was fast and soon all the countries were engulfed in the crisis.

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