Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

UNDERSTANDING THE FINANCIAL CRISIS, POST CRISIS POLICY IMPLICATIONS AND ANALYSIS OF PUBLIC COMMENTS

Master Thesis for the degree of Master of Science
in Management, Technology and Economics (MTEC)

by

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Submitted to ETH Zurich
April 2011

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Declaration

I hereby declare that this thesis was performed and written on my own and that references and resources used within this work have been explicitly indicated.

I am aware that making a false declaration may have serious consequences.

Zurich, April 2011 --

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Abstract

This master thesis understands the global financial crisis that occurred in 2007-2008. It goes ahead to understand the global financial system that existed before the crisis. It uses the concepts of 'financial innovation', 'current account imbalances', 'shadow banking structure' and 'mortgage equity withdrawal' to find the roots of the crisis. In order to identify the causes of financial crisis, thesis looks into the functioning of hedge funds, securitized products and economic policy. It argues that innovations were results on the economic policy that existed before the financial crisis. This work analyses and differentiates the regulatory changes in the US and the EU that have come up to avoid a financial crisis in the future. Impact assessment of these regulations has also been done. The thesis discusses if these regulations tackle the current situation appropriately and in the end estimates the future global financial system that might come up after the regulations.

Keywords: Global Financial Crisis, Securitization, Dodd Frank Act, Basel Accords

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Acknowledgements

This master thesis has been supervised by Professor Dr. Didier Sornette at the Chair of Entrepreneurial Risks at the Swiss Federal Institute of Technology (Department of Management, Technology and Economics).

I thank Professor Sornette for giving me a chance to work under his guidance. He was always open to my views and provided motivation to perform best to my abilities. He took time from his busy schedule and arranged meetings with me whenever required. The meetings were highly useful as he discussed topics from all the aspects of the financial crisis. His vast experience and his blogs helped to gain useful insight into the topic of financial crisis. He constantly poured in with suggestions by providing me useful links and references on various topics on financial crisis.

A special thanks goes to Ms. Ulrike Diethelm, my line manager at UBS AG who helped me choose the correct path for my thesis work. Also she helped me gain access to Swiss Banking Asscociation Conference on 'Impact of US reforms on Swiss Banks', which provided me a head start to the thesis work.

I especially wish to thank Mr. John Savercool and Mr. Dick Ribbentrop from UBS government affairs office in Washington who provided me with useful links to start my work on US regulations.

Finally, I would like to express my gratitude to my family and friends who supported and encouraged me during my work. A special thanks to Mr. Sandeep Dabur and Mr. Kapil Barve for proof reading my thesis and advising on the general structure of the thesis.

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List of Abbreviations

ABCP	Asset Backed Security Paper
ABS	Asset Backed Security
BHC	Bank Holding Company
CDO	Collaterlaized Debt Obligations
CDS	Credit Default Swaps
CP	Commercial Paper
DTA	Deferred Tax Assets
GSE	Government Sponsered Enterprises
HNIs	High Net Worth Individuals
LPFC	Limited Purpose Finance Corporation
MFI	Monetary Financial Institutions
MMMF	Money Market Mutual Funds
MTN	Mult-term notes
NAV	Net Asset Value
OFI	Other Financial Intermediaries
SIFIs	Systemically Important Financial Institutions
SIV	Special Investment Vehicle
TRS	Total Return Swap
UCITS	Undertakings for Collective Investment in Transferable Securities

1 Introduction

1.1 Importance of the issue

Global Financial Crisis of 2007-2008 has been the worst since the Great Depression in the 1930s.The financial crisis has had a profound effect, much more than that anticipated by many. The national borders have been breached and the ramifications are still being felt far from the epicentre. Although the global economy is recovering, the confidence in the markets is still weak as market participants are looking for a direction which is by no means straight forward.

Mr. Jean Claude Trichet (President of the European Central Bank) opines that "financial crises share some *commonalities*. In particular, crises are associated with the emergence of euphoria and complacency in financial markets, typically supported by rapid credit growth and a growing belief that new concepts like financial innovation or technological advances have rendered old limits on economic performance obsolete." [1]

At the same time Trichet [1] acknowledges the fact that each crisis is also unique. Every crisis has its own characteristics, which make it different from the previous ones. In order to avoid the next crisis it is essential to understand the causes and mechanisms behind the current crisis. Every crisis takes its own course in the financial system and affects specific sectors more than others.

As is the common perception, government regulations follow the crisis. Regulatory bodies analyse the events specific to the crisis and try to bring down formal regulations which would avoid a similar crisis in the future. After witnessing trillions of dollars of losses, high unemployment rates and company bankruptcies, national governments are pressurised and are expected to take immediate and concrete actions that restore the market confidence. But often, regulatory bodies come out with regulations which are not the optimal solution. These regulations can be more than required or sometimes, under political pressure emphasise on matters that are not the actual causes of the debacle.

The aim of this thesis is to understand the financial crisis, its causes and the regulatory policies that have come up to avoid a next financial crisis. There has been lot of discussion on the miscreants that spawned the crisis. This thesis also tries to identify the 'Achilles Heel' of the financial crisis of 2007-2008.

In order to have more checks on the identified devils of the financial crisis, new regulations have been proposed or introduced in almost all the countries. This thesis tries to understand the new regulations that have come up in the US and the European Union. Also, it tries to identify the similarities and differences in the approaches of regulatory bodies in the two regions. Assessment and impact of these regulations is also discussed. Every regulatory body invites public comments to consult the new regulations. These comments help us to identify the sentiments and views of different market participants. Analysis of these comments is also presented.

1.2 Methodology

This thesis uses a lot of information available from various books on financial crisis, conferences and panel discussions, blogs and newspaper articles, websites of central banks and various regulatory bodies.

To start with, the definition of the crisis helps us to have a literal understanding of the term 'financial crisis.'

In order to understand the causes of the crisis we need to understand the past events that moulded the current crisis. They include the financial landscape existing before the crisis, working of the global financial system and the shadow banking system. The thesis looks at the evolution of the financial system in the past two decades and links it to the development of the current financial crisis. Literature review of the financial systems of various countries along with understanding of general economic cycles was done.

The concept of 'shadow banking system' and 'mortgage equity withdrawal' has been explained as it is necessary to understand the economics at the ground level. Also the current account balances gives important insights into the global macroeconomics before the crisis.

With the help of the above analysis, identification of 'Achilles Heel' of the crisis was easier. The thesis identifies some of the factors that have been perceived by many as the root cause of the financial debacle of 2007-2008. The thesis looks into these factors one by one and tries to find if the general perception of these factors makes sense financially. Role of hedge funds, economic policy of the US and securitization in the economy and in the financial crisis has been discussed.

As is the social norm, after every crisis, regulatory bodies get more weight and have to withstand political and social pressure to draft policies that improve the financial system. The thesis then looks into the regulations that have come up which affect the instruments or financial institutions identified as factors leading to financial crisis. With the help of proposals or introduced regulations displayed on the websites of central banks (like ECB and Federal Reserve Bank), new regulatory councils, the thesis goes ahead with analysis and comparisons.

During the analysis, public comments received on the regulatory proposals are incorporated. This helps to understand the views of the industry, thereby aiding in impact assessment of the regulations.

Using the characteristics of the factors identified and resulting regulations, author checks the effectiveness of the regulations in improving the current financial system. Also comments and recommendations are made on the shortcomings and long term viability of the regulatory changes.

The following figure shows the path taken during the course of the thesis.

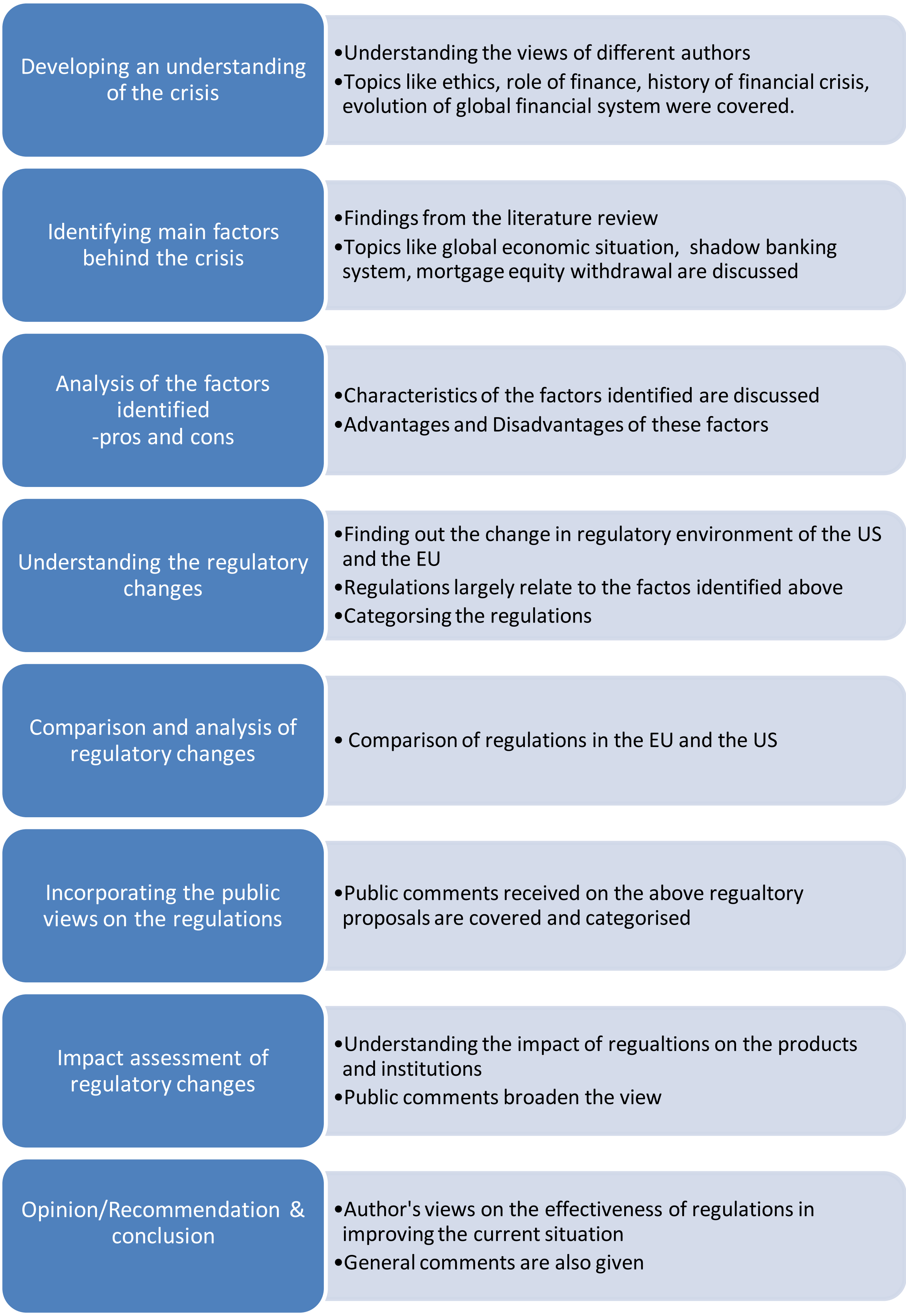

Figure 1 Methodology of the thesis

2 Understanding the Financial Crisis

An interesting view by Professor Sornette can help to have a holistic view of the any financial crisis. This view shows that understanding of the human psychic can help us appreciate the developments that spawned the financial crisis.

Professor Sornette [4]opines that the core problem behind the financial crisis is our belief that active investments provided by pension funds, banks, mutual funds, hedge-funds and all the financial industry have the potential to out-perform the GDP. According to him, believing that financial investment can give more than the growth of the global portfolio is a gross illusion. As long as the future retirees, hope for more return, we will provide the manure for the development of the species of parasites, called the banking and financial industry, that feed on our illusion and never ending hopes of easy gains.

2.1 Definition of financial crisis

Financial Crisis: A situation in which the value of financial institutions or assets drops rapidly. A financial crisis is often associated with a panic or a run on the banks, in which investors sell off assets or withdraw money from savings accounts with the expectation that the value of those assets will drop if they remain at a financial institution. [2]

A financial crisis can come as a result of institutions or assets being overvalued, and can be exacerbated by investor behaviour. A rapid string of sell offs can further result in lower asset prices or more savings withdrawals. If left unchecked, the crisis can cause the economy to go into a recession or depression. [2]

2.2 Unfolding of financial crisis 2007

The bubble in US was financed by 3 factors [3]:

1 Financial liberalisation(since 1975)

Financial deregulation involved free capital mobility on the premise that (i) financial sector provides real services (ii) Financial instruments, markets & institutions arise to ameliorate market frictions.

This unleashed massive demand for credit by households or firms that was not offset by a comparable increase in savings rate. As a result loan rates increased and banks increased deposit and lending rate. Foreign savings (ie external debt) rose which made liberalised economies more vulnerable to international economy. Now international markets had taken the place of domestic markets. The territorial distance between US and other parts of the world was no more conspicuous. Domestic market was displaced by international market. Short term speculation activities flourished and long term productive investment never materialised

2 Financial Innovation (3 C's- Collateral, Credit & Character)

After the repeal of US 1933 Glass-Seagall Act in 1999, commercial and investment banking combined. The introduction of securitization separated the loan origination from loan portfolio by selling mortgage or other loans to an underwriter or act as underwriter to sell to public exotic mortgages backed by low quality securities. All this developed into a '**Shadow Banking System**' outside the regulatory umbrella. Banks set up `Structured Investment Vehicles´ that required smaller capital base.

3 Easy monetary policies (quantitative easing)

Lax monetary policy of the US government can be reflected in the continuous drop in the federal funds rate. In January 2001, as the economy weakened rapidly following the collapse of the dotcom bubble, the Fed started to loosen monetary policy. The Federal Open Market Committee (FOMC) reduced the Federal Funds rate from 6.25 percent to 1.75 percent by the end of the year.

Policy rates kept going down in 2002 and 2003, although at a markedly slower rate, reaching 1 percent on June 25, 2003. This pumped more credit into the market which drove up the asset prices (especially real estate prices). Teaser loans allowed people to refinance their loans that were packaged into derivatives to be sold to the Wall Street.

According to Sornette and Woodard the global financial crisis unfolded itself in five bubbles that led one to another [4]:

1. New economy – internet, communications and technology bubble
2. Housing bubble: liquidity-to-real-estate bubble resulting from US Federal Reserve monetary policy
3. Innovation in creating new financial instruments. Credit derivatives (CDOs and CDS) were responsible for transferring risk, fuelling the real estate market bubble
4. Bubbles in commodities such as oil, corn, wheat, gold
5. Stock market bubble

3 The Financial Landscape before the crisis

3.1 Evolution of the financial system

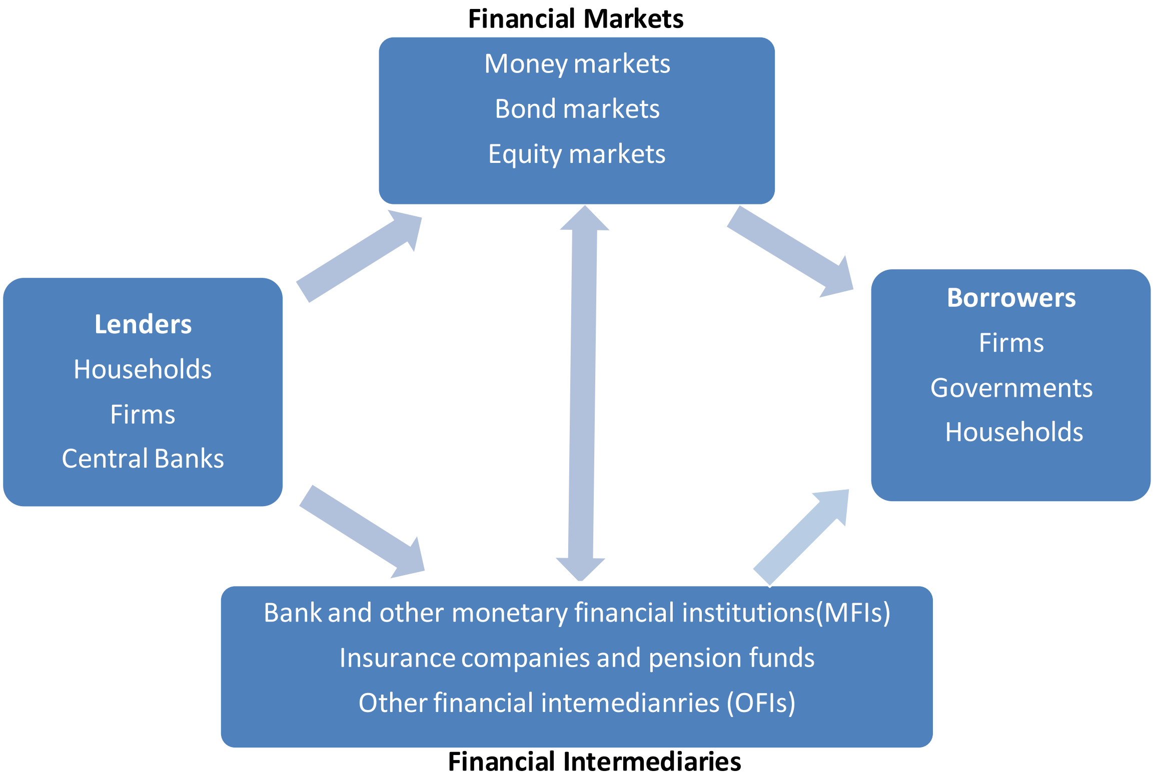

Figure 2: An overview of the financial system

Lenders of funds are primarily households and firms. In case of Asia, Central Banks are also important lenders. These lenders can supply funds to borrowers (mainly firms and households) through (i) financial markets (bond markets, equity markets or money markets) or (ii) financial intermediaries, which are credit institutions such as banks, money market funds, insurance companies or pension funds.[5]

The most relevant way of categorizing financial structures is bank based versus market based. Historical trends show that traditionally Japan and EU have been bank based systems while the US and the UK have been market based systems. Allen, Chui and Maddaloni [5] did a comprehensive study of the financial systems and compared them both on spatial and temporal dimensions. They show the growing role of institutional investors and financial intermediaries (as they hold more assets). Important observation made is that total size of OFIs' portfolios is relatively small in euro area as compared to the UK and the USA. This is due the fact that in euro area majority of OFIs are investment funds while in the UK securities and derivatives dealers make up the largest share of the sector, who typically have large deposits and loan portfolios. In the US, OFIs are made of mutual funds and other finance companies engaged in lending activity (like mortgages and consumer credit).

Another interesting observation made is that Central Banks in Asia have become major institutional investors. They have built large foreign exchange reserves, major part of which is in US Treasury securities. The primary reason of this behaviour is to have favourable balance of payments by under valuing the currency.

The change in the structure of European financial system can be attributed to the liberalization of international capital movements in order to create a common regulatory framework for the provision of financial services as part of the European Internal Market [6]. Zingales and Rajan [7] analyzed European financial system characteristics over the last two decades. Based on their findings they came to the conclusion that in the last two decades the EU-25 financial system moved away from a bank based towards a market based financial system. They identified the process of monetary and financial integration as the underlying cause of these changes.

Allen, Bartiloro and Kowalewski [6]analysed data from IMF, ECB and national sources and found that bank assets in old member states (OMS) of EU reached 219 percent of GDP in 2004, an increase of 17 percent from 1995. Also worth noting in their findings is the fact that average number of credit institutions fell from 504 in 1997 to 334 in 2004, a decrease of 34 per cent compared with 1997. The decrease was mainly caused by a high level of mergers and acquisitions within the EU. The large number of M&A transactions signalled convergence and integration of bank market structures of the EU-25. Owing to favourable tax treatment the assets under management by investment and pensions funds were comparable in some countries to those of the banking industry. The growth of investment and pensions funds was encouraged also by credit institutions and insurance companies as asset management makes up an important share of their non-interest income.

Also investment and pension funds became powerful players in the financial services industry as a result of changes in saving patterns caused by demographic changes and decreasing yields on bank deposits and other traditional financial instruments.

3.1.1 Concept of 'Mortgage Equity Withdrawal'

Financial wealth and portfolio allocation is just one component of household income. Supporting housing as another component Maclennan, Muellbauer and Stephens [8] have stressed that housing and mortgage markets have a very important role in efficiency, stability and monetary transmission process. Housing involves a considerable cost component of households. Housing prices are quite volatile and change in housing wealth affects the rest of the economy.

As can be seen in the Figure 2, housing prices in both the US and EU rose considerably in the last decade before the crisis, exceptions being Germany and Switzerland. With financial liberalization came the time of low and teaser interest rates. As a result of growth in credit, house prices rose faster than disposable incomes. Liberalisation in mortgage markets increased the sensitivity of housing prices to interest rates.

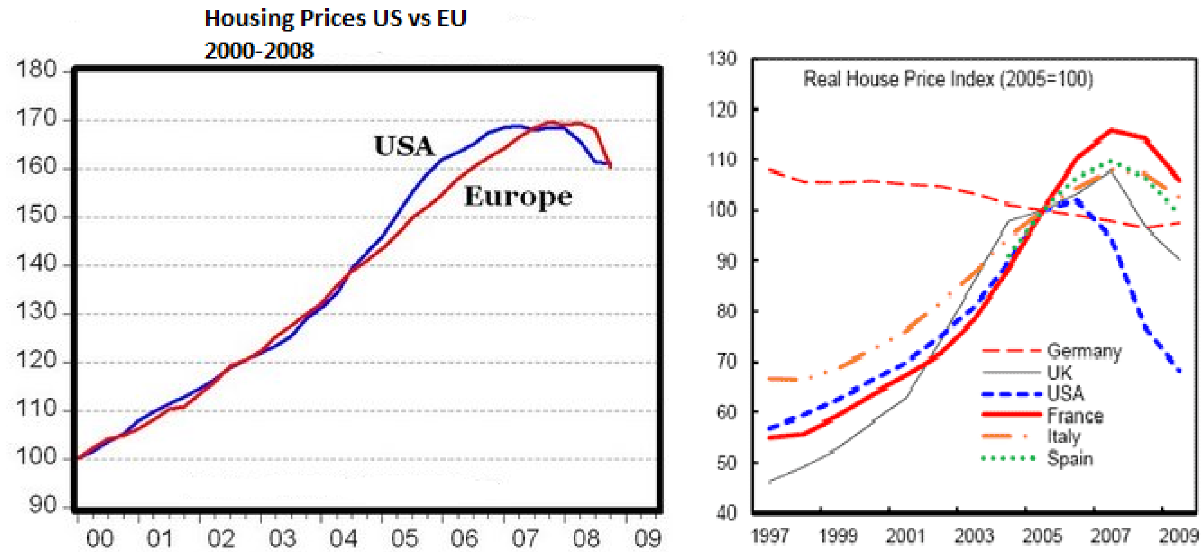

Figure 3 Growth in Housing Prices
Source: Telegraph.co.uk [9, 10]

High loan-to-value (LTV) ratios allowed borrowers to take more debts and thus required longer payment terms to keep debt-service-to-income ratios affordable. Rising housing prices allowed owners to refinance their existing mortgages or borrow more for personal use keeping house as collateral. This phenomenon called as 'mortgage equity withdrawal' was more common in the US and the UK.

3.2 Macroeconomics of the Global Economy: Current Account Imbalances

3.2.1 What is Current Account?

In the current account, goods, services, income and current transfers are recorded. The following variables go into the calculation of the current account balance (CAB)[11]:

X = Exports of goods and services
M = Imports of goods and services
NY = Net income abroad
NCT = Net current transfers

The formula is:

$$CAB = X - M + NY + NCT$$

The balance of the current account tells us if a country has a deficit or a surplus. A surplus is indicative of an economy that is a net creditor to the rest of the world. It shows how much a country is saving as opposed to investing. This means that the country is providing an abundance of resources to other economies, and is owed money in return. By providing these resources abroad, a country with a CAB surplus gives other economies the chance to increase their productivity while running a deficit. This is referred to as 'financing a deficit'.

A deficit reflects an economy that is a net debtor to the rest of the world. It is investing more than it is saving and is using resources from other economies to meet its domestic consumption and investment requirements. A current account deficit is usually accompanied by depletion in foreign-exchange assets because those reserves would be used for investment abroad. The deficit could also signify increased foreign investment in the local market, in which case the local economy is liable to pay the foreign economy investment income in the future.

3.2.2 Explaining current account (im)balances across the globe

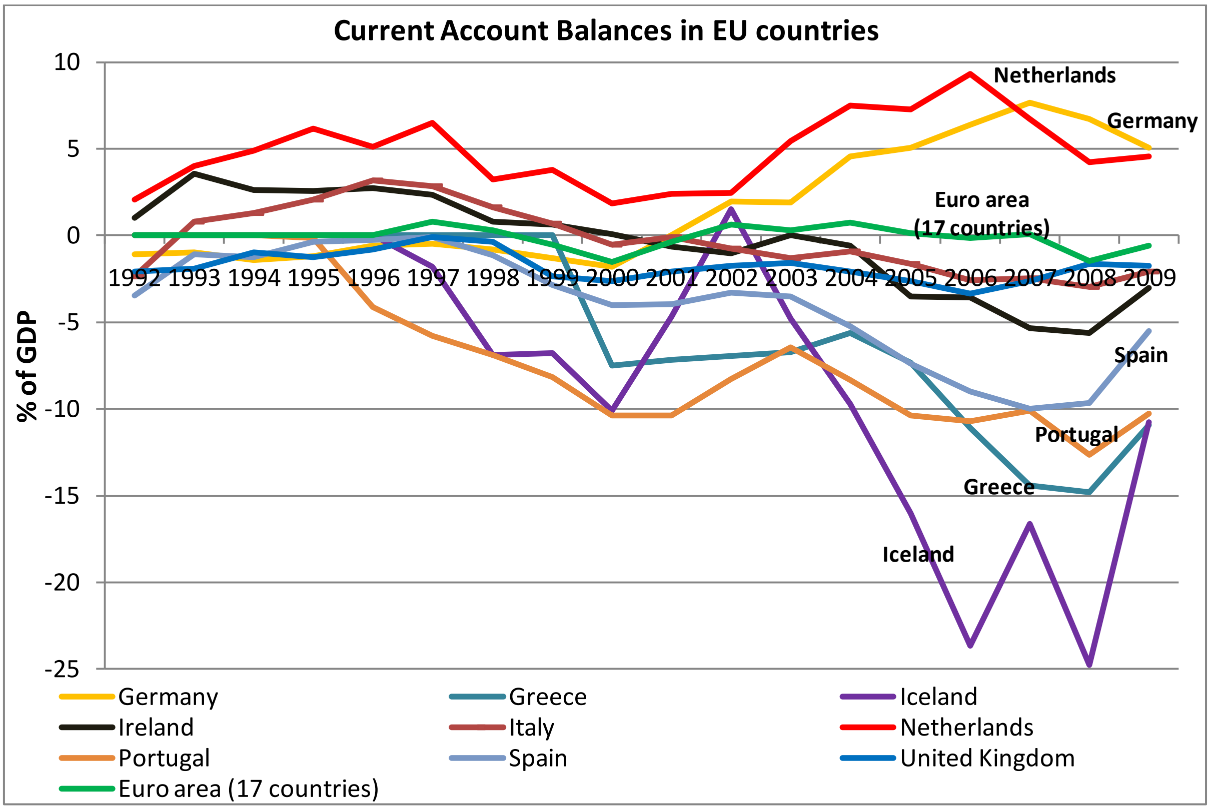

Figure 4 Current Account Balances in EU countries
Source: www.stats.oecd.org

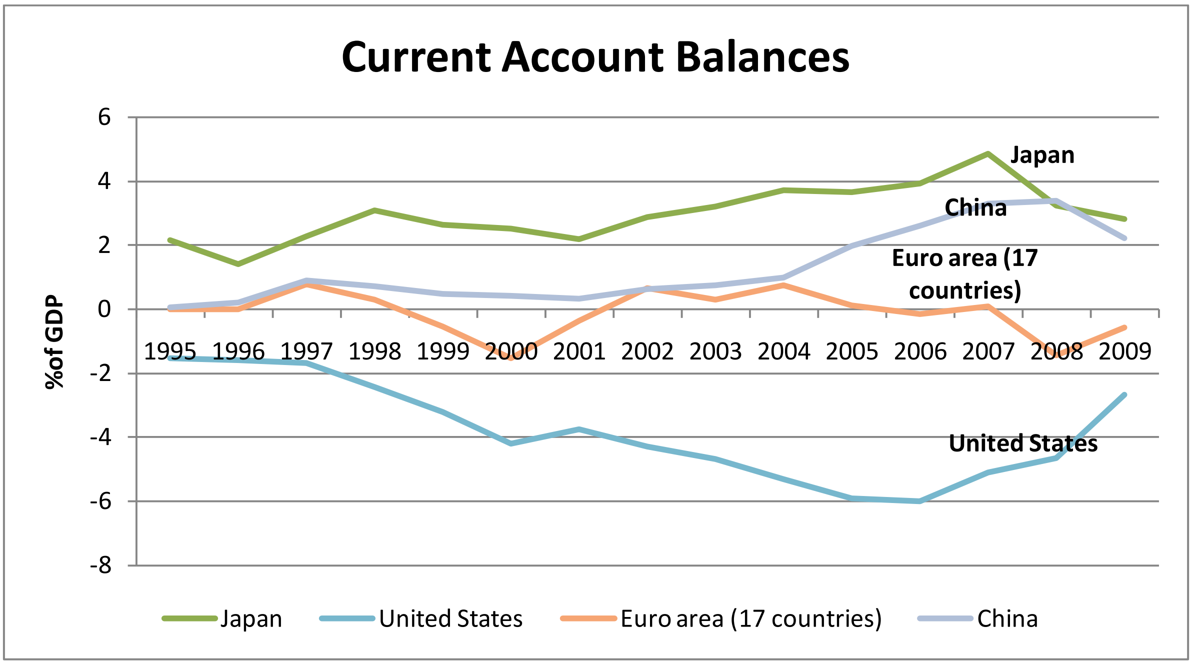

Figure 5 Current Account Balances in major economies
Source: www.stats.oecd.org

Figure 4 shows that economies such as Spain and Ireland have experienced large deficits on the back of property and construction booms that proved unsustainable. Meanwhile, current account surpluses in Germany and the Netherlands far above historical norms financed unsustainable booms elsewhere.

Demographic factors played some role in most cases. The current age-dependency ratio (indirectly - ratio of retirees to workers) boosts current consumption relative to income while future increases in the age-dependency ratio increase current saving. Analysis by Barnes, Lawson and Radziwill [12] suggests that Germany's demographic position was expected to generate a substantial surplus, while a country with a relatively young population such as Ireland was expected to have run a deficit. Budget deficits in Greece and Portugal made significant contributions to their weak external positions.

As the aggregate euro area current account position was close to balance, Barnes, Lawson and Radziwill [12] concluded that much of the lending and borrowing of individual countries had offsetting positions of other euro area economies. German and Dutch surpluses were financing deficits in Italy, Spain and a number of other Euro-area countries.

Introduction of European monetary union or euro facilitated movement of capital by eliminating nominal exchange rate risks. Small countries can face a very high elasticity of supply of credit within a larger currency union once currency risk is removed and given that increasing exposure to their country-specific risk does not have a large impact on overall portfolios. [12]

Strong housing investment, associated with unsustainable property booms, accounted for large contributions to the current account deficits of Ireland and Spain. Countries with above-average growth such as Greece, Ireland and Spain suffered from some degree of domestic overheating, leading to current account deficits. Rampant private demand in many cases, driven by low real interest rates and strong credit growth, strengthened domestic absorption, with the exception of Greece where lax fiscal policy played a big role. [13]

Over the past 15 years, combination of diverse forces created a significant increase in the global supply of savings which *Bernanke* calls a 'global saving glut'. "It helps to explain both the increase in the US current account deficit and the relatively low level of long-term real interest rates in the world. Over these years, many emerging market economies have run large, sustained current account surpluses and thus have become exporters of capital to the advanced economies, especially the United States. These inflows exacerbated the US current account deficit and were also a factor pushing the US and global longer-term interest rates below levels suggested by expected short-term rates and other macroeconomic fundamentals." [14]

"Some emerging Asian economies and Middle Eastern oil exporters showed a strong preference for very safe and liquid US assets in the middle of the past decade, especially Treasury and agency securities. Substantial gross capital inflows were also received from the advanced economies, especially European countries. European investors placed a high value on safety and liquidity in their US investments; however, relative to purchases by emerging markets, those of European investors encompassed a broader range of US securities, including sizable amounts of private-label mortgage-backed securities (MBS) as well as other highly rated asset-backed securities. Unlike the global saving glut countries, which funded their acquisitions of US assets through their current account surpluses, Europe on net had a roughly balanced current account and thus issued liabilities to fund acquisitions of US assets. However, as these liabilities were tilted toward more traditional securities, including sovereign debt, as well as bank deposits, the result here too was a net increase in the global demand for highly rated US assets." [15]

Bernanke makes an important point - "the preference by so many investors for perceived safety created strong incentives for US financial engineers to develop investment products that "transformed" risky loans into highly rated securities. Remarkably, even though a large share of the new US mortgages during the housing boom were of weak credit quality, financial engineering resulted in the overwhelming share of private-label mortgage-related securities being rated AAA."

When the crisis struck the world, all the countries diverted their savings to the US, as it has the largest and most developed financial system in the world. The inference made was – if the US financial system fails, other countries cannot survive the crisis as their financial system cannot be better than the US. As a result, the dollar remained strong (unlike previous crisis in other countries where the local currency depreciates significantly) which did/does not allow the US to come quickly out of the crisis.

3.2.3 Financial Innovation

In the simplest terms, financial Innovation refers to creating and marketing of new types of securities. Minsky coined the term 'Money Manager Capitalism', characterized by 'highly levered profit-seeking organizations' such as money market mutual funds, mutual funds, sovereign wealth funds, and private pension funds. Over time, we saw an increasing role for the financial sector, the so-called financialisation of the economy. The reason behind this financialisation could be the technological advancements, financial liberalisation, globalisation and increased competition in the global market.

The regulatory framework's dismantling since the 1970s boosted growing concentration in the financial system. US financial institutions grew in part because of the elimination of niche banking, allowing big banks to engage in a larger variety of financial activities. With globalization and the rise of securitization, many large domestic institutions became active participants in global financial markets thus growing even bigger. Each sector came to be dominated by a few large institutions with each institution being so large as to be able to bring down the whole system if it failed. [16]

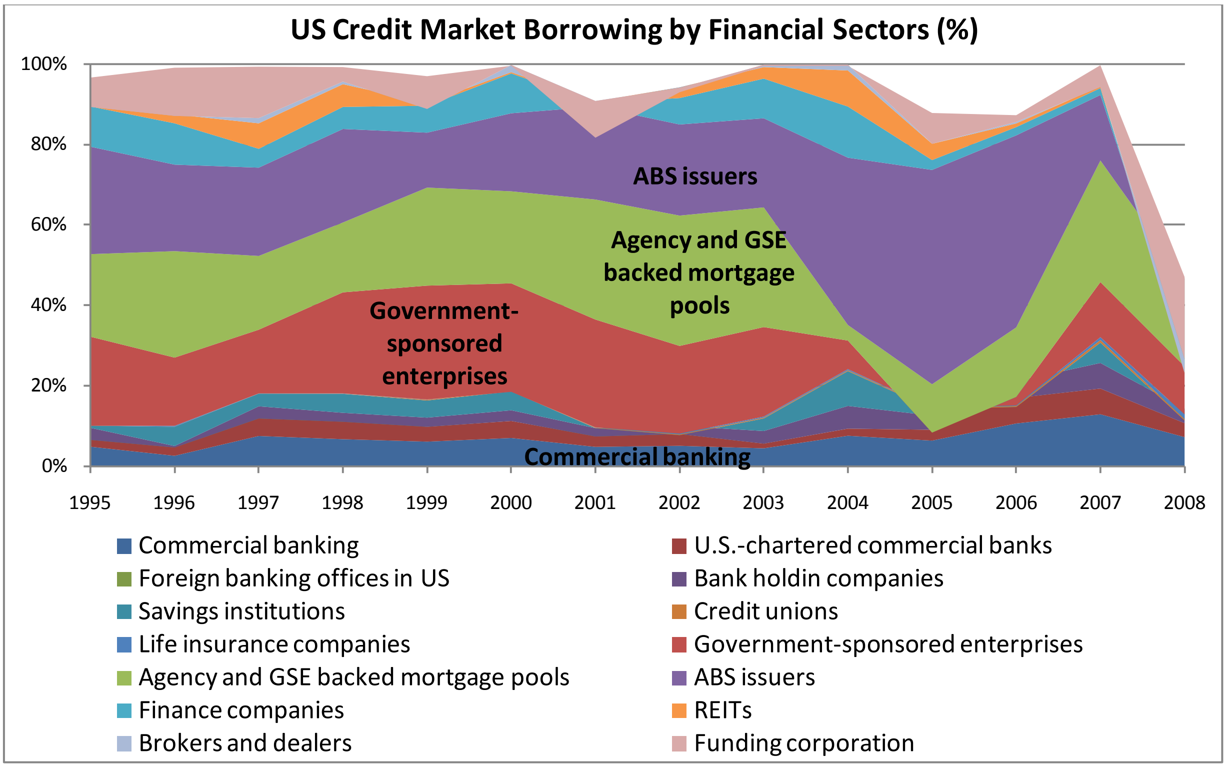

Figure 6 Credit Market Borrowing by Financial Sectors
Source: www.federalreserve.gov

As Figure 6 shows, credit market debt owed by commercial banks, finance companies and savings institutions has decreased while borrowing by issuers of ABS, Agency and GSE backed mortgage pools as well as funding corporations has grown. Issuers of ABS are Special Purpose Vehicles (SPVs) established to hold assets and issue debt obligations backed by those assets. These are not actual institutions but rather entities typically used by companies to isolate themselves from financial risk. Banks set up ABS issuers to move securitized assets from their balance sheets to that of the SPVs. These Special Purpose Vehicles then issue bonds and commercial paper which are backed by the assets in the pool. This allows regulated banks to avoid capital and reserve requirements—increasing leverage and return on equity.

Minsky argued that the fragility of the financial structure is based on the quality of loans made by bankers (accumulation of loans by non-government sector). If bankers finance risky operations (due to speculative euphoria generated when corporate cash flows are greater than needed for debt payoff), they become fragile. Before the invention of securitization, banks were interested in granting loans only to creditworthy customers and performed due diligence before the grant. Financial innovations, such as securitization and Credit Default Swaps, separated risk from responsibility, contributing to a deterioration of loan quality and hence greater fragility. Deregulation allowed banks to engage in all sorts of risky activities many of which are incompatible with the role banks are supposed to play. Many of the larger banks have changed so much that it is unclear whether they can be called banks—since they did little underwriting, and tried to shift risks off balance sheets—either by packaging and selling assets or by purchasing “insurance” in the form of CDSs.[16]

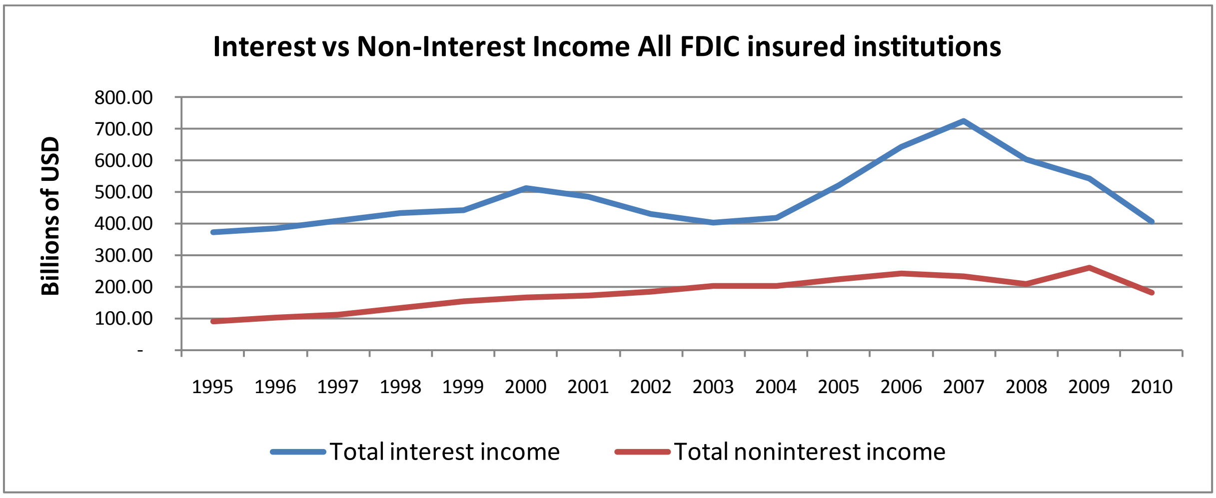

Figure 7 Comparison of Interest and Non-interest income in US
Source: FDIC - Statistics on Depository Institutions Report

As we can see from the above figure, non-interest income has become a larger share of income. Much of this comes from “off-balance sheet” activities.

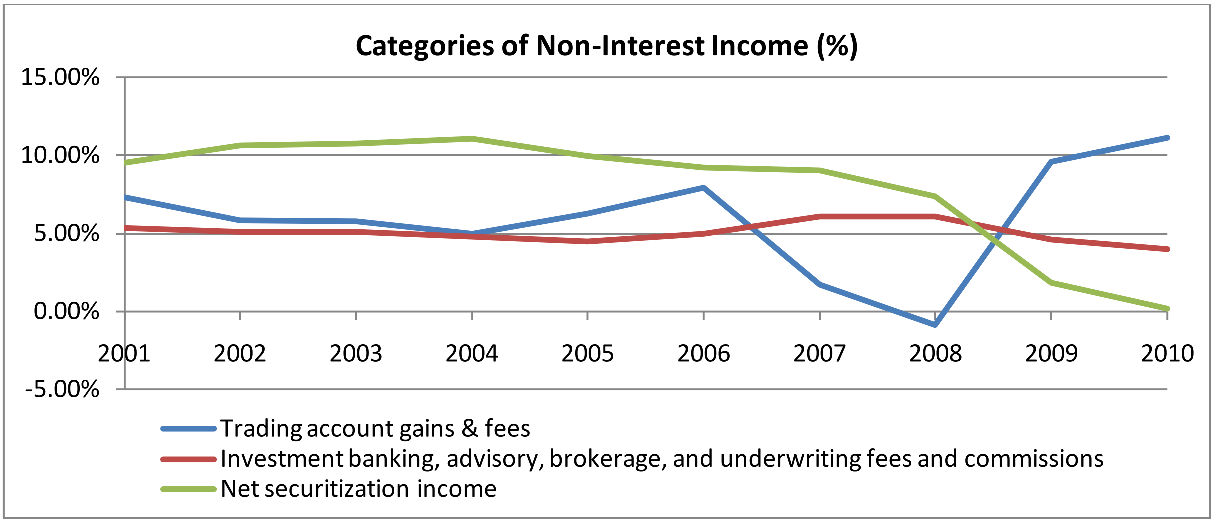

Figure 8 Comparison of Categories of Non-Interest income
Source: FDIC - Statistics on Depository Institutions Report

Traditionally, the largest chunk of the noninterest income comes from Trading Account gains and fees. The next categories are ‘Net Securitization Income and Servicing Fees’ & ‘Investment banking, advisory, brokerage, and underwriting fees and commissions’. As we can see from Figure 8, during the last decade securitization income contributed more to non-interest income. As income from Trading Account gains fell, Net Securitization income rose. Figures 7 & 8 show the increased volume of securitization in the bank activities.

3.2.4 Securitization and Credit Default Swaps

Two ‘innovations’ credited for transformation of the financial system are securitization and credit default swaps; a simultaneous process of banks securitizing every type of loan and the CDS issuers ‘insuring’ these securities. This took the onus away from underwriting. Various kinds of insurance, including buy-back guarantees as well as CDSs made the securitized mortgages (and other types of loans) appear safe, and thus, supported high prices for them.

Commercial loans are granted with the expectation of future cash flows. Residential loans, on the other hand, were increasingly made against the value of collateral. Reliance on residential mortgages made the banks vulnerable to changing conditions in the housing market.

CDSs are marketed as insurance or a way to hedge against risks and therefore distribute it to market participants who are most willing and able to bear it. Wall Street banks also used CDSs to mask the risks they had on their books. By engaging in risky activities and meantime "hedging" by buying CDSs banks seemed to remain relatively risk free in the eyes of regulators. It could get pretty complex because CDSs allowed one to make bets on failures of assets, firms, or even nations.

3.2.5 The Shadow Banking System

The **shadow banking system** or the shadow financial system consists of non-depository banks and other financial entities (e.g., investment banks, hedge funds, and money market funds) that are involved in facilitating the creation of credit across the global financial system, but are not subject to regulatory oversight. The shadow banking system also refers to unregulated activities by regulated institutions. As a result, many of the institutions and instruments are able to employ higher market, credit and liquidity risks, and do not have capital requirements commensurate with those risks. [17]

Shadow banks are financial intermediaries that conduct maturity, credit, and liquidity transformation without access to central bank liquidity or public sector credit guarantees. Shadow banks are interconnected along a vertically integrated, long intermediation chain, which intermediates credit through a wide range of securitization and secured funding techniques such as ABCP, asset-backed securities, collateralized debt obligations, and repo.[18]

Unlike in the traditional banking system, savers do not place their funds with banks, but rather with money market mutual funds and similar funds, which invest these funds in the liabilities of shadow banks, which offer a spectrum of seniority and duration, and correspondingly, risk and return. Borrowers still get loans, leases and mortgages, but not only from depository institutions, but also from entities like finance companies. Credit intermediation process of shadow banks includes the following steps and specific institutions to perform these steps [18]:

	Function	Shadow Banks	Shadow Banks' Funding
Step 1	Loan Origination	Finance companies	CP, MTNs, bonds
Step 2	Loan warehousing	Single and multi-seller conduits	ABCP
Step 3	ABS issuance	SPVs, structured by broker-dealers	ABS
Step 4	ABS warehousing	Hybrid, TRS/repo conduits, broker-dealers' trading books	ABCP, repo
Step 5	ABS CDO issuance	SPVs, structured by broker-dealers	ABS CDOs, CDO-squareds
Step 6	ABS "intermediation"	LPFCs, SIVs, securities arbitrage conduits, credit hedge funds	ABCP, MTN, repo
Step 7	Wholesale funding	MMMFs, enhanced cash funds, securities lenders, etc.	$1 NAV shares (shadow bank "deposits")

Table 1: The Steps, Entities and Funding Techniques Involved in Shadow Credit Intermediation
Source: Shadow Banking (Pozsar, Adrian, Ashcraft, Boesky (2010))

The above table is explained in the Appendix 6.1.

Thus, we find that shadow banking had moved from traditional originate-to-hold model to originate-to-distribute model involving a range of shadow banks. This transforms the risky long term loans into seemingly credit-risk free, short-term, money-like instruments, net asset value (NAV) shares that are issued by money market mutual funds, and are 'withdrawable' on demand, much like a demand deposit at a bank.

4 Identifying the Achilles' heels

In this section we will try to determine the weak links in the system that were responsible for the downfall of the financial system. Also we look into the roles played by the selected institutions/instruments/policies in the financial system. We analyse the roles and look at the shortcomings in the institution, instrument and its application. This will help us to analyse the regulations that have come up after the crisis.

4.1 Hedge funds- Are they responsible for the collapse?

A hedge fund is a fund that can take both long and short positions, use arbitrage, leverage, buy and sell undervalued securities, trade options or bonds, and invest in almost any opportunity in any market where it foresees impressive gains at reduced risk. Legally, hedge funds are most often set up as private investment partnerships that are open to a limited number of investors and require a very large initial minimum investment. Investments in hedge funds are illiquid as they often require investors keep their money in the fund for at least one year. [19]

Hedge funds managers can engage in a broader set of investment strategies than more restricted asset managers because they enjoy a very flexible regulatory framework. Whereas managers operate in large financial centres, hedge funds are legally domiciled in offshore places to benefit most of fiscal advantages and lenient regulation. Managers concentrate on research and asset allocation. Associated services in law, administration, custody, brokerage and the like are outsourced.

We look at the perceptions and comments about hedge funds and find reasons behind those characteristics of hedge funds.

- ***Hedge Funds lack transparency***

Generally, clients of hedge funds are high-net-worth people who are looking for confidentiality. Also, hedge fund managers feel threatened by more regulated asset managers who could steal their strategies based on algorithms. This disclosure would lead to an efficient closing of arbitrage opportunities. From a hedge fund point of view, these arguments are understandable; but this creates a black box which is looked at with suspicion.

- ***Hedge funds and prime brokers work hand-in-hand***

The financial leverage (via derivatives markets) is the major service that prime brokers offer to hedge funds. Prime brokers are usually the lending arm of investment banks and bear the counterpart risk. Hedge funds offer two opportunities to investment banks: first they reduce bank credit risks because they sell credit risk protection. Second, they provide liquidity for securitization operations and other strategies of financing. The hedge funds industry is very concentrated, so is the prime brokerage. Two investment banks, Morgan Stanley and Goldman Sachs, count for more than 40% of total assets in the US. Hedge funds provide 20% to 30% of the profit of investment banks. Two thirds of this percentage comes from the 200 main hedge funds. So hedge funds are very profitable clients for investment banks. It illustrates the interdependence between prime brokers and hedge funds, generating vulnerability whether a big hedge fund fails. [20]

- Advantages

  - Hedge funds act as an arbitrager, thereby correcting mispricing. They, by using leverage, for example in derivatives market, help bring the price of a security to a more fundamental value.
  - Hedge funds are liquidity providers in the financial system. Higher liquidity is generally believed to lead to more effective pricing. Hedge funds tend to be more active than other investors, implying that more assets are bought and sold. Hedge funds are attracted to illiquid markets and instruments. They are also often important participants in new markets. All of these properties provide increased liquidity.
  - Providing liquidity reduces the volatility in the market, thereby contradicting a general view that they create volatility due to their large turnover.

- Disadvantages

  - Although leverage helps hedge funds to make large profits, it makes the trades more risky, thereby amplifying losses. A downfall of a large hedge fund (e.g. LTCM) can create ripples in the investment banking industry by sucking liquidity from the market (counterparty risk).

- The reality

  - A 2007 study of hedge fund leverage by the Organization for Economic Co-operation and Development (OECD) estimated that average hedge fund leverage was 3.9 to 1, which means that for every 3.9 dollars in hedge fund assets, one dollar was equity and the rest was borrowed (or the economic equivalent of borrowing was achieved by using derivatives). [21]
  - By contrast, banking sector leverage generally ranges from about 12 to 1 to 17 to 1 while major US investment banks leverage in particular ranged from 20 to 1 to as high as 33 to 1 in recent years.[22]

Institutionalisation of Hedge Fund Industry

The largest share of hedge funds capital has historically come from high net worth individuals. Since 2000, institutionalisation of the hedge fund industry has occurred under the spur of pension funds and funds of funds, which are looking for higher returns. For the first time, in 2007, institutional investors account for more than 50% of hedge funds inflows. [20]

From 1997 to 2006, the share of wealthy individuals in hedge fund capital decreased from 61% to 40%, the share of funds of funds increased from 14% to 23%, the share of pension funds from 5%to 11% with some peaks at 15% between 2001 and 2004 and the share of endowments from 11% to

18%. Pension funds and funds of funds registered the highest annual growth rate. [20]

- Implications
  - One argument for a lenient regulation was that most of capital came from quite a small number of wealthy individuals and prone to risk taking. This argument is no longer relevant with the increasing institutionalisation of the hedge funds industry. [20]

Risks associated with Hedge Funds

- Hedge funds resort to non linear strategies in order to boost returns. These strategies rely on Gaussian distribution which works only in ideal world. These strategies pose extreme risk because of asymmetric risk profiles and thick tail risks.
- Hedge funds, in order to lure wealthy investors, might forge the results. They suffer from survivorship bias and backfill bias.
- Hedge funds generate systemic risk by investing in highly illiquid assets. They make use of leverage from the prime brokers and invest in these illiquid assets. This creates a severe counterparty risk. Once a hedge fund suffers losses, leverage amplifies those losses, giving rise to increased margin calls, thereby taking away liquidity from the market.
- Hedge funds tend to suffer from herd behaviour. In spite of being aware of mispricing, all the hedge funds tend to invest in the same assets, thereby creating asset bubbles. They do this deliberately to ride on the wave till it lasts. This is because of high competition in the industry and high benchmarks. Notion exists that if asset bubble bursts, it will affect others equally.

Hedge Funds and securitization

Hedge funds invested heavily in structured products like ABS and CDO (sold by off-balance-sheet vehicles) created by shadow banks. They do so by [21]:

- **Securities lending**: the bank lends securities to hedge funds and others, and gets cash or other securities as collateral (found on the liabilities side of the balance sheet as cash received as collateral for securities lent). Hedge funds, for example, borrow stock in order to short securities. Other banks also borrow stock.
- **Reverse repurchase agreements**: the bank buys securities from a hedge fund etc. which in turn commits to buy them back (found on the asset side of the balance sheet) – the hedge fund gets a credit but counterparty risk arises in the event that the customer cannot fulfil its obligations. This is an important mechanism of hedge fund borrowing.
- **Derivatives**: derivative contracts with hedge funds create counterparty risk (found on the asset side of the balance sheet),
- **Margin loans**: the bank advances a loan to a hedge fund (asset side) and gets a security from the hedge fund as collateral (usually cash and securities). This important activity is not separately disclosed by prime brokers.

They also issue ABCP (Asset-backed commercial paper,) i.e. commercial paper secured by ABS pools. This paper is bought and held by unit trusts and mutual funds, which are providers of liquidity (institutionalisation of Hedge Fund industry).

They can capture their partners in long lock-up periods and they do not have to mark-to-market their positions. This is needed to establish spread arbitrage trades. Likewise, distressed debt investments require substantial time for returns to materialize given the slow nature of the bankruptcy process. The drawback is that they can smooth out their performances. It is why they often appear less volatile than the markets.

4.1.1 Author's Opinion on Hedge Funds

"Hedge funds are, no doubt, an accomplice in the shadow banking system. There are more advantages of hedge funds than disadvantages. They help to bring the wealth of HNIs into the market. These HNIs need incentives of high returns to invest their money. The concept that Hedge funds actually perform better than the market is debatable, but apparently they do generate excitement of higher than market returns for HNIs.

It is very easy to blame hedge funds for the financial turmoil but it is not the institutions that are bad, it is the strategies/products/process they use are to be blamed. These strategies are the result of economic policies that are in existence. The products are developed to utilize the existing economic incentives (like taxes, subsidies) or to bypass regulations to make profit. Also these strategies are not limited to any institution; they can develop anywhere outside or inside the regulatory umbrella. Also new institutions with innovative organisational structures can come up which use strategies similar to hedge funds."

4.2 Is securitization bad?

"In theory, securitization should serve to reduce credit risk by spreading it more widely. But by breaking the direct link between borrowers and lenders, securitization led to an erosion of lending standards, resulting in a market failure that fed the housing boom and deepened the housing bust."[23]

Securitization-based, shadow credit intermediation process can not only lower the cost and improve the availability of credit, but also reduce volatility of the financial system as a whole. Securitization involving real credit risk transfer is an important way for an issuer to limit concentrations to certain borrowers, loan types and geographies on its balance sheet. Term asset-backed securitization (ABS) markets are valuable not only as a means for a lender to diversify its sources of funding, but also to raise long-term, maturity-matched funding to better manage its asset-liability mismatch than it could by funding term loans with short-term deposits. It permits lenders to realize economies of scale from their loan origination platforms, branches, call centres and servicing operations that are not possible when required to retain loans on balance sheet. It is a potentially promising way to involve the market in the supervision of banks, by providing third-party discipline and market pricing of assets that would be opaque if left on the banks' balance sheets. [18]

As Hudson writes in his book 'The Monster'- "subprime could flourish even in hard economic times as long as three things happened. First, home values needed to keep rising and lending standards in the subprime market needed to keep loosening, so that borrowers had the ability to refinance out of loans they could not afford and temporarily stave of defaults. Second, Wall Street investors needed to keep pouring money into the market, so that lenders could increase their loan volumes. This allowed lenders to obscure their true default rates. Third, lenders needed to 'price their risks' correctly, meaning they charged enough in fees and interest to all borrowers that they could cover the losses caused by sizeable percentage of loans that did go into default."[24]

Securitization, in fact, was instrumental in overcoming the problems of liquidity and transparency in the hedge funds industry. Institutional investors demanded transparency for their investments. The tranching process helped them to achieve desired risk return profiles (hedge funds were buyers of securitized instruments) with the assessment from credit rating agencies on these tranches. As the secondary market for these instruments developed liquidity in these instruments, which was absent in customary hedge fund operations, was guaranteed [25]. Hence, during the hay days, securitization was hailed as a great innovation.

As the book by Hudson- *'The Monster'*- finds out that young and ambitious sales force generated unprecedented loan sales volumes by using phony ways. They forged the documents of subprime borrowers who were not intellectual enough to understand these financials. Sales volume increased with refinancing and it was the fees (exorbitant for subprime borrowers) from these refinancing that generated profit for the financial companies. As a result, generating large number of loans was the only thing that mattered to the sales force. Finance companies knew that they do not have to worry about the quality of the loans as they would be bundled and find buyers on the Wall Street.

❖ ***Motivation behind securitization***

- Securitisation transactions allow disaggregation of risks of an underlying pool of exposures held by the SPV and reallocate these risks to those parties most willing to take on those risks. This purpose is therefore a motivating factor for both originators and investors. [26]
- Regulatory capital also serves as an important motivating factor for engaging in transactions involving SPV and securitization. As the original loan becomes an off balance sheet item, there is a reduction in the regulatory capital that bank has to keep.
- Investors may be motivated to purchase securities issued by SPVs to gain exposure to new asset classes or possibly to avert regulatory and internal limits.

❖ ***Risks transfer through securitization and due diligence required***

- CDO/CLOs and RMBS structures allow high level of risk transfers for the originators.[26]
  - It is important to know if the originator has retained a position in the capital structure and, if so, what position.
  - Tranches initially retained at deal inception can be subsequently sold or else transformed through re-securitisation processes.
  - Originating firms also have an asymmetric informational advantage in knowing more about the exposures than investors, which could potentially allow them to structure a deal to most efficiently transfer risk away from themselves.
  - As the distance between the originator of loans and the final investor increases, the motivation of the investor to do due diligence on the initial product fades. In most cases, investor may not know about the quality of loans in which investment is being made. Hence the prospect of adequate risk management exercise remains bleak.
  - As the Basel committee report points out some senior managers were unaware of the full extent of their firm's overall linkage to and obligations (explicit or implicit) toward their SPEs. [26]

4.2.1 Author's opinion on Securitization

"The view that 'securitization is bad' should bring out the shortcomings of securitization instruments. If we look closely it is not the instrument that is fraught with errors, it is the application of these instruments that needs to be blamed. Also continuous warehousing and generation of multi level CDOs brought bad name for securitization. Factoring in limited knowledge about the product made it look like a deadly beast. This can be considered as an

'overdose of rich nutrition' in which multi level securitized instruments act as the overdose and easy credit is the rich nutrition."

4.3 Did economic policy spawn the financial crisis?

As the figure below shows, monetary and fiscal policy of an economy can influence the economy. Monetary and fiscal policy has the ability to alter the availability of capital in the country. Capital creates demand in the economy and industrial sector creates supply to satisfy that demand. In order to satisfy the demand, it must employ capital and labour resources. As industries utilize their capacity they generate profits. They employ these profits to add more capacity. Also growing industry or country demands more debt to invest in the economy. The same is true when monetary and fiscal policies withdraw capital from the economy.

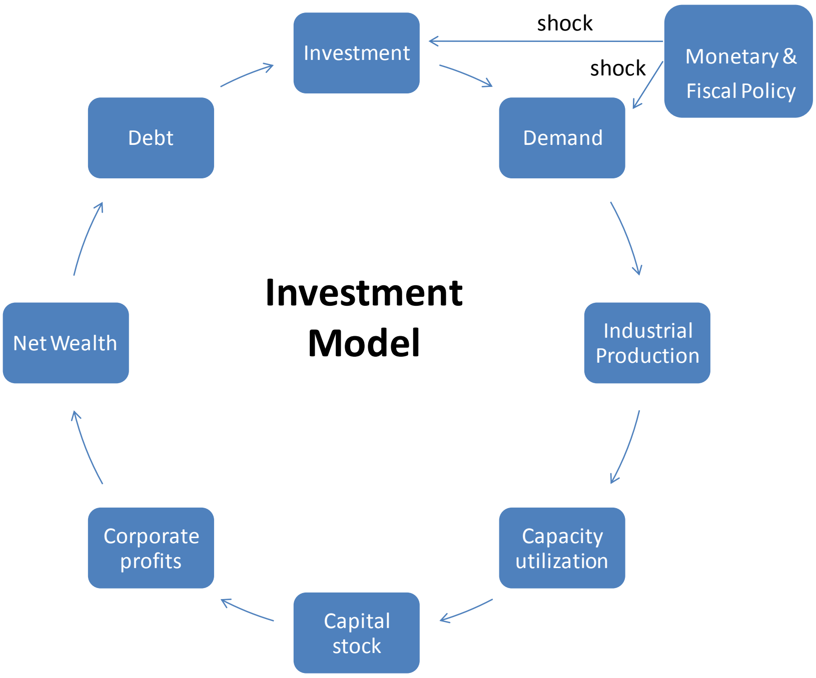

Figure 9 Investment Model of an economy
Source: [3]

As most economists would agree there had been a significant change in the economic policy of the US in 1980s, during which US followed a neo-liberal growth model, which had an impact on the business cycle. The new macroeconomic policies can be traced back to the election of Ronal Regan as the president of US. Palley [27] argues that "this neo-liberal growth model thrived on financial booms and cheap imports. These booms provided firms and consumers the collateral to borrow. Borrowing became easy with financial innovation as new products were developed that could be used as collateral for borrowing more. Every US business cycle since 1980 and the business cycles under presidents Reagan, Bush Sr., Clinton, and Bush Jr. have common features. Those features include asset price inflation (equities and housing); rising household and corporate leverage ratios measured respectively as debt/income and debt/equity ratios; a strong dollar; trade deficits; disinflation or low inflation; and manufacturing job loss."

Globalisation allowed firms to establish manufacturing facilities in low cost countries. With the advent of information technology, sharing information became cheaper and firms became international in their operations. The increased competition from the low wage countries put pressure on the wages on American workforce. This pressure on wages demanded that the cost of products for American consumers had to be kept low. To do this the imports had to be made cheaper which was possible only with a strong dollar. Globalisation was encouraged by free trade agreements. [27]

There was a change in the policy attitude where budget deficits were no longer a point of concern.
Large budget deficits helped to rein in inflation and gave the choice to consumer to look for maximum economic returns. Consumers indebtedness increased as housing income became a significant part of the households. Household debt increased significantly in the last two decades.
The following graph shows the extraordinary scale of the 2001–06 house price bubble and it reveals the systemic role of house price inflation in driving economic expansions.

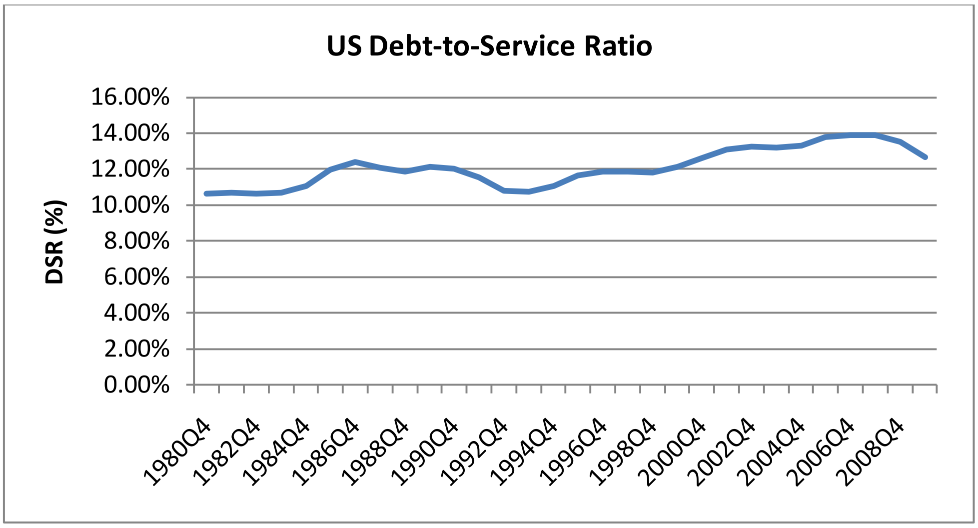

Figure 10 US Debt-to-service ratio
Source: http://www.federalreserve.gov/releases/housedebt

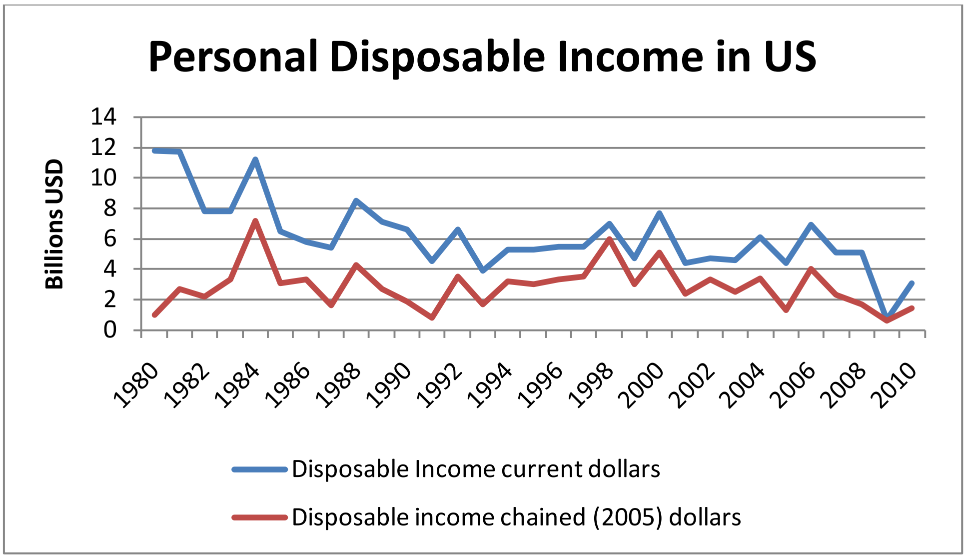

Figure 11 Personal Disposable Income in US
Source: Bureau of Economic Analysis, US department of Commerce

Personal disposable income in figure 11 shows the savings by the US citizens. It shows a downward trend. The reason behind this was that they could borrow more in easily available credit and rely on high asset prices. But one can easily realise that this trend is unsustainable as the savings rate has a lower bound of zero. Savings cannot fall indefinitely.

In 1990s and early 2000s, lot of emerging markets (Argentina, Mexico, East Asian crisis, Brazil, Russia) experienced financial crisis. The response to most of these crises by US Treasury and IMF was to give large dollar loans to these countries. Due to the collapse of exchange rates of these countries, dollar appreciation was accepted and institutionalised as 'strong dollar' policy. [27]

In return, as Palley explains, developing countries accumulated financial obligations against the United States, principally in the form of Treasury securities. This provided them with foreign exchange reserves and collateral that was supposed to make investors feel secure.

It was now profitable for US corporations to set up manufacturing facilities abroad and export to the US. As the US consumers had more buying power, they became the buyer of 'first and last resort'.

The recession of 2001 saw the bursting of the stock market and dot com bubbles. However, although investment spending was hit hard, consumer spending was largely untouched, owing to continued household borrowing and continued moderate increases in home prices. Additionally, the financial system was largely unscathed because the stock market bubble involved limited reliance on debt financing.

Krugman [28] in his book – 'The Return of Depression Economics'- points out that "after the dot com bubble burst, unemployment remained high for 2 years. This led Fed to worry about the continuous weakness in job market and sluggishness in the economy (worried about situation similar to Japan). Alan Greenspan called this 'corrosive deflation' and kept on cutting rates, eventually bringing the Federal funds rate down to 1 percent in 2003 as shown in the figure below. This monetary policy got traction through the housing market. Some critics called that "Greenspan had succeeded in replacing stock bubble with a housing bubble"."

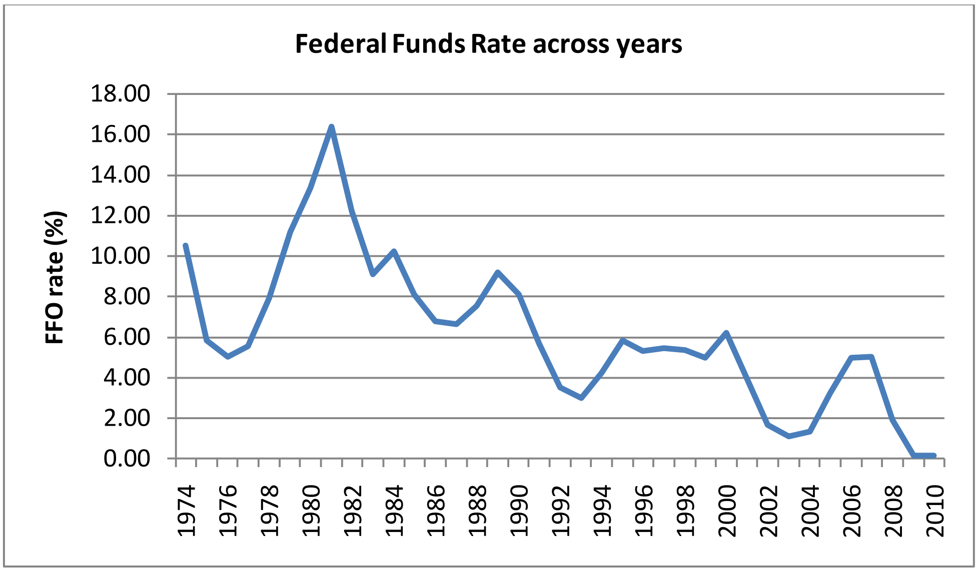

Figure 12 Federal Funds Rate
Source: http://www.federalreserve.gov

❖ *Impact on EU*

The financial crisis has had a pervasive impact on the real economy of the EU, and this in turn led to adverse feedback effects on loan books, asset valuations and credit supply. But some EU countries have been more vulnerable than others, reflecting inter alia differences in current account positions, exposure to real estate bubbles or the presence of a large financial centre. The financial crisis strongly affected the EU economy from the autumn of 2008 onward through three transmission channels [29]:

- ***via the connections within the financial system***
  Although initially the losses mostly originated in the United States, the write-downs of banks are estimated to be considerately larger in Europe, notably in the UK and the euro area, than in the US. Also as a result of deleveraging, banks repatriated capital from the emerging economies of Europe by closing credit lines. It initially started with the liquidity problem, lack of confidence on counterparties and uncertainties in prices of complex products, but later developed into solvency crisis.
- ***via wealth and confidence effects on demand***
  As the housing prices dropped, households experienced stiffening of lending standards. Saving increased and the demand for consumer goods decreased. Easy credit was no more available. Also there was little confidence on the bank portfolios. These portfolios found no buyers, as investors flocked to safe havens (government bonds).
- ***via global trade***
  Business investment and demand for consumer durables - both strongly credit dependent and trade intensive - had plummeted, due to the unavailability of trade finance and a faster impact of activity on trade as a result of globalisation and the prevalence of global supply chains.

4.3.1 Author's opinion on economic policy before the crisis

"The analogy of 'rich nutrition overdose' applies here as well. The lax economic policy shows the increasing distance of the regulatory bodies with the ground reality. The tendency to get carried away in boom times is very easy. Political parties have to show results in a time which they are in power. Hence their focus is on short term results rather than long term consequences of the decisions made. Add to this the short memory that public carries when it goes to vote.

The dependence of EU shows the right hand role it plays to the US. The EU benefits till the US economy prospers. We don't need numbers to show the correlation between the US and EU economies (especially the UK) as consequences of the crisis say it all.

It can also be argued that the economic policies of various countries could not keep pace with the rapidly evolving global financial systems. While the regulatory bodies kept operating in their jurisdictional territories, the financial institutions went beyond borders to operate on a global scale. The best the regulatory bodies could agree on was the cooperation in developing the standards without any enforcement agency."

5 Regulations after the crisis – implications and public comments

There were some concepts that, taken as truths, were fundamentally wrong. We should question the current market characteristics like [30]:

- Is the market price always correct? Can there be widespread mispricing of assets and significant market failures?
- Can markets be relied on to be self regulating?
- Can investors' rationality be implicitly assumed in every model using the efficient market hypothesis?
- There are underlying assumptions for every model. Pricing risk of instruments using these assumptions can only be, at best, a forecast. Can these forecasts be assumed to be fundamental values?
- Is the assumption of independence between the government risk-free rate and private risk premiums valid today? "The sovereign debt crisis of Greece and other EU Member States in 2010 have clearly shown that there is dependence between government bill rates (generally considered risk free) and the creditworthiness of private issuers (with their own risk premiums). When a systemic crisis occurs, sovereign risk and bank credit risk become mutually dependent because of:
  a) increased risk aversion and
  b) general fear of contagion";
- What is the degree to which risk can be diversified across the markets, instruments and products? Can spreading the risk be considered as its mitigation? Should risk diversification be considered as a license to have reduced capital buffers and higher leverage ratios?
- The chicken egg problem finds it way here as well. Are economic policies responsible for crisis or the crisis helps in defining the future economic policies?
- Does price stability lead automatically to financial stability?

The above questions should have been asked before formulating any regulatory supervision. In the next part we discuss the way in which the EU and the US look to improve the regulatory standards.

Both the EU and the US are implementing an improved regulatory environment. The approach has two main common objectives: first, decreasing the likelihood of a similar financial crisis reoccurring; and second, ensuring that the costs of any failure of financial institutions are not borne by taxpayers, but by the failing banks and the financial sector more generally. To this end, resolution procedures must ensure that even systemically relevant financial institutions can be allowed to fail in an orderly manner. [30]

The Dodd-Frank Act (July 2010) represents the most important change to financial regulation in the US since the Great Depression: it impacts all federal supervisory agencies and affects all major aspects of the financial services industry. The EU, with start through the broad endorsement of the de Larosière Report (February 2009), went ahead with Economic and Financial Affairs Council (ECOFIN) endorsing an agreement with the European Parliament on the reform of the EU framework for financial supervision (in September 2010). On a global level G-20 countries have accepted the changes in the existing Basel II framework (Basel III accord).

All the regulatory frameworks try to reach the objectives through new regulations in the following major areas:

a) Capital Levels

b) Liquidity standards
c) Risk management practices
d) Allowable activities

One should keep in mind that although these frameworks try to tackle common problems, the territorial nature of these regulations poses potential problems at the global level. The territorial nature of these regulations cannot be avoided keeping in mind the political objectives and pressures of the governments. However, countries can mitigate the risks of incompatibility through better and more coordination at the global level.

The de Larosière report examined the causes of the financial crisis by identifying the interconnectedness of the causes at the global level. The report came up with recommendations that aim to reform the current regulatory framework through sustainable economic policies and macro-prudential oversight. [30]

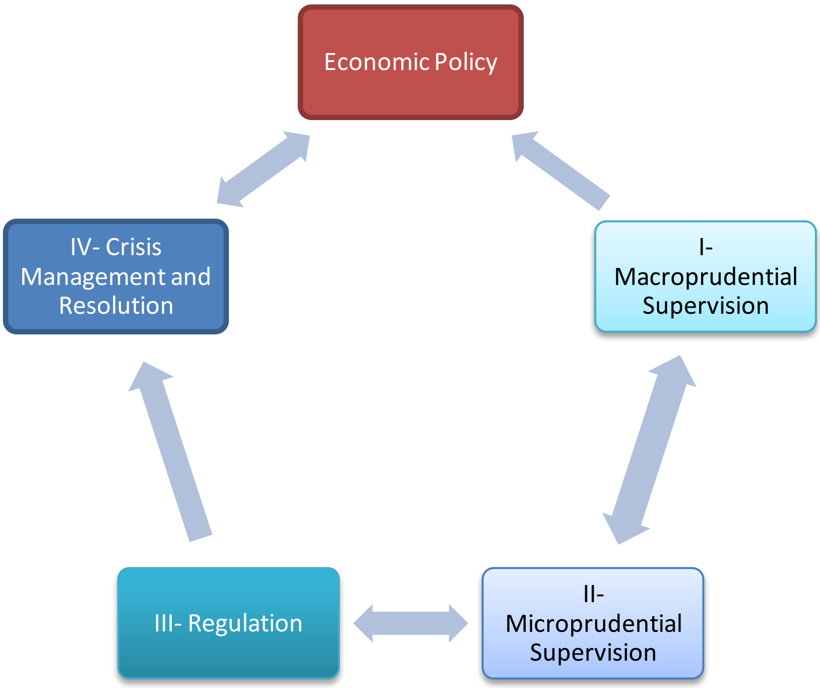

Figure 13: The innovative, interactive de Larosière approach to financial stability reform in Europe
Source: [30]

As a common approach for the US, the EU and global regulations, we can have 4 building blocks. These are[30]:

1. **Macro-prudential objectives**
   These objectives deal with the following issues:
   a. Systemic supervision by identifying the systemically important financial institutions (SIFIs).
   b. Interconnectedness of these institutions round the globe.
   c. Resolution authority to act as a watchdog to check if these institutions are viable.
2. **Micro-prudential objectives**
   These objectives deal with:
   a. Capital levels
   b. Liquidity and liquidity risk management

   c. Credit rating agencies
   d. Derivatives legislation
3. **Regulation**
   This block deals with the regulatory repair needed in the "faulty triad" (the capital standard, the accounting standard and the operation of credit rating agencies) and securitised products and derivative markets.
4. **Crisis Management and Resolution**
   This block tries to pre-determine the crisis situations and institutions that pose systemic risk. After the lessons learnt, it tries to avoid the moral hazard problems and shelter taxpayers from the cost of banking failures.

In the next sections we are going to compare the new regulatory framework in the US and the EU. It should be kept in mind that some of the regulations have only been recommended and not passed by the governments. But still the recommendations also help us to understand the idea behind them and the objective they try to fulfil using them. Also it is worthwhile to state here that Basel Accords are just standards and have no enforcement agency. They are standards that the US, various governments in EU and around the world have accepted to follow voluntarily, though only in parts.

5.1 Macro-prudential objectives and supervision

These objectives are designed to limit the costs to the economy from financial distress, including those that arise from any moral hazard induced by the policies pursued. By limiting the likelihood of failure and corresponding costs, they can limit "systemic risk". [31]

5.1.1 The US

As an initiative of the US Department of Treasury [32], The Financial Stability Oversight Council (FSOC) is created and tasked with

(i) identifying risks to the financial stability of the United States,
(ii) promoting market discipline and information, notably by eliminating expectations that financial and non-financial organizations will be shielded from losses in the event of failure and
(iii) Responding to emerging systemic threats to financial stability.

The FSOC is chaired by the Secretary of the Treasury; the other nine voting members are the leaders of the main financial agencies, plus an independent member with insurance expertise. The Office of Financial Research (OFR) is created and established as a department within the Treasury. The Director of the OFR is in effect the executive director of the Council. The tasks of the FSOC extend into the micro-supervisory and resolution domains.

5.1.2 The EU

In the US structure the tasks of the FSOC extend into the micro-supervisory and resolution domains. Thus, the building blocks 1 and 3 are intertwined also from an institutional angle. The blurring of macro and micro mandates represents a clear difference with respect to the European approach.

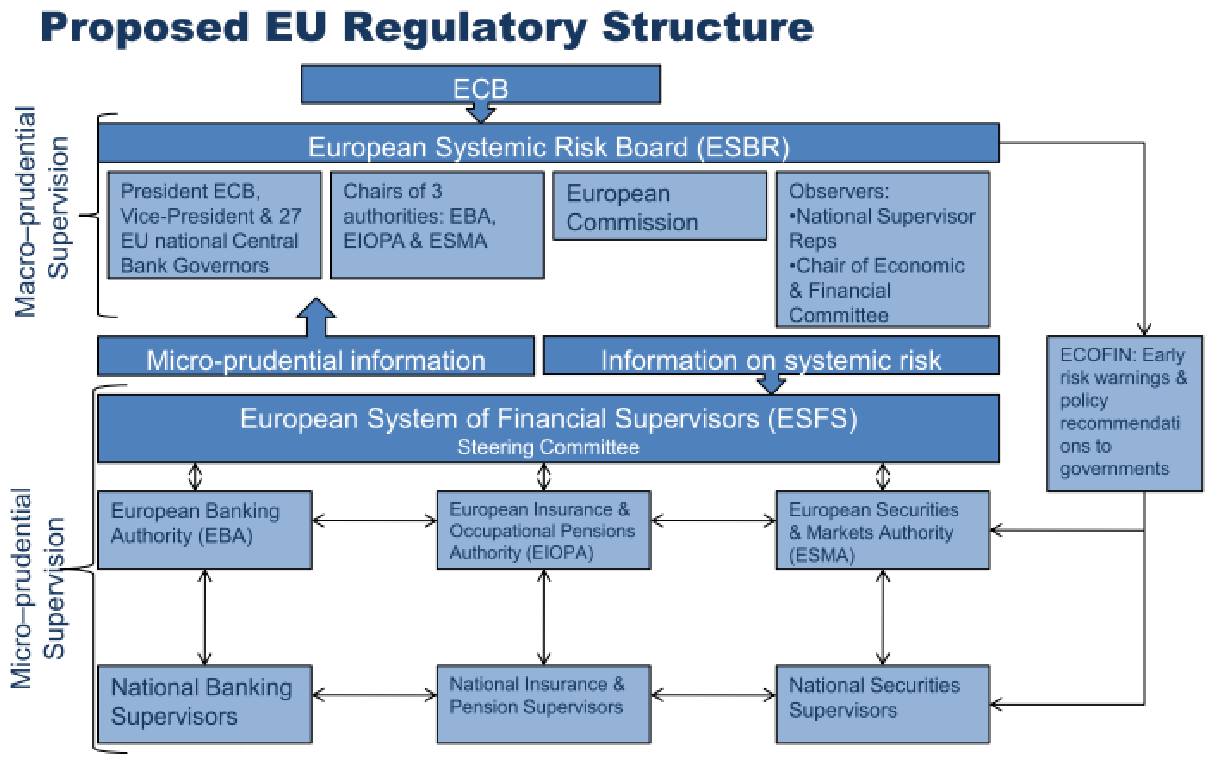

Figure 14 Proposed EU Regulatory Structure
Source: International Centre for Financial Regulation [33]

According to the ESRB Regulation: "The ESRB shall be responsible for the macro-prudential oversight of the financial system within the Union in order to contribute to the prevention or mitigation of systemic risks to financial stability in the Union that arise from developments within the financial system and taking into account macro-economic developments, so as to avoid periods of widespread financial distress. It shall contribute to the smooth functioning of the internal market and thereby ensure a sustainable contribution of the financial sector to economic growth."[34]

The European Systemic Risk Board (ESRB) is designed to ensure that macro-prudential and macroeconomic risks are detected and dealt with, issue public warnings if needed. Its main task is to collect and analyse relevant information from the financial system. The tasks also include identifying and prioritising the risk that can arise from the failure of one SIFI, but also by a common exposure of main financial institutions to the same risk factors.

The ESRB should also identify serious problems arising in a Member State, endangering EU financial stability. It needs to issue warnings and bring them to the attention of the chairman of the Economic and Financial Committee (EFC), so as to ensure, with the Commission, the Council and the European Financial Stability Facility (EFSF), appropriate strategies and actions to address the risks. It also needs to coordinate its actions with other international financial organisations like IMF and FSB.

The need for a Europe wide oversight body is warranted because of the recent European experience. Europe's banks and sovereign exposures are highly interconnected. Many market participants – including SIFIs – had assumed that an implicit guarantee protected the sovereign debt of EU Member States. This presumption led to a systematic under pricing of risk, which made debt cheaper to issue than it should have been [30]. The following figure shows the interconnectedness between various sovereign states in the EU.

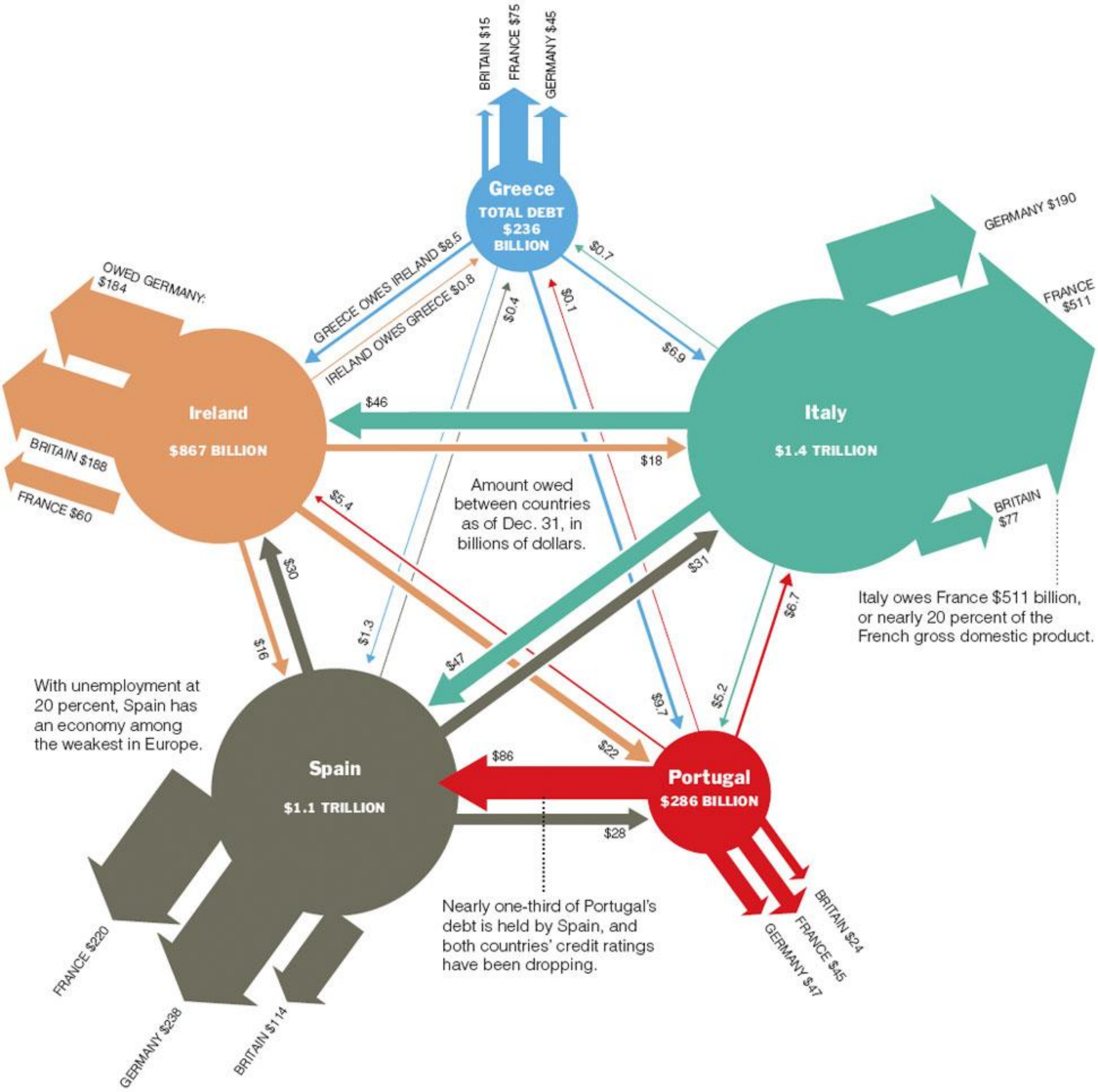

Figure 15 Interconnectedness between EU states
Source: New York Times

The ESRB shall have a General Board, composed of [34, 35]

- all the Governors of the national Central Banks in the EU,
- the President and the Vice-President of the European Central Bank (ECB),
- a Member of the European Commission (EC) and
- the Chairpersons of the three European Supervisory Authorities (European Banking Authorities (EBA), European Insurance and Occupational Pensions Authority (EIOPA) and European Securities and Markets Authority (ESMA).

5.2 Micro Prudential objectives

The micro-prudential objectives can be seen as limiting the likelihood of failure of individual institutions i.e. limiting "idiosyncratic risk". These objectives can take care of the interests of depositors. [31]

5.2.1 Capital Levels

Without exception, the quantity and quality of capital has been increased in the EU and the US. Although, the new definitions of capital reflect differences in regulatory standards, there have been attempts to harmonize the capital base within the EU, G-20 and elsewhere. The main aim of the new capital levels is that capital should reduce risk and absorb losses.

5.2.1.1 The US

Bank capital rules have been reformed in the US under the Dodd-Frank Act, notably through the Collins Amendment. It would require financial firms to have adequate amounts of cash and other liquid assets to survive similar financial crisis. Minimum leverage and risk-based capital requirements can be imposed by regulators on banks, bank holding companies and nonbank financial firms such as investment banks and private funds that are identified by the new Financial Stability Oversight Council (FSOC).

The provision brings bank holding companies and large nonbanks on the same platform as FDIC insured banks in terms of capital and risk standards. These standards target excessive leverage that could destabilize the financial system. The heightened standards for leverage and risk-based capital will act as a check to prevent financial companies from growing too large and risky and threatening the financial stability.

Minimum Leverage Capital and Risk-Based Capital Requirements[1] (Section 171 of Dodd Frank Act)

- Under the Collins Amendment [36], the appropriate Federal banking agencies are required to establish minimum leverage and risk-based capital requirements to apply to insured depository institutions, bank and thrift holding companies and systemically important nonbank financial companies.

- **Two Floors**. The minimum leverage capital and risk-based capital requirements applicable to these institutions are subject to two floors. They must be:
  - Not less than the generally applicable risk-based capital requirements and the generally applicable leverage capital requirements.
  - Not quantitatively lower than the above requirements that were in effect for insured depository institutions as of the date of enactment of the bill.

- **Generally Applicable Capital and Leverage Requirements**. The Collins Amendment defines "generally applicable risk-based capital requirements" and "generally applicable leverage capital requirements" to mean the risk-based capital requirements and minimum ratios of Tier1 capital to average total assets, respectively, established by the appropriate Federal banking agencies to apply to insured depository institutions under the prompt corrective action provisions of the Federal Deposit Insurance Act, regardless of total consolidated asset size or foreign financial exposure.

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[1] Summary of the amendment can be found at http://www.ibat.org/files/PDFs/COLLINSAMENDMENTSA3879%200510.pdf

- "Generally applicable risk-based capital requirements" is defined as the required ratio of regulatory capital components (numerator) divided by risk-weighted assets (denominator).

- "Generally applicable leverage capital requirements" is defined as the required ratio of regulatory capital components (numerator) divided by average total assets (denominator).

For bank holding companies and systemically important nonbank financial companies, exclusion of hybrid capital, such as trust preferred securities, from Tier 1 capital (issued before May 19, 2010) will be phased in from January 1, 2013 to January 1, 2016. After the transition periods, hybrid securities may be included only in Tier 2 capital, whereas the Federal Reserve currently allows bank holding companies to include some hybrid securities, subject to quantitative limits and other restrictions, in Tier 1 capital.

Leverage Ratio
A leverage ratio of 15:1 can be imposed by the Federal Reserve if a firm is deemed to be posing a "severe threat" to financial stability. It is a long-established standard and can be an implicit regulatory advantage for the US.

Financial Subsidiary Deductions
The Collins Amendment clarifies that the requirement applicable to national banks to deduct investments in subsidiaries that are engaged in financial activities does not apply at the holding company level or to systemically important nonbank financial companies, except, in the latter case, if so required by the Federal Reserve or primary financial regulator. This ensures that BHCs do not operate under capital standards that are less stringent than insured banks.

Relationship with Basel III
Collins Amendment envisages that future amendments to the leverage requirements or risk-based capital requirements, like that to be introduced in Basel III, established by the agencies may not result in capital requirements that are "quantitatively lower" than the generally applicable leverage or risk-based capital requirements in effect as of the date of enactment of the Act. As a result, the Collins Amendment will create a statutory floor and US banking regulators would be able to implement Basel III only to the extent it is consistent with the Collins Amendment floor.

5.2.1.1.1 Public Comments on US Capital Requirements

FDIC invited comments on 'Risk-Based Capital Standards: Advanced Capital Adequacy Framework--Basel II; Establishment of a Risk-Based Capital Floor'.[2]

"*The disqualification of trust preferreds from Tier 1 capital is consistent with the approach taken on capital in the Basel Committee's consultative paper called "Strengthening the Resilience of the Banking Sector and International Framework for Liquidity Risk Measurement, Standards and Monitoring" published December 2009. The paper states that the predominant form of Tier 1 capital should be common stock. This means that the use of certain European bank hybrids including junior subordinated debt with cumulative coupon deferral, which is similar to US trust preferreds, would be restricted. Taking this position seems intuitively correct because these types of securities have generally not proven to be loss absorbing during the financial crisis despite the coupon payment flexibility that they offer."* – Moody's on Collins Amendment [37]

[2] Comments can be accessed at http://www.fdic.gov/regulations/laws/federal/2010/10comDec30.html

"*Rather than require foreign banks to compute Basel I requirements or otherwise subject the foreign bank to the floors, the Board's evaluation of capital equivalency should, as under current practice, consider home country application of Basel II and Basel III, account for relative conservatism compared to similar US requirements, and determine whether resulting capitalization is comparable to US standards*." – Barclays Capital comment on FDIC's Advanced Capital Adequacy Framework.[38]

Institute of International Bankers expressed its confusion on the Dodd Frank Act being applied to foreign banks and believes that "*the proposed rule should not be applied in evaluating capital equivalency in the context of foreign banks' application to establish branches or make bank or non bank acquisitions in the United Sates, or in evaluating capital comparability in the context of their finance holding company (FHC) declaration*."[39]

The Toronto-Dominion Bank voiced the same concern and called the approach taken as unnecessary. Japanese Bankers Association called the application of proposal to foreign banks as directly contrary to Collins Amendment. It warned that if imposed the proposal would cause unnecessary and costly burden on foreign banks.

The Clearing House Association and Securities Industry and Financial Markets Association recognised that the leverage measure (in Collins Amendment) affects the regulation of US banks as compared to international banks more generally, and that currently there is no international leverage requirement and Basel III proposes an international leverage requirement for the first time. It pointed out - "*Depending upon how the Basel III standards are implemented in the United States (and, in particular, to which banks they apply or how they apply differently to different groupings of banks), the consequences are difficult to estimate*." [40]

Nationwide insurance expressed the difficulties faced by insurance companies in coming to terms with Collins Amendment. It commented that "*the insurance business model is not based on loan originations (like banks) but rather primarily upon liquid securities. Accordingly, the bankcentric RBC standards do not account for the liquidity benefits of insurance company assets in the form of a liquid securities portfolio*."

5.2.1.2 The EU

For Capital Requirements, the EU had incorporated the Basel II standards in the EU regulatory framework. It has also agreed to incorporate the Basel III accords, once they come into effect. The European Commission is revising the Capital Requirements Directive (CRD IV) to improve the quality, quantity of capital in the banking system, introduce capital buffers and promote counter-cyclical capital requirements. This is to ensure build up of capital during times of economic growth which may be withdrawn in adverse economic conditions.

Common Equity Risk-Based Capital
The minimum requirement for the common equity component of Tier 1 capital will be increased from 2% of risk-weighted assets under the current framework, measured before the application of capital deductions, to 4.5% of risk-weighted assets, measured after the application of the stricter capital deductions required under the Basel III framework. However, when combined with the capital conservation buffer (described below), the resulting common equity requirement under Basel III will be 7% of risk- weighted assets. The new minimum requirement for common equity will be phased-in beginning with a 3.5% requirement in January 2013 and increasing to 4.5% by January 2015. [41]

	Common Equity(after deductions)	Tier 1 capital	Total Capital
Minimum	4.5 %	6.0 %	8.0 %
Conservation Buffer	2.5 %		
Minimum + Conservation Buffer	7.0 %	8.5 %	10.5 %
Countercyclical Buffer Range	0-2.5 %		

Table 2: Calibration of the Capital Framework
Source: BIS [42]

Tier 1 risk-based capital
As can be seen from the above table, over the same transition period (i.e. 2013 to 2015), the minimum tier 1 capital requirement will increase from 4% of risk-weighted assets, as under the current framework, to 6% of risk-weighted assets using Basel III's narrower definition of Tier 1 capital.

Total risk-based capital
The minimum requirement for total capital under the Basel III framework remains unchanged at 8% of risk-weighted assets. Again, however, the 8% requirement must be satisfied using Basel III's more stringent definition of capital. There has been a 5 fold increase in total capital requirement when compared to 2% requirement in Basel II. Thus, when combined with the capital conservation buffer, the total capital requirement under Basel III is effectively 10.5%.

Capital Conservation Buffer
The capital conservation buffer, which must consist of common equity or other fully loss absorbing capital, is a capital cushion to be maintained above the Basel III minimum capital requirements that is intended to be available to absorb losses during times of financial stress. Under the Basel III framework, the capital conservation buffer will be set at 2.5% of risk-weighted assets. The purpose of countercyclical buffer, within a range of 0% - 2.5%, is to protect the banking sector from periods of excess aggregate credit growth. Depending on national circumstances, banks will be permitted to draw on the conservation buffer during periods of stress. As regulatory capital levels get closer to the minimum requirements (i.e., as the buffer is depleted), greater constraints on earnings distributions such as dividend payments and discretionary employee bonuses will be triggered. [41]

Leverage Ratio
The above capital requirements will be supplemented by a non-risked-based minimum tier 1 leverage ratio, which is being tested at 3%. The appropriateness of the 3% ratio (and the use in the numerator of Tier 1 capital as opposed to total capital or common equity) will be assessed during a parallel run period from 2013-2017, with the leverage ratio requirement not becoming final until 2018. [43]

5.2.1.2.1 Public Comments on EU Capital Requirements

Comments were invited to gather stakeholders' views on further possible changes to the Capital Requirements Directive.[3]

[3] Comments can be accessed at http://circa.europa.eu/Public/irc/markt/markt_consultations/library?l=/financial_services/requirements_directive_1/organisations_contributi&vm=detailed&sb=Title

Details of Capital Requirements can be found in Appendix 6.2.

European Banking Federation expressed its concern about the elimination of distinction between upper and lower Tier 2, and of eliminating Tier 3 capital in CRD – *"A substantial portion of our members capital currently comprises hybrid capital instruments that may or may not qualify as non-core Tier 1 in the future. We emphasise very strongly the need to properly consider the implications of the rapid withdrawal of noncore Tier 1 regulatory capital recognition from these instruments. We believe that there will likely be a need for a grandfathering period concerning such instruments after 2012."[44]*

BNP Paribas expressed its concern on CRD – "*We are very concerned by the general regulation towards national ring fencing and correlative challenge of the relevance and strength of cross border banking groups. This move appears to us totally at odds with globalisation of the world economy that has been the basis of growth for many years."[45]*

European Banking Federation expressed its doubts as "*How should the proposed rule be applied to foreign banks in evaluating capital equivalency in the context of applications to establish branches or make bank or nonbank acquisitions in the United States, and in evaluating capital comparability in the context of foreign bank FHC declarations?*" [46]

All the companies that submitted comments on CRD expressed their displeasure with the exclusion of Minority Interests and DTAs from regulatory capital. Companies have requested that exclusions should be limited and taken on a more targeted basis. Majority of the participants chose 'minority interests' as a prudential adjustment proposed to have the greatest impact.

The comment from Standard Chartered can summarise the concerns from all other companies "*increasing the quality, consistency and transparency of banks' capital is an appropriate objective, but the proposals focus on equity capital as the predominant form of regulatory capital and downplay the role of other forms of capital in absorbing losses during a crisis and in banking failures – the financial crisis has demonstrated that other forms of capital have an important role to play in banks' capital structures.*"

Austrian Raiffeisen Banking Group was harsher in the comments and said that – "*The mere simplification of the system is not necessarily an improvement. If capital instruments that contain elements of loss absorption in going concern due to profit based returns, are eliminated as Upper Tier 2, such elements will cease to exist in the future. As regard the stability of banks, this constitutes a disadvantage, rather than an advantage. The elimination of Tier 3 Capital is only possible, if Tier 2 is fully recognized, in particular, because currently surplus Tier 2 may be used as Tier 3*."

Companies also showed displeasure on 'one-fits-all' leverage ratio. Deutsche Bourse raised doubts in the information conveyed by leverage ratio by commenting that "*Business structures of credit institutions show a wide range of different business concepts related to customer basis (both in relation to client groups as well as client locations), product range, risk structure, capital basis, funding structure, etc. A generic leverage ratio will always have the need for thorough interpretation.*"

ING stressed that "*the concept of the leverage ratio is inherent inconsistent with the liquidity proposals; namely, a narrow buffer for eligible assets would require banks to buy eligible securities,* *thereby automatically increasing their leverage. Also in this respect, it is essential that supervisors and regulators cooperate and work together in analysing the impact of the leverage ratio*."

Goldman Sachs supported *"the need for a multi-year grandfathering period to allow firms to plan for and raise alternative sources of capital*." Euroclear also seemed to be in favour of sufficiently long grandfathering period "*to include outstanding instruments issued in the past, before supervisory intentions to revise the eligibility rules were known*."

5.2.1.3 Analysis and comparison

The capital requirements aim at the way assets are funded on balance sheet. As all regulatory bodies identify leverage of balance sheet as the main culprit of systemic risks, they have enhanced the equity requirements on the liability side of balance sheet.

According to the new standards, banks will be required to deduct most assets with low absorption capacity (goodwill, minority interests, investments in unconsolidated subsidiaries, and the value of DTA[4]s, MSRs[5], and other intangible assets) from the common equity component of capital, which will improve the quality of capital.

There is common concern that the capital requirements, under the current tax structure, would make it expensive for banks to fund assets with capital. The increased costs are expected to be passed on to the borrowers, thereby signalling a slowdown in investment activity.

"Every 1% increase in bank capital = 0.19% lost in GDP" – BIS [47], [48]

However, equity can be added to the balance sheet without affecting the core business. This merely changes the capital structure and defines how risk is distributed but not the overall cost of funding. Increased equity requirements would reduce the ROE but at the same time reduce the risk for the shareholders without changing the value of equity[49]. Reduced risk would lower the cost of capital and thereby help the banks.

Analysis by McKinsey shows that "before any mitigating actions by banks, the pre-tax ROE of European banks would decrease by between 3.7 and 4.3 percentage points from the pre-crisis level of 15 percent."[50]

Another common concern is that increased equity requirements would decrease the size of the interest tax shields banks can obtain through debt financing. This should not be a concern as the social benefit of avoiding the systemic risk is much higher than the cost of subsidizing leverage (or debt) to some institutions.

The companies are reasonable in their worries of exclusion of minority interests. Most banks have operations in countries outside the jurisdiction of home base. Some countries, especially the developing countries, require joint ventures with the local players to enter into the market. This provision will limit their participation in emerging markets.

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[4] Defered Tax Assets

[5] Mortgage Servicing Rights - A contractual agreement where the right, or rights, to service an existing mortgage are sold by the original lender to another party who specializes in the various functions of servicing mortgages. (www.investopedia.com)

Some institutions have doubts on the lack of comprehensibility of some regulations and expressed concern on the implementation of these regulations. The concerns mainly lie in comprehending the extra territorial nature of regulations in the US and the EU.

Basel II is still in the consultation phase in US and the next steps to be taken in relationship with Basel II are still under discussion. This poses a problem for foreign banks that have operations in the EU and have to deal with more stringent norms under upcoming Basel III.

Foreign institutions with interests in the US have called Collins Amendment an unnecessary and costly burden on foreign banks and their parent organizations.

The baton of improved capital and liquidity requirements is being carried by the global Basel Committee of central bankers and supervisors which is toughening up its global accord as requested by the G20 to take effect from the end of 2012. The reason behind global approach for new capital and liquidity requirements is that most of the big banks have global operations and it makes complete sense to avoid regulatory arbitrage by coordinating in developing new regulations.

The US Senate directed the regulators to increase capital requirements on large financial firms as they grow in size or engage in riskier activities [51]. Also The EU approved new rules to beef up capital on trading books and allow supervisors to slap extra capital requirements if remuneration is encouraging excessively risky behaviour.

One difference between US and EU regulations is with respect to the maximum leverage ratio, which is absent in the Basel II framework.

It is apparent that EU has been more willing than United States in past to adopt Basel rules.

Investment banks are impacted the most by the regulation on market risk weights (given the significant share of trading and securitization in their business mix), followed by universal banks, which also carry out investment bank type activities.

A study by IMF on the impact of regulations on large institutions shows that the proposals would affect more significantly the investment and universal banks, reducing the differences across core capital ratios for different business models. The study found out that in North America, the drop in core capital would reflect the significant impact of increased market RWA, while in Europe the most significant impact would come from asset deductions (given the large concentration of universal banks with significant subsidiaries in the region and involvement in bank-insurance businesses). [52]

The phased implementation of the BCBS proposals should allow most banks sufficient time to close the capital gap through earnings retention. The capacity of banks to meet the capital requirements will thus depend on their starting level of capitalization, and their ability to rebuild capital through earnings retention or acquire fresh capital. [52]

5.2.2 Liquidity and Liquidity Risk Management

The aim of these measures is to permit the bank to withstand a run on the bank not linked to the bank's own solvency. Liquidity coverage and stable funding ratios are part of national supervisory standards. Standard monitoring tools streamline supervisory challenges.

5.2.2.1 The US

The US, through Dodd Frank Act, aims to undertake the new liquidity risk management practices. In general, it extends the regulation to Nonbank Holding Companies. The Council is authorized to require, with a 2/3 vote and vote of the chair, that a nonbank financial company be regulated by the Federal Reserve if the council (FSOC) believe there would be negative effects on the financial system if the company failed or its activities would pose a risk to the financial stability of the US. Other than this Dodd Frank Act does not explicitly deal with the issue of liquidity management.

5.2.2.2 The EU

The EU has tackled this issue with Capital Requirement Directive (CRD IV) where it deals with short term liquidity, long term liquidity and regulatory monitoring of funding, concentration and liquidity.

According to the regulators, prior to the crisis, liquidity did not receive sufficient management and supervisory attention. The crisis illustrated how quickly and severely liquidity risks can materialise for credit institutions and investment firms of all sizes. It is not sufficient to rely on national approaches - where they exist - or to focus exclusively on a few large banks: the integration of the European banking system is already well advanced and even medium-sized banks have significant activities in other Member States. [53]

According to the current rules of the Capital Requirements Directive (CRD), host supervisors retain responsibility for the liquidity of branches until further harmonisation is achieved. The Commission recognises that host supervisors need to be better involved in the supervision of branches and have access to the necessary information. The national supervisors are required to observe the baseline global standards i.e. those in Basel III. [53]

Liquidity Coverage Ratio
This new regulatory ratio aims to ensure adequate liquidity in the event of another market dislocation. It is meant to require a bank to maintain an adequate level of “unencumbered, high quality assets that can be converted into cash to meet its liquidity needs for a 30 day time horizon under an acute liquidity stress scenario”. The ratio is defined as [54]:

(stock of high quality liquid assets) / (net cash outflows over a 30 day time period), with a minimum of 100%.

Under the proposals banks must hold liquid assets:

- Equal to 5% of the undrawn portion of committed credit and liquidity facilities to retail customers and SMEs. (This has been reduced from the 10% which was proposed in the December 2009 liquidity consultation.)

- Equal to 10% of the undrawn portion of committed credit facilities to sovereigns, central banks, public sector entities, non-financial corporate and multilateral development banks(Sovereigns, central banks and public sector entities were treated as "other legal entity customers" in the December 2009 liquidity consultation. That is, it was proposed that liquid assets equal to 100% of the undrawn portion of committed credit facilities made to them would need to be held.)

- Equal to 100% of the undrawn portion of liquidity facilities to sovereigns, central banks, public sector entities and non-financial corporates (including SMEs).

- 100% of currently undrawn on committed credit and liquidity facilities to other legal entities like financial institutions (including banks, securities firms, and insurance companies), conduits and special purpose vehicles, fiduciaries, beneficiaries, and other entities not included in the prior categories.

Net stable funding ratio
This new regulatory ratio aims to "promote more medium and long-term funding of the assets and activities of banking organisations". It is defined as [54]:

(available amount of stable funding) / (required amount of stable funding) with a minimum of 100%

Available stable funding (ASF) is defined as the total amount of a bank's (i) capital, (ii) preferred stock with a maturity of one year or more, (iii) liabilities with effective maturities of one year or more, and (iv) that portion of "stable" non-maturity deposits and/or term deposits with maturities of less than one year that would be expected to stay with the bank for an extended period in an idiosyncratic stress event; and

the ASF factors range from 100% to 0%, with the more stable funding sources having higher ASF factors (and, accordingly, contributing more to meeting the minimum 100% requirement). For example, Tier 1 Capital and Tier 2 Capital are assigned 100% ASF factors, "stable" retail deposits an 85% ASF factor, "less stable" retail deposits a 70% ASF factor, certain wholesale funding and deposits of non-financial corporate customers a 50% ASF factor, and other liabilities and equity categories a 0% ASF factor.

The required amount of stable funding(RSF) is calculated as the sum of the value of assets held, after converting certain off-balance sheet exposures to asset equivalents, multiplied by a specified RSF factor;

the RSF factors range from 0% to 100%, with assets requiring a less stable funding source having lower RSF factors (and, accordingly, contributing more to meeting the minimum 100% requirement). For example, cash and money market instruments are assigned a 0% RSF factor, unencumbered marketable securities with maturities of one year or more and representing claims on sovereigns a 5% RSF factor, unencumbered AA corporate bonds with maturities of one year or more a 20% RSF factor, gold a 50% RSF factor, loans to retail clients having a maturity of less than one year an 85% RSF factor, and all other assets a 100% RSF factor.

Monitoring Tools

The liquidity proposals outline four monitoring tools, or 'metrics', which are described, together with the ratios described above, as being intended to "provide the cornerstone of information which aid supervisors in assessing the liquidity risk of a bank." The metrics address[54]:

- contractual maturity mismatch;
- concentration of funding;
- available unencumbered assets; and
- market-related monitoring tools

5.2.2.3 Public Comments on EU Liquidity Requirements, Analysis and Comparison

Industry estimates, covering a limited set of US and European banks, suggest that most banks would meet the LCR criteria, and for banks that do not yet meet the criteria, the liquidity gap may be limited and manageable.[52]

The study by IMF concludes that "European banks would be most affected by the NSFR requirement (in part reflecting greater reliance on wholesale funding and high loan-to-deposit ratios). Most North American banks already meet the 100 percent NSFR criterion. The average NSFR is 89 percent for European banks and 127 percent for North American banks, compared to the 100 percent requirement under the Basel proposals. Compared to other banks, North American banks, on average, have a high share of securities on the asset side, and above average share of deposits."[52]

Analysis by McKinsey shows that, "assuming the same balance-sheet structure as before, the short-term liquidity shortfall would increase from €1.3 trillion to €1.7 trillion and the shortfall in long-term funding would increase from €2.3 trillion to €3.4 trillion."[50]

Following concerns arise as banks try to meet new regulatory standards[52]:

- **Higher funding costs**
  Banks globally need to rollover a large amount of debt in the coming years, which is likely to put upward pressure on borrowing costs for banks, thereby making it costlier to issue term debt. Banks' refinancing and balance sheet restructuring efforts could face competition from heavy government and corporate debt issuance.

  McKinsey predicts that short term retails loans would see an increase in cost of 70 basis points due the combined effect of higher risk weights, higher liquidity and long-term funding needs. Higher funding costs may arise for corporate loans and commercial real estate as well. [55]

- **Risk management**
  Global banks may find it hard to move excess liquidity within the banking group as tighter liquidity requirements demand greater decentralisation. Also, in jurisdictions where banks manage their liquidity risks by holding liquid assets other than government bonds, banks' liquidity risk profiles may be affected by the LCR that treats such assets less favourably than government securities. Accordingly, institutions will have to adjust the pricing of risks. Pricing of liquidity facilities to other banks and insurances can become expensive.

To improve their funding profiles and meet the NSFR requirement, banks could change their funding mix (by issuing term funding and/or raising more customer deposits) and/or reduce their assets. It is likely that banks will adopt a combination of the three options in meeting the requirements[56]:

1) Optimised Deposit Gathering: Attempts to fill the funding shortfall with deposits would be a challenge given competition in local deposit markets and difficulties associated with building branch networks. Efforts will have to be made to stabilise deposit base rather than competing on price.

2) Secured Funding Instruments: Changing the maturity structure toward long-term debt will require banks to pay the term premium. Banks need to reduce their reliance on unsecured funding. Covered bonds and standardized securitizations can play greater role in future.

3) Stronger Investor Coverage: Shrinking assets may be costly in terms of foregone market share and profitability. In order to gain access to unsecured funds, banks will need to provide more transparency to investors and broaden the investor base.

The ultimate choice of the funding mix will likely depend on individual circumstances and ongoing market conditions. [52]

Comments were received on liquidity requirements from various market participants.[6]

Some market participants have expressed concerns and lack of clarity on the risk weights assigned to different maturity instruments and also the instruments used for funding (especially covered bonds by mortgage lenders). Many have called the definition of liquid assets to be too strict. They have asked for particular attention to the criteria for differentiating between stable retail deposits (7.5%) and less stable deposits (15%), by calling the definition ambiguous.

Luxembourg Bankers' Association commented– "*We think that the mortgage (or public sector) lenders using Covered Bonds as funding instruments. Mortgage lenders using Covered Bonds as funding instruments will be at a disadvantage, as the LCR does not take into account that covered bonds issued by mortgage and public sector lenders obtain excellent ratings by rating agencies, i.e. triple-A or high ratings in the double-A bracket. These ratings are due to the coherence between the lending and funding activities of the banks.*"

Many institutions expressed displeasure on the exclusion of corporate debt, senior debt issued by states and other high credit rating securitization bonds from the liquid asset.

HSBC opines that "*additional asset classes demonstrate sufficient liquidity characteristics to justify including them as 'liquid'. Consideration should therefore be given to: securities issued by supra-nationals, high quality covered bonds and corporate debt, mortgage backed securities issued by government-sponsored entities and certain privately issued securities. Appropriate haircuts and concentration caps should be applied*."

Commenting on LCR, HSBC says that "*it is unclear from the proposal whether a bank can utilise the liquid assets within the buffer during a period of either idiosyncratic or market-wide liquidity stress. The requirement to maintain the LCR of at least a 100% at all times suggests a bank cannot utilise the liquid assets contained in the buffer to meet cash outflow obligations during a time of stress, which is clearly at odds with the purpose of maintaining the liquid asset buffer*."

Austrian Federal Economic Chamber thinks that retail banks would be unfairly hurt by the new regulations being applicable to all the banks - *"Retail deposits were among the few reliable sources of liquidity during the crisis. As customers moved from more risky products to deposit products, this source of liquidity even increased during the crisis. It therefore does not seem justified for the measures proposed by BCBS and the Commission and the concept of the proposed liquidity ratio to interfere with business models that are based on taking in customer funds and granting loans to the*

[6] Comments can be accessed at http://circa.europa.eu/Public/irc/markt/markt_consultations/library?l=/financial_services/requirements_directive_1/organisations_contributi&vm=detailed&sb=Title

real economy. We emphatically recommend that any liquidity regulation should be designed in keeping with the principles of adequacy and balance given the variety of business models and the associated range of different liquidity profiles, particularly with regard to business models, which largely involves financing the real economy."

5.2.2.4 Author's Opinion

The regulators have done a good job in ensuring that banks give more importance to equity, long term funding and keep leverage in manageable limits. Also the transition period will allow the financial institutions to restructure their balance sheets and business models to satisfy the new requirements. Banks will be able to adapt over the transition period by retaining earnings, issuing equity and adjusting their liability structure. Furthermore, the regulatory bodies would be able to see the effects of new regulations on the market players as they follow the guidelines.

Many institutions are correct in saying that the market for bank and corporate bonds would not be liquid as the bond matures, especially in medium and long term, as they would no longer be eligible for liquidity buffers. The same has been expressed as a concern by many banks. Also a part of the debt maturing in the coming years is government-guaranteed and will likely be refinanced at a higher cost as authorities wind-down monetary policy support measures.

This seems to be quite deliberate from the governments as this would bring more buying of government bonds. Governments need money to finance their expenditures and come out of the crisis. At the moment this step assures the market of having liquid and stable investment possibilities.

But in the long run, the assurance is misguided as this artificial demand of government debt would bring in price anomalies and work against the corporations. Here the big assumption is that sovereign bonds are totally risk free and all the countries are equally capable of servicing their debt.

This shows that we might be moving from a market instrument/asset crisis to a sovereign debt crisis as governments take more debt burden away from the market.

5.2.3 Derivatives Legislation

This objective deals with derivatives trading, clearing, settlement, and organization which include swaps and derivatives trading rules in the OTC markets. With respect to securitization transactions differentiated risk weighting and quantitative retention rules were introduced.

5.2.3.1 The US

Title VII of the Dodd Frank Act sets forth the new legislative framework for derivatives.

❖ ***Swaps and Security Based Swaps***

The Act divides the derivatives universe in two broad categories:

- **Swaps**

  The term "swap" is defined broadly and includes options, swaps and other transactions based on rates, currencies, commodities, securities, debt instruments, indices, quantitative measures and other financial or economic interests, subject to certain exceptions. The Act brings previously unregulated derivatives into the new framework. Swaps are subject to CFTC jurisdiction. Swaps do not include security-based swaps, as discussed below.

- **Security-Based Swaps**

"Security-based swaps" are swaps based on individual securities or loans, on narrow-based securities indices, or on events relating to individual issuers of securities or issuers of securities in a narrow-based securities index. Security-based swaps are subject to SEC jurisdiction.[57]

❖ ***Clearing and Trade Execution*** (sec. 725 Dodd Frank Act)

SEC calls the current OTC market of security based swaps opaque and wants to bring the pre-trade and post-trade information transparency. These efforts, to require central clearing and exchange trading for many derivative transactions, are aimed at reducing systemic risk and increasing market transparency.

➢ **Mandatory Clearing**

The Act contemplates that the CFTC and SEC will, on an ongoing basis, review swaps and categories or classes of swaps with a view to determining whether clearing should be required. Factors to be considered include:

- the existence of significant outstanding exposures,
- trading liquidity
- availability of appropriate operational expertise and resources.

The Act calls on the CFTC and SEC to adopt rules that fulfil the following purposes:

- define possible ownership and control limitations,
- mitigate conflicts of interest that may arise with respect to ownership of regulated clearing and trading facilities by bank holding companies, certain non-bank financial institutions, swap dealers and major swap participants.

➢ **Trade Execution**

Swaps that are required to be cleared must be executed on a designated contract market, securities exchange or swap execution facility, unless no such institution makes the transaction available to trade.

❖ ***Regulatory Requirements for Swap Dealers and Major Swap Participants***(sec.731 Dodd Frank Act)

Swap dealers and major swap participants will be subject to a range of new registration, recordkeeping, documentation, conflicts of interest management and other requirements.

➢ **Capital and Margin Requirements**

These entities' swaps activities will be subject to capital requirements and, with respect to non-cleared swaps, to initial and variation margin requirements. The requirements should reflect the risks associated with the non-cleared swaps.

➢ **Business Conduct Standards**

The CFTC and SEC need to establish duties for swap dealers and major swap participants to verify their counterparties' status as eligible contract participants, to disclose material risks and characteristics of transactions, to disclose any "material incentives or conflicts of interest" they may have with respect to a transaction, and to communicate with their counterparties" in a fair and balanced manner based on principles of fair dealing and good faith." In addition, the CFTC and SEC are given broad authority to enact additional rules relating to fraud, manipulation, abusive practices and other matters.

- ***Swaps "Pushout" Provision***

If a financial institution is determined to be a swaps entity, it is not entitled to advances from the Federal Reserve or insurance from the FDIC. Financial institutions are effectively required to push-out their swaps business to affiliates to retain the federal benefits.

- ***Segregation of Collateral***

Persons accepting collateral in connection with swaps transactions must be registered with the CFTC or SEC, either as futures commission merchants with respect to swaps or as a broker-dealer or security-based swap dealer with respect to security-based swaps. Collateral for cleared swaps must be treated as belonging to the customer and may not be commingled, except in accounts with bank or trust companies or with a clearing organization and in connection with the application for settlement or margining in the ordinary course. [58]

- ***Reporting of Swap Transactions and Pricing Data***

Requiring real-time public reporting of transaction data, including price and volume, seems to be fundamental to better regulation for swaps that are required to be cleared or which are cleared on a voluntary basis. [59]

- ***International Aspects***

The Act provides that the provisions regarding swaps will not apply to activities outside the United States unless those activities have a direct and significant connection with activities in, or an effect on, US commerce or contravene rules promulgated by the CFTC to prevent evasion. [58]

5.2.3.1.1 Public Comments on Derivative Regulation of Dodd Frank Act

Comments were invited on Title VII of Dodd Frank Act. [7]

Morgan Stanley expressed its worries on mandatory clearing by saying that "*if an OTC derivative product is subject to mandatory clearing, market participants will be required to connect to the clearinghouse(s) that are able to clear that product. Vast majority of clients do not yet have the systems or processes, or the connectivity to dealers and clearinghouses, in place to enable them to clear OTC derivatives*." It is worried about the time frame in which this mandatory clearing can start to work efficiently, as not all market participants and products can be brought to clearinghouses at the same time. Also setting up of clearing houses will take time. It recommends phasing in clearing requirements across different asset classes. Managed Funds Association seconds this view.

Companies and association have welcomed the regulatory effort to increase transparency in the markets. Benchmark Solutions recommends establishment of a comprehensive source of standardized reference data to enable users of the trade price dissemination service to accurately assess reported values.

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[7] Comments can be accessed at http://www.sec.gov/comments/df-title-vii/swap-data-repositories/swap-data-repositories.shtml#comments
&
http://www.sec.gov/comments/s7-35-10/s73510.shtml

Coalition of Derivative End Users puts its point forward by commenting that "*OTC derivatives provide companies with access to lower cost capital and protect against risk. In promoting market stability, central clearing, transparency and oversight, it is critical that policymakers preserve the ability of companies to manage their individual risk exposures by ensuring access to reasonably-priced OTC derivative products*." It wants provisions that fully protect end-users from clearing, margining, and exchange-trading requirements that do not discourage them from pursuing responsible risk-mitigation strategies.

The Depository Trust & Clearing Corporation (DTCC) supported the regulatory framework that allows Swap Data Repository (SDR) to be a single source for regulators' market data. While Benchmark Solutions, along with DTCC have offered their advice on the information that SDR should provide, Morgan Stanley seems to be comfortable with phase in approach. It wants that authorities take time to learn what to report and how to report without affecting liquidity.

Markit commented that "*while data required for public reporting should be available for such use, any use of other data or commercialization of data should only be done with the specific consent of the data owners. It recommends that the Commission require such data to be made available on 'air and reasonable', and not unduly discriminatory commercial terms*."

Many banks submitted a joint comment to these provisions. These include Bank of America Merrill Lynch, Barclays Capital, UBS Securities LLC, Wells Fargo & Company and many more. They have urged the authorities to clearly define the SEFs (Swap Execution Facilities) and differentiate them from 'trading facility' or 'exchanges'. They also want clarity on the registration requirements on SEFs, especially on the term 'multiple executions'. Emphasising on having collaborative procedures for registration of SEFs, they commented that "*what is appropriate for an individual SEF should be evaluated based on the characteristics of the SEF's execution model. SEFs should be permitted to outsource the relevant monitoring and reporting activities to appropriately qualified organizations, while retaining responsibility for their due performance*."

5.2.3.2 The EU

On September 15, 2010, the European Commission published a proposal for new EU regulations covering OTC derivatives, central counterparties and trade repositories, known as the European Market Infrastructure Regulation (the "EMIR"). The EMIR, when enacted, will be directly applicable in all EU member states so that there should generally be no inconsistencies in implementation or interpretation as between member states.[60]

- ***Clearing, reporting and risk mitigation of OTC Derivatives***

It is central to implementing the obligation to clear all 'standardised OTC derivatives' as agreed in the G-20. 'Standardised' contracts, meaning those contracts that are eligible for clearing by CCPs, will help to reduce the risk in the financial system. The Regulation establishes a process that will take into account the risk aspects connected to mandatory clearing. [61]

Counterparties that are subjected to the clearing obligation cannot simply avoid the requirement by deciding not to participate in a CCP. If those counterparties do not meet the participation requirements or are not interested in becoming clearing members, they must enter into the necessary arrangements with clearing members to access the CCP as clients. CCP that has been authorised to clear eligible derivative contracts is required to accept clearing contracts on a non-discriminatory basis, regardless of the venue of execution. [62]

The clearing obligation will only apply to those OTC contracts of non-financial counterparties that are particularly active in the OTC derivatives market and if this is not a direct consequence of their commercial activity. The reasons behind including non-financial parties include [62]:

- Non-financial counterparties are active participants in the OTC derivatives market and often transact with financial counterparties.
- Some non-financial counterparties may take systemically important positions in OTC derivatives.
- a full exclusion of non-financial counterparties could lead to regulatory arbitrage
- Their inclusion in the scope of application is also necessary to ensure global convergence with third countries.

❖ *Authorisation and supervision of CCPs*

To ensure that CCPs established in the European Union are safe, the authorisation of a CCP will be subject to that CCP having access to adequate liquidity. Such liquidity could result from access to central bank or to creditworthy and reliable commercial bank liquidity, or a combination of both.

The recognition of third party CCP by ESMA will require that the Commission has ascertained the legal and supervisory framework of that third country as equivalent to the EU one, that the CCP is authorised and subject to effective supervision in that third country and ESMA has established co-operation arrangements with the third country competent authorities. A CCP of a third country will not be allowed to perform activities and services in the Union, if these conditions are not met. [63]

❖ *Prudential Requirements for CCPs* [63]

Minimum quantum of capital must be required for authorisation to exercise the activities of a CCP. A CCP's own capital is also its last line of defence in the event of the default of one or more members, after the margins collected from the defaulting member(s), the default fund and any other financial resources have been exhausted. If a CCP decides to use part of its capital as an additional financial resource to be used for risk management purposes, then this portion must be in addition to the capital needed to perform the services and activities of a CCP on an on-going basis.

The Regulation will require a CCP to have a mutualised **default fund** to which members of the CCP will have to contribute. A default fund enables loss-mutualisation and thus represents an additional line of defence that a CCP can use in case of the insolvency of one or more of its members.

The Regulation also introduces important rules on segregation and portability of positions and corresponding collateral. These are critical to effectively reduce counterparty credit risk through the use of CCPs, to achieve a level playing field among European CCPs and to protect the legitimate interests of clients of clearing members. This responds to a call by clearing members and their clients for greater harmonisation and protection in this field. It also responds to the issues highlighted by Lehman's demise.

❖ *Registration and surveillance of trade repositories*

The Regulation provides for a reporting requirement of OTC derivative transactions to increase the transparency of this market. The information must be reported to **trade repositories**. The latter will therefore hold regulatory information which will be relevant for a number of regulators. [63]

EU has opted for a central surveillance organisation (ESMA) for trade repositories instead of many national surveillance authorities. The reasons cited are avoidance of friction between national authorities and envisaging an EU wide counterparty to deal with third countries trade repositories.

5.2.3.2.1 Public Comments on EU regulations on Derivatives

Lot of financial institutions submitted their comments on 'derivatives and market infrastructure'. The analysis includes comments from companies only. The reason for exclusion of associations is that they are composed of professionals who voice comments similar to that submitted by the companies.

Clearing and risk mitigation of OTC derivatives seems to be the main aim of regulatory bodies. Companies have no problems in embracing central clearing and called it as a means of reducing systemic risk. Clearing of OTC derivative contracts should be encouraged where feasible. At the same time companies voiced the limitations of the approach as not all derivative contracts should be subject to mandatory clearing.[8]

BNP Paribas suggested that "*requirements for OTC derivatives to be cleared via a CCP should be determined on an eligibility basis and should not be mandatory for any OTC derivatives. For risk management reasons, parties should have the freedom to bilaterally transact outside a CCP, even at a less favourable prudential treatment."*

Cinnober called the "*clearing industry conservative and in general possessing old, inflexible technology which may restrict expansion of the range of contracts which are able to be cleared. The authorities should therefore not judge what is possible to be cleared solely by what CCPs' current systems are capable of processing*."

Reflecting the view from the stock exchanges Deusche Börse Group commented that "*In OTC derivatives markets, where trading could occur over multiple venues, it is important for a CCP to conduct an analysis of risks, costs and benefits from accepting and clearing trades that are executed or processed at different venues before accepting trades from such venues."*

Deutsche Bank identified the following "*implications of putting everything on exchange*:

(a) Liquidity cannot be forced to go where it does not want to. Market participants would not be able to put on, or take off, large positions hence it would have a detrimental impact on liquidity;
(b) Institutional participants have different liquidity needs to retail investors; and
(c) There are no additional systemic risk benefits."

Companies want the bilateral OTC derivative contracts to be active. ICAP believes that a "*sizeable minority of contracts will not be suitable for centralised clearing. In particular end users will continue to need tailored/illiquid derivatives to hedge specific economic risks*."

Intesa San Paolo commented that "*in the absence of central clearing bilateral clearing has to be strengthened by applying electronic contracts' confirmation and with robust processes to monitor the value of outstanding contracts, portfolio reconciliation, mark to market valuation and dispute resolution systems."*

[8] Comments can be accessed at http://circa.europa.eu/Public/irc/markt/markt_consultations/library?l=/financial_services/infrastructures/registered_organisations&vm=detailed&sb=Title

Companies also seem to be troubled by the requirement of obligatory bilateral collateralization. MAN called it an "*inappropriate instrument and said it would cause substantial administrative burdens and counterparty risks would only be shifted, not mitigated*." On the same lines Societe General commented that "*any corporate should not be obliged to exchange collateral on its bilateral derivative contracts, except if it decides to do so together with the counterparty it enters the transaction with."*

BNP Paribas reasoned - "*mandatory collateralisation is not a market practice, and it could have unintended consequences such as deterring non financial institutions from using derivatives for hedging purposes or putting the financial situation of a corporate user at risk with unexpected increase in margin calls. Furthermore, a lot of contracts are currently not marked to market today."*

BVI Bundesverband Investment und Asset Management e.V. believes - "*it is essential to have account segregation for client/buyside collateral and positions for the clearing member in order to reap the benefits of CCP clearing.*" Although all the companies cherish the requirements of segregation and portability, BNP Paribas acknowledges *that "a difference should be made between clearing members of CCPs dealing with cash equity products, repos and bonds, and OTC derivatives products.*"

On the other hand Societe General stressed the fact that "*segregation and portability seems useless and counterproductive for cash equities CCPs as, given the very high number of trades, they would (1) reduce the netting effect associated to the central clearing (transactions would be registered on a gross basis) and (2) drastically increase the complexity of the settlement processes (including back-office operations) encouraging risks of fails (non-delivery of the securities). We think therefore that segregation and portability should be encouraged in the context of OTC derivatives only*."

While banks have welcomed the idea of substantial initial capital for CCPs, other companies like inter brokers, exchanges have different opinions. Bank of America Merrill Lynch called the "*provision of initial margin and variation margin critical."* It wants the amount of initial capital to be a function of the risk that the CCP is managing. It agrees that default fund should be mandatory. BNP Paribas wants the CCPs to be "*subject to the same standards as banks capital requirements on its activities. It wants the initial capital to be computed on the basis of the Pillar I (for operational, market and credit risk) and Pillar II requirement deriving from the Basel II framework. Banking supervisors should also have the ability to supervise CCPs on a daily basis and with the appropriate monitoring and auditing tools together with ESMA*."

BVI reasoned that "*the investment fund management companies are prohibited by law from using the assets of one investment fund for paying the liabilities of another investment fund. Therefore, a CCP should have access to a central bank facility/liquidity in case the financial resources of the central counterparty (e.g. margin requirements, initial capital, default fund) are not sufficient to meet the obligations arising from defaults of clearing members."*

Cinnober wants the technology to help *"to value both risk positions and collateral in real time and have the ability to immediately call for additional collateral or prevent further trade entry whenever the position is under collateralised."*

Intesa San Paulo wants the CCPs authorized to operate in the EU to have same prudential requirements across the EU. In its view "*CCPs should not be allowed to compete against each other on risk grounds*."

Comments were also received on 'reporting obligation and on how to ensure regulators' access to information with trade repositories'.

ICAP commented that "*OTC derivatives market is a global market where institutions from all over the world trade with each other, as a consequence the optimal model for Trade Repositories needs to be global to provide regulators with information in an optimal and comprehensive way*."

Deutsche Bank is of the view that "*data availability will depend on asset class and product, i.e. trade repositories should make aggregated, anonymous, information related to contracts registered with them publicly available but not necessarily by end of the day.*"

Societe General believes that "*trade repositories need to have on record all open derivative contracts in order to ensure that regulators have the most comprehensive information possible*."

Deutsche Börse Group has a different view on trade repositories. It reflects the view of exchanges on this matter. "*For OTC derivatives that are cleared by a CCP, the CCP provides the function of a data repository and there should be no additional requirement either on counterparties to report contracts to a repository, or for the CCP to report positions to a repository. EU location of trade repositories is important to ensure EU regulator / supervisor access to necessary data in all situations and can increase legal and regulatory certainty, ensuring the risk mitigation, and data quality, and transparency objectives of trade repositories are fulfilled.*"

5.2.3.3 Analysis and comparison

Despite the similarity in overall approach, there will likely remain certain differences in the regulatory approaches taken in the US and EU. This may lead to the possibility of regulatory arbitrage. In addition, both sets of regulations may have extraterritorial effects, and it is possible that in some cases market participants may be caught by conflicting or inconsistent requirements.[60]

It can be seen that both the US and the EU have gone for mandatory clearing for standardized contracts. This is cherished by most market participants as it reduces the cost burden on the banks and brings in transparency in transactions along with liquidity. Also they can relieve themselves of the credit risk/exposure as CCPs will be able to take it.

On the other hand, banks will have to come out of their comfort zone of 'no margin calls' and 'no mandatory collateralisation' in OTC trades. Now CCPs can issue margin calls and as result banks will have to manage cash flow volatility in an efficient manner. As some banks have reasoned, CCPs will eliminate bilateral cross-product netting efficiencies. This is going to hurt liquidity and increase capital requirements.

There are more differences than similarities between the US approach and the EU approach. Due to the 'union nature' of Europe, EU member states have flexibility to determine the powers of their national regulatory authorities and regulation will take place at the national level (under ESMA oversight). This is different from the US where Fed Reserve remains the sole watchdog.

Unlike the US, EU approach does not differentiate between 'Swaps' and 'Securities Based Swaps'.

The registration and regulation requirements for third country CCPs remain unclear. It might happen that both the US and the EU demand domestic clearing of third country CCPs trades.

The US proposal does not mention about non-US repositories. The EU proposal tackles the issue of non-EU repositories through third country CCPs.

The EU has not identified Special Purpose Entities like US, which imposes additional requirements on swap dealers and major swap participants advising or dealing with US federal, state and local government agencies, employee benefit plans, governmental pension plans or endowments.

The EU has no current plans for a “swaps push-out” rule.

The US allows emergency actions to restrict short selling but the EU proposes to have specific disclosure requirements in addition to such powers.

5.2.3.4 Author’s Opinion

It was expected that derivatives would bear the brunt of new regulations as they were held partly responsible for shadow banking system and lack of transparency in the system. It seems to be a cunning decision to keep the definition of ‘swaps’ wide and open so that new derivatives products developed in future could be easily brought under the regulatory umbrella.

It needs to be seen if EU would be successful in establishing EU wide trade repositories in a timely and efficient manner. Another concern is the evolution of CCPs into new ‘too big to fail’ institutions. Today’s assessment does not foresee any shortcoming in the structure of CCPs but there is a likelihood that CCPs may look for new opportunities in order to expand and turn into ‘systemically important financial institutions’.

5.2.4 Credit Rating Agencies

Credit rating agencies, and in particular, nationally recognized statistical rating organizations ("NRSRO"), have been thought by many to be at the centre of much of what went on with the market crisis, particularly in the area of structured products. The agencies have come under significant criticism for their methodologies, lack of procedures and conflicts of interest.

5.2.4.1 The US

The Dodd-Frank Act also requires the Commission to adopt a number of new rules concerning[64, 65]:

- **Annual reports on internal controls**
  The organization is required under the Act to maintain a documented, effective system of internal controls for determining ratings. The Commission is charged with requiring that each NRSRO prepare an annual report regarding its controls. The report must include an attestation by the CEO that describes the responsibility of management for establishing and maintaining the system. The report must disclose methodologies, use of third parties for due diligence efforts, and ratings track record.

  Dodd-Frank creates the new SEC Office of Credit Ratings. This Office is charged with administering SEC rules with respect to NRSRO practices in determining ratings. The Office is also required to conduct an examination of each NRSRO at least once a year and issue a public report. The report must summarize the essential findings of the examination, identify material deficiencies, state if previous SEC recommendations have been resolved and record any response by the examined agency. The SEC is also required to establish fines and penalties for any NRSRO violations.

- **Conflicts of interest with respect to sales and marketing practices**
  This includes rules to prevent ratings from being influenced by sales and marketing. The penalties must be registration suspension or revocation.

- **"Look-backs" when credit analysts leave the NRSRO**
  The Act also addresses the "revolving door" issue between NRSROs and their clients. In this regard, Dodd-Frank requires that each NRSRO report to the SEC employment of certain senior officers associated with the rating agency in the prior five years where the agency has issued a rating for an instrument during the twelve month period prior to the employment of that person. The SEC is to make this information available to the public.

- **Disclosure of performance statistics/Application and disclosure of credit rating methodologies**
  This includes rules requiring that each NRSRO assess and disclose the probability that an issuer will default or otherwise not make payments in accord with the terms of the instrument.

- **Form disclosure of data and assumptions underlying credit ratings, among other things**

- **Disclosure about third party due diligence**

- **Analyst training and testing**
  These include rules regarding the qualifications, knowledge, experience and training of persons who perform ratings.

- **Consistent application of rating symbols and definitions**
  Rules defining the meaning of rating symbols and requiring that they be used consistently. The NRSRO is required to use distinct symbols to denote credit ratings for different types of instruments.
- **Specific and additional disclosure for ratings related to ABS products**
  After the submission of report to Congress on credit rating process for these products the SEC will establish a system for the assignment of NRSROs to determine ratings for these products.

5.2.4.1.1 Public Comments on US regulations on NRSROs

Credit rating agencies registered with the SEC are known as Nationally Recognized Statistical Rating Organizations (NRSROs). NRSROs include A.M. Best Company Inc., DBRS Ltd., Egan-Jones Rating Company, Fitch Inc., Japan Credit Rating Agency Ltd., LACE Financial Corp., Moody's Investors Service Inc., Rating and Investment Information Inc., Realpoint LLC, and Standard & Poor's Rating Services

All the companies listed above took the opportunity to comment on the Proposed Rules for Nationally Recognized Statistical Rating Organizations.[9]

[9] Comments can be accessed at http://www.sec.gov/comments/s7-28-09/s72809.shtml

All the companies including R&I, Moody's and Fitch have called the requirement, in which NRSROs should be required to disclose the percentage of revenue received from services and products other than credit ratings, as burdensome. Moody's commented that - "*Compiling and publicly disclosing this information would expose our analysts and rating committees to more commercial information about rated issuers than they ever had before. Access to such information would undermine our efforts and those of regulators globally to shield analysts from such information in order to promote independence in the credit rating process*."

A.M. Best Company believes that "*a requirement to publish the percent of revenue received from a rated entity for purchasing non credit rating services could be misinterpreted by users of ratings*." Also it calls the provision as anti-competitive in nature, especially on smaller NRSROs.

All the companies have requested for international convergence of regulatory standards on CRAs, particularly with the EU regulations, thereby facilitating international cooperation and reducing the burden on CRAs that operate in the EU.

The rating agencies have also tried to explain that they have taken measure to assist investors and other users of credit ratings. Giving examples DBRS submitted that "*DBRS is committed to transparency regarding the distinctions between structured finance ratings and other types of ratings. DBRS Business Code of Conduct, together with DBRS rating methodologies, rating definitions and policies and processes, explain the differences between DBRS's approach to analyzing and rating structured products and its approach to rating corporate entities*."

On the same lines, S&P , giving examples of publishing 'what-if scenarios' commented "*alongside the newly expanded regulatory framework, the many initiatives that Ratings Services has launched serve to alleviate many of the Commission's concerns with respect to credit ratings for structured finance products. These initiatives are designed to promote greater understanding of the risk characteristics of our credit ratings*."

Companies acknowledged the need of public disclosure of potential conflict of interest relating to offering both credit rating services and non rating products. At the same time they reminded the authorities about the firewalls that are in place to mitigate the potential influence of non credit rating business on credit rating business. R&I took the opportunity to comment on the issue of material non public information by submitting – "*When an NRSRO determines a credit rating it may receive confidential information during the course of the rating process. In order to protect such information, the provider of the confidential information often requires the NRSRO to enter into a confidentiality agreement. If an NRSRO is required to disclose the types of confidential information used in determining a particular credit rating, such disclosure could violate the terms of the confidentiality agreement entered into between the provider of such confidential information and the NRSRO*."

5.2.4.2 The EU

The aim is that ratings will be qualitatively better than under current standards – "independent, objective and of adequate quality". Main points include:

- **Scope of Regulation**
  Credit institutions, investments firms, insurance, assurance and reinsurance undertakings, collective investment schemes and pension funds may only use, "for regulatory purposes",

ratings which have been issued by a CRA that is registered within the EU, or satisfies the equivalence criteria in the Regulation.

- **Registration and Supervision of CRAs**

The new European supervisory authority – the European Securities and Markets Authority (ESMA) – would be entrusted with exclusive supervision powers over CRAs registered in the EU. This would include also the European subsidiaries of well-known CRAs such as Fitch, Moody's and Standard & Poor's.

- **Equivalence**[66]

Before making an equivalence decision the Commission needs to ensure that:

a) legal and supervisory framework of a third country ensures that credit rating agencies authorised or registered in that third country comply with legally binding requirements
b) the above requirements are equivalent to the EU requirements
c) CRAs are subject to effective supervision and enforcement in that third country.
d) the regulatory regime in that third country prevents interference by the supervisory authorities and other public authorities of that third country with the content of credit ratings and methodologies
e) effective supervision and enforcement takes place on an ongoing basis

For recognising the ratings of instruments and entities given by CRAs outside of the European Community:

a) the credit rating agency is authorised or registered in and is subject to supervision in that third country
b) the Commission has adopted an equivalence decision (as detailed above)
c) the cooperation arrangements specifying the following are operational:
    i. the mechanism for the exchange of information between the competent authorities concerned
    ii. the procedures concerning the coordination of supervisory activities.
d) the credit ratings issued by the credit rating agency and its credit rating activities are not of systemic importance to the financial stability or integrity of the financial markets of one or more Member States
e) The third country CRA has been 'certified' by the CESR.

- **Structured Finance**

  Structured finance instruments will have some form of "additional symbol" to distinguish them from other ratings categories. CRAs will also be required to disclose information about the due diligence processes they have performed, loss information and cash-flow analysis, and their assumptions and stress scenario simulations undertaken.

- **CRA internal governance and transparency**

The Regulation imposes standards of internal governance to ensure (amongst other things) that CRAs manage any conflicts of interest, have independent compliance departments and review their rating methodologies periodically. Additionally, the analysts or persons who approve ratings must not "make proposals or recommendations, whether formally or informally, regarding the design of structured finance instruments on which the credit rating agency is expected to issue a credit rating."The Regulation also prescribes time periods during which former analysts may not take up certain positions within entities which they have rated.

- **Common Platform**

Issuers of structured finance instruments such as credit institutions, banks and investment firms will also have to provide all other interested CRAs with access to the information they give to their own CRA, in order to enable them to issue unsolicited ratings.

5.2.4.2.1 Public Comments on EU Regulation on CRAs

Comments were invited from investors, market participants, governments and other stakeholders to deal with potential risks arising from over reliance on credit ratings.

An analysis has been done on the comments from registered organisations that were not any association or a group of professionals.[10]

Companies' opinions differed on the proposal to use at least two external ratings to calculate regulatory capital. Some appeared comfortable with the idea but some called this proposal to be unnecessary.

AXA commented – "*The use of multiple external ratings surely increases rather than reduces reliance on them, and whilst this may give a different result, it will not necessarily give a better result*."

Supporting the above idea was Blackrock that submitted – "*We believe that this is an appropriate approach for assessing risk for regulatory capital purposes under the existing framework and would also limit the impact of ratings shopping*."

ING rejected the idea by saying "*No. Constrains that would result from a compulsory use of two ratings are not compensated by a lower dependence on ratings*."

On the same line BVR, DSGV and VÖB reasoned that "*The ratings of the three large rating agencies often barely differ from one another, so that several external ratings do not necessarily offer investors increased quality. Moreover, it has been our experience that although many investors view external ratings as a necessary investment prerequisite, increasingly fewer investors rely on such ratings alone: most conduct their own analyses. In addition, and in view of the existing oligopoly, mandatory use of two ratings could ultimately be detrimental to competition*."

The companies also did a comparison of market based measures (such as bond prices, CDS spreads) with credit ratings. Most of them called market measures to be better than credit ratings as they reflect other factors like liquidity risk along with credit risks.

Blackrock submitted a comment saying that "*the market is better able to determine credit risk than the ratings agencies. Therefore, we would support the principle of the inclusion of market measures in regulatory capital frameworks*."

Blackrock also made an important point that "*for certain asset classes, which do not have a deep market or are not frequently traded, bond prices or CDS may not be available, or could move for technical rather than fundamental credit reasons. The introduction of market measures therefore needs to consider the appropriateness for each asset class; for example, we would consider this approach applicable to European corporate credit but not all structured finance. Market based*

[10] Comments can be accessed at http://circa.europa.eu/Public/irc/markt/markt_consultations/library?l=/financial_services/credit_agencies_2011/registered_organisations&vm=detailed&sb=Title

measures must be incorporated into the framework in such a way as to minimise the potential that they allow release of capital when the market is overly bullish or increase pro-cyclicality."

ING on the other hand called "*market data necessary to monitor risk on corporates but incapable of replacing fundamental analysis of the characteristics of an exposure. In addition market data are much more volatile."* Société Générale corroborated this view by arguing *that "market based assessment can be more pro-cyclical. Besides, in some markets or in periods of reduced liquidity, such prices may not be meaningful. To diversify the rating sources, the views of other third parties could be considered, like credit insurers or for small and medium corporates, ratings provided by national central banks."*

Commenting on the securitisations capital requirements, their risk sensitivity and internal assessment, most companies did not favour the ideas by calling them restrictive and disrupting the financial institutions and capital markets.

DBRS cautions against "*any significant change from the methodology for establishing risk-based capital for securitization as it would disrupt financial institutions and the capital markets generally. For example, elimination of credit ratings from securitization calculations could have a significant impact on liquidity in the ABS markets which rely upon the ability of investors to make real-time decisions at the point of initial offering or subsequent secondary market purchase*."

M&G Investment Management Limited called for attention towards banking sector by saying that "*the vast majority of European Securitisations have performed as predicted by their credit ratings since the onset of the financial crisis. Indeed aggregate credit losses for European Securitisations are less than 10% of those suffered by US Securitisations, and these have themselves been concentrated in the CDO sector. There is far more risk bound up in the banking sector due to its multi-faceted and complex structure*."

Most companies identified the obligatory due diligence internal risk management by the firms to be a better way than relying on credit agencies alone. At the same time many companies identified the burden associated by mandatory internal assessment. Also for companies with business models focussed on SMEs or small consumer, this obligation can be onerous. Most companies however agreed that CRD includes proposals where in companies have to disclose information on internal risk management models. This makes the more supervisory oversight redundant.

Société Générale put it simply by saying that "*investors must understand and assess the risks of the assets they intend to invest in. Third party ratings must remain a part of a wider analysis. Nevertheless buy-side analysis should be further developed and encouraged*." It also said that "*the CRD has already provided for the framework of required disclosure to supervisors, including the use of external/internal rating.*"

BVR, DSGV and VÖB are of the opinion that the "*requirement should not lead to an obligation for institutions to prepare a 'shadow rating'. It should not be forgotten that external ratings also help make capital movements efficient, as it is not possible for an individual institution to carry out its own research for every single debt security of every single issuer on the market. Within the scope of the supervisory process (Pillar II), an institution should be able to ensure that it has processes at its disposition that enable it to form its own assessment of counterparty risk in the case of external appraisals of credit standing."*

All the companies supported the important role played by agencies assess publicly available date and provide sovereign debt ratings. However they expressed the need and desire to reduce reliance on them.

AXA is of the view that "*Whereas all firms should be able to undertake their own critical opinion on sovereign debt credit quality, external credit ratings can be a valid input in their risk assessments. Besides mandates will very likely always refer to external ratings in the absence of a credible alternative definition for creditworthy investments.*"

Blackrock shared the above view by saying – "*The agencies provide a useful role in collating and standardising (across different regions, definitions and languages) the available information allowing investors easy access to data sets on which they can perform their own analysis*."

Comments were invited on the introduction of 'flexibility clause'[11] in investment mandates and policies which would allow investment managers to temporarily deviate from external rating thresholds (e.g. by keeping assets for a limited time period after a downgrading). Research oriented organisations supported the idea but financial institutions called the clause redundant as this clause reflects the fiduciary duty of the investment houses.

Centre for Research on Multinational Corporations agreed by commenting that "*a flexibility clause in investment mandates is attractive, as it will probably reduce the cliff effect without totally reducing the signal effect of lower ratings*."

ING commented – "*downgrades are usually caused by an underlying event. Flexibility clauses would therefore have a limited impact on the cliff-effect coming from many actors reacting the same way at the same time*."

Société Générale shared this view and said that "*such a flexibility clause already exists for some collective investment undertakings. A more extensive use of this clause, on a case by case basis depending of the fund's investment policy, would help avoiding cliff effects and would enable managers to widen their investment scope, especially in periods of economic turmoil*."

All the companies shunned the view of investment managers being obliged to introduce measures to ensure that the proportion of portfolios solely reliant on external credit ratings is limited. They called this an issue of judgement of investment manager dependent on the mix of clients and portfolios.

Blackrock commented that "*even though asset managers undertake their own research and analysis, an independent measure of credit risk helps clients to define their investment universe and make comparisons between managers. Whilst the ratings system is not perfect, in practical terms, it would be hard to introduce an industry-wide alternative in the short-term which would be significantly superior and more advantageous for clients*."

Companies also take credit risk as just one part of assessing credit quality. M&G Investment Management Limited opined that "*market prices reflect many factors that include, but are not limited to credit risk. Most significantly they reflect the fact that there are swings in supply and demand for certain assets, and gyrations in price may have nothing to do with credit risk*."

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[11] This would allow for investment managers to temporarily deviate from external ratings (eg for a period of 6 months) thereby allowing for a gradual sale of the corresponding asset and reducing volatility in the market. Such provisions are already used in some jurisdictions when ratings are used for regulatory purposes.

Blackrock stated that "*there is no one single measure of credit risk available that could be universally used to define minimum portfolio credit risk characteristics. Whilst they should never be the sole determinant, ratings provide an independent, standardised opinion of credit across asset classes and as such can be a useful tool for helping to define minimum portfolio*."

Most companies identified lack of consistency in application of methodology across sovereigns and called the current rate of transparency as sufficient. AXA, BVR, DSGV and VÖB welcome the idea of agencies being obliged to disclose their methodologies more widely although they consider the current level of transparency to be appropriate. Also companies don't seem to like the idea of free of charge credit ratings. They cite the reasons of the poor quality of credit ratings due to their business model not sufficiently relying upon end-users, thus creating conflicted interests. More frequent assessment of sovereign ratings seems to be digestible but the need of the hour is quick warnings on the upgrades or downgrades that agencies consider to make.

Financial institutions acknowledged the fact that issuer pay model has a distorting influence and creates conflicts of interests over determination of credit ratings. However, they pointed out that these conflicts can be mitigated by more regulation of CRAs and greater scrutiny of external ratings. Also due diligence and internal risk management can help to achieve the cause. It has to be kept in mind that these conflicts of interest cannot be completely dissolved even with the introduction of new regulations. Both models, be it issuer pay or investor pay model are fraught with these conflicts.

5.2.4.3 Analysis and comparison

Ratings agencies will have to justify what they do much more in future. The "Big Three" — Fitch, S&P and Moody's may face more competition in the EU. The sector faces more efforts to dilute their role in determining bank capital requirements.

The US proposals aggressively attack the structure of credit rating agencies in order to avoid conflicts of interests. The US had already expressed its intention to supervise the role of credit rating agencies before the crisis. The EU followed the path of the US only after the crisis.

The EU has to deal with the credit rating agencies of various member states and national agencies would be supervised by ESMA. In the US, CRAs would come under the regulatory oversight of SEC.

EU anticipates that single set of regulations would introduce level playing field for all the CRAs in member states. EU envisages efficiency gains from avoidance of coordination efforts between local bodies.

Some problems can be faced by EU. The oversight capacity will have to be build from scratch in the EU as no such facility exists. Also local CRAs will have to deal with EU level supervisor which can be more than that they can handle.

CFA institute correctly pointed out that flexibility clause in investment mandates in EU is incorrectly making an assumption of continuation of reliance on CRAs. "*Such mandates create a captive market for the rating agencies which enables them to benefit regardless of the quality or accuracy of their opinions. Rating agencies have historically waited until the 11th hour to downgrade issuers, by which time astute investment managers would have already decided whether to sell the relevant securities, or to hold on with the expectation that the credits will recover over time.*"

5.2.4.4 Author's Opinion

"One thing to be kept in mind is that Credit Rating Agencies are just service providers to financial institutions. They have taken over the function of credit assessment from financial institutions and developed their own models. The ratings should merely be seen as recommendations and investment managers should take the onus of due diligence of products. Credit Rating Agencies are better equipped to assess sovereign debt but should not be taken as godfathers in sovereign risk. This is easier said than done because most portfolio managers market themselves or their funds investment in a particular tranche or products with specific credit ratings. Also capital and liquidity requirements of financial institutions are based on credit ratings assigned to the instruments or products.

Also if CRAs in local EU member states are allowed to have stronger foothold in order to have more competition, their growth will be inhibited quickly because of small area they can command. They will look for growth in other member states leading to mergers and acquisitions at the EU level. If anti-trust laws prevent M&As, local CRAs will cease to exist as their profitability would be hurt in the long run.

The concept of 'equivalence' does not seem to have a long term vision. The bargaining power of the 'third country' can influence the equivalence decision in the EU. As the emerging economies become strong their regulatory bodies would have increased powers which they can wield during negotiations of making regulatory and supervisory framework equivalent. Also there is a little chance that the regulations in different countries will go hand in hand for a long time. As the economies evolve, special regulations might be needed that are suited to a particular economy.

Therefore regulations should go beyond transparency measures to break the links between financial institutions and CRAs if total reliance on CRAs has to be ended."

5.2.5 Hedge Funds Regulation

Another important aspect in which new regulations have come up is in the supervision of activities of hedge funds. Both the US and the EU have identified the need for regulation of hedge funds for the following reasons:

- To improve transparency through compelling disclosures to avoid hidden risks
- To mitigate liquidity risks (via structured credit markets)
- To reduce counterparty risk which arises due to leverage (via prime brokers)

5.2.5.1 The US

The Dodd Frank Act requires all large hedge fund advisers to register with the SEC. Also the new rules on derivatives trading have an additional impact on many hedge funds.

Title IV of Dodd Frank Act details the regulations for advisers to hedge funds and others. It is called as 'Private Fund Investment Advisers Registration Act of 2010'

Some changes worth noting in the regulation are:

❖ *Elimination of "Fewer than 15 Clients" Exemption*

Many advisers that relied upon the exemption will be required to register with the SEC as investment advisers, regardless of the number of clients they advise, provided they meet the $100 million of AUM threshold (or $150 million in the case of certain advisers to "private funds"), unless they qualify for a different exemption.

❖ *Increase in AUM Threshold for SEC Registration*[67]

Previously, an investment adviser generally could not register with the SEC unless it had at least $25 million of AUM, leaving the registration of advisers with less AUM to the individual states. The Act raises this threshold to $100 million (or such higher amount as the SEC, by rule, may determine) in an effort to permit the SEC to focus its resources on larger managers. As a result, advisers with less than $100 million of AUM generally will not be permitted to register with the SEC (or, if already registered, will be required to withdraw their registrations) if they are otherwise required to register with and be subject to examination by the state in which their principal office and place of business is located.

Regardless of AUM, registration is still required for advisers to registered investment companies and business development companies.

❖ *Addition or Modification of Other Registration Exemptions*

The newly-added or modified exemptions relate to[68]:

- advisers to "private funds" with aggregate AUM in the US under $150 million;
- advisers to "venture capital funds";
- advisers to "small business investment companies";
- "foreign private advisers";
- "family office" advisers;
- intrastate advisers with no private fund clients; and
- Certain commodity trading advisors.

❖ *Private Fund Records*

The Act requires an adviser to maintain, and be subject to SEC inspection with respect to, the following records for each private fund it advises[69]:

- amount of AUM;
- use of leverage (including off-balance sheet leverage);
- counterparty credit risk exposure;
- trading and investment positions;
- valuation policies and practices;
- types of assets held;
- side arrangements or side letters;
- trading practices; and
- other information deemed necessary by the SEC, in consultation with the FSOC.

The Act also requires each adviser to a private fund to file reports containing such information as the SEC deems necessary or appropriate in the public interest or for the assessment of systemic risk

❖ *Custody of Client Assets*

The Act requires registered investment advisers to safeguard client assets over which the adviser has custody, including verification of client assets by independent public accountants, as may be prescribed by SEC rule.

❖ *Volcker Rule*

Generally put, this rule prohibits banks, bank holding companies, entities treated as bank holding companies (such as foreign banks with a US presence) and any of their affiliates ('Covered Banks') from engaging in proprietary trading or investing in or sponsoring any hedge fund, private equity fund or any similar entity.[70]

The SEC is also given considerable power to expand its own authority in the future: it has the power to request any additional information it deems necessary, it can define "mid-sized" private funds and require them to register as well, and it can impose separate recordkeeping and reporting requirements on all other hedge funds. However, "family offices" are exempt from registration.

Also the derivatives section of the Dodd-Frank Act affects hedge funds. For example, a hedge fund trading OTC derivatives may be deemed a "major swap participant" and thus be subject to additional regulation described in the derivatives section of the Act.

❖ ***Regulation of Bank and Savings Association Holding Companies and Deposit Institutions***

It prohibits banks from owning hedge funds. The aim is to get the banks from doing the kind of proprietary trades that brings in conflict of interest. The ownership-of-hedge-funds prohibition is there mainly to ensure that the banks don't have a back door into that business.[71]

5.2.5.1.1 Public Comments on Hedge Fund Regulations in US

Comments were received on all aspects of Title IV of Dodd Frank Act namely[12]:

1. Systemic Risk Reporting
2. Exemptions for Certain Advisers
3. Family Offices Exclusion
4. New Threshold for Federal Registration
5. Accredited Investor Standard
6. Study of the State of Short Selling and Failures to Deliver

Reflecting the concerns on venture capital firms, Abbott Capital believes "*that the portfolio companies financed by venture capital firms represent little systemic risk to the United States economy*". As a result it demands to fall under the exemption list of Dodd Frank Act.

Private Equity Investors Inc and Willowbridge Partners take the above demand one step ahead by bringing forth differences between 'venture capital funds' and 'hedge funds'. "*Venture capital is a long-term asset class. Unlike hedge funds which have quarterly or annual liquidity for their investors, venture capital funds and their investors must be prepared to wait as long as 10 to 15 years for investments to mature.*"

Companies have also expressed concerns and lack of clarity in the provision requiring registration with state authorities and also with SEC. Citing higher opportunity cost and loss in productivity most of the companies were of the view that requiring investment advisers who have long been registered with the SEC to re-register with a state regulatory body will be harmful to clients and will negatively impact productivity in the advisory industry and the economy as a whole.

Managed Funds Association expressed its concerns "*about the prospect of proprietary or confidential information being disclosed to the public. Such information is highly sensitive from a competitive*

[12] Comments can be accesses at http://www.sec.gov/spotlight/regreformcomments.shtml

standpoint and advisers to private investment funds employ substantial safeguards to protect the proprietary and confidential information of the funds they manage, including information related to their investment strategies, portfolio holdings and investor base."

5.2.5.2 The EU

The Alternative Investment Fund Managers Directive ("AIFMD") provides a framework at European level for the regulation of fund managers and notably of hedge funds, with the aims of strengthening financial stability and increasing transparency towards investors.[72]

The Directive regulates the managers of funds rather than the funds themselves. The Commission explained that managers should be regulated as it was their investment decisions that could pose risks to investors, markets or the economy.

By alternative investment fund (AIF) the Commission means "any collective investment undertaking, including investment compartments thereof whose object is the collective investment in assets and which does not require authorization under the UCITS Directive". This definition, extremely broad and general includes hedge funds.

❖ ***Registration and Transparency Requirements***[73]

To supervisors, AIFMs would be required to disclose:
- Performance data;
- Data on concentrations of risk;
- The markets and assets in which an AIF will invest;
- Risk management arrangements; and
- Organisational arrangements.

The Directive aims to ensure a minimum level of transparency of AIFs to ensure investor protection and facilitate due diligence. This would involve providing:
- A description of investment policy;
- Descriptions of use of assets and leverage;
- Redemption policy;
- Valuation, custody, administration and risk management procedures; and
- Fees, charges and expenses associated with the investment.

❖ ***European Passport***
The AIFM Directive would require all alternative investment fund managers to be authorized in the member state in which its registered office is located and subject to harmonized regulatory standards on an ongoing basis. Once authorized, fund managers would be allowed to market anywhere in the European Union, thus benefiting from the European passport, which would significantly reduce their costs.[74]

❖ ***Third Country Funds***
Third countries funds would be allowed to be marketed in the EU if their legislations are equivalent to the provisions of the Directive.

❖ ***Authorization and Capital Requirements***
No AIFM based in the EU will be able to manage an AIF unless it is regulated in accordance with the directive. [75]

Regulated managers appointed as external managers of one or more AIFs will also be subject to capital requirements on a sliding scale depending on the value of the funds that are being managed, but subject to (i) a minimum of €125,000 and (ii) a "floor" equal to the "own funds" required for an investment firm under the Capital Requirements Directive (CRD)[75, 76]

An AIFM which is an internally managed AIF is regulated to have initial capital of at least €300,000.

❖ ***Investments in securitisation positions***[75]

The Commission is required to adopt measures setting out the requirements that need to be met by the originator, the sponsor or the original lender in order for an AIFM to be allowed to invest in securities or other financial instruments of this type issued after 1 January 2011 on behalf of one or more AIF. One such requirement is that the originator, the sponsor or the original lender retains a net economic interest of not less than 5 per cent.

❖ ***Valuation***

All fund assets must be valued at least yearly, but also when units of the fund are issued or redeemed if the fund is closed ended, and with "appropriate" frequency in the case of open-ended funds. It must be done by a person independent of those managing the assets.[75, 76]

❖ ***Delegation***

Managers frequently delegate part of their activities in relation to funds, in particular to an investment manager. Under the directive, this delegation will be subject to the prior notification to the regulatory authorities and may be made to managers in non-EU countries only where there is appropriate cooperation between the regulatory authorities supervising the AIFM and the delegate respectively.[75, 77]

5.2.5.2.1 Public Comments on AIFMD (EU)

ECB invited public comments on the new proposed regulations. Comments were received from 18 public authorities, 81 organisations which included associations and also financial institutions, and 11 individual comments also poured in.[13]

Analysis was done on the comments received in English from various financial institutions (or companies). Comments from associations were not analysed as they may have opinions same as the companies.

Comments were received on all aspects of the regulations.

The definition of hedge funds and enhanced disclosure requirements received many comments. All the companies were of the view that there cannot be a single internationally acceptable definition of hedge funds. Although some companies appreciated the new regulation, they expressed their concerns on making hedge funds a specific target of the regulations and considering them different from other financial institutions. Most of the companies were in favour of regulations targeting the improvement in risk management practices of hedge funds.

[13] The comments can be accessed at http://circa.europa.eu/Public/irc/markt/markt_consultations/library?l=/financial_services/hedge_funds/organisations&vm=detailed&sb=Title

Aviva investors commented – "*Recent commentary has directed blame at the hedge fund industry as one of the main contributing factors to the current market crisis. We do not believe that the root cause of the disorderly markets can be attributed to hedge funds and short selling activities. Hedge funds are just one investor in the market*."

HDF expressed its views clearly by clearing the blame of financial crisis from hedge funds– "*All hedge funds are not "black boxes"; their level of disclosure, for instance, to managers of funds of hedge funds is no different from the level of information available from a standard mutual fund if not better.*

The regulation of hedge funds is limited and uneven across countries but it turns out that the nexus of the current financial crisis is not to be found among hedge funds but within the banking industry, clearly the most regulated type of financial markets participants.
Any "targeted assessment" should also take into account the fact that many hedge funds strategies are now used by UCITS funds. Any regulation should apply to these strategies rather than to "hedge funds". Likewise, it should be remembered that leverage is also used by UCITS through derivatives."

Most of the companies called the pan European response to hedge fund regulation to be unnecessary and predicted that it would be ineffective and counterproductive. They also called for more coordination with other regulatory bodies (like in the US) as hedge funds are not territorially restricted in their operations.

ILAG - Investment & Life Assurance Group Limited – "*We believe it unlikely that a purely European response would be totally effective. It would make sense first to seek common ground internationally eg. work with IOSCO who, we understand, is already developing enhanced standards for hedge funds. If international agreement cannot be reached then a European response could nonetheless have some positive effects*."

AXA opined that "*Although many hedge fund managers are based in Europe, many funds are not. Ideally a response should be global, as there is a risk that if regulation in the EU becomes unduly onerous, activities will move elsewhere*."

The commission invited answers on the question of 'indirect regulation' of hedge fund leverage through prudential requirements on prime brokers to insulate the banking system from the risks of hedge fund failure. All the companies accepted the indirect regulation as an appropriate way to keep a check on hedge funds.

Commenting on the question if indirect regulation is warranted Brevan said – "*In our view the best way to deal with systemic risk is to focus on direct bank regulation and, through the banks, indirect regulation of the other market participants, including hedge funds.*
Despite enormous stress, banks have not lost a material amount of money through their prime brokerage operations or through their exposure to hedge funds. Nor have hedge funds caused the failure of any banks. We believe there is no need to further insulate the banking system from the risks of hedge fund failure."

Most of the companies did not express grave concerns on the requirement of enhanced transparency through more information to the investors. However they highlighted the fact that hedge fund investors, being sophisticated, would not benefit more with more information, as they make sufficient analysis before investment and beyond.

Ernst and Young suggested that "*there be some form of best practice that clearly defines what investors may be made aware of before investment inception, and also they should expect to be advised of developments to the strategy and portfolio on an ongoing basis*."

"We believe the existing level of disclosure, especially at the investor level, is sufficient both on a pre-contractual and ongoing basis to enable sound investment decisions. Also, in a number of jurisdictions globally the hedge fund industry is a regulated industry, with satisfactory levels of disclosure." - Thomson

HFSB submitted – "*Most hedge funds rely on sophisticated investors (UHNW, institutional investors), with an increasing share of institutional monies. These are knowledgeable and sophisticated – or they have the resources to hire knowledgeable and sophisticated advisors – and therefore do not need the protection of regulators in the way retail investors do*."

Most of the companies were not gung ho about the development to facilitate hedge funds access to retail customers. Most of them argued that the developments are not new and retail investors are already involved through funds of funds and pension funds. They also highlighted the need for transparency and appropriate operative controls.

Dillon Eustace commented – "*subject to appropriate controls, or via suitably managed and diversified products, making alternative investment products available to retail investors is philosophically attractive. It would, however, be a mistake to impose a retail regime on hedge funds in order to facilitate this. It should also be borne in mind that retail investors currently have access to hedge fund exposure and alternative investment instruments, e.g. via existing pension funds, retail funds of hedge funds, UCITS index funds and CFDs*."

5.2.5.3 Analysis and Comparison

One of the key points to keep in mind is that hedge funds tend to have no territorial boundaries. They position themselves in countries with minimum and lax regulations. This helps them to invest in world markets uninhibitedly. By imposing stricter regulations, both the EU and the US have high probability that hedge funds may move out of their regulatory umbrella. This can keep them at competitive disadvantage.

The proposal of third country funds would bar funds whose home jurisdictions' rules aren't as strict as in EU which represent 40% of the world's hedge funds according to Dan Waters, head of the FSA's asset management division.

The United States Secretary of Treasury expressed his worries to EU Commissioner for Internal Market and Services Michel Barnier. Geithner asserted that "*U.S-EU relationship is essential to strengthen global financial governance and that both markets should fulfil the G20 commitment to avoid discrimination and maintain a level playing field*". He further explained that the United States is worried about "*various proposals that would discriminate against U.S firms and deny them the access to the EU market*"[78]

Pricewaterhouse Coopers writes in its analysis "If AIFMD aims to regulate advisers of non UCITS funds actively marketed to EU investors, the Dodd Frank Act has a much broader definition. It aims to regulate advisors who make use of "US mails of interstate commerce" to conduct their investment advisory business while providing a number of exemptions which European investors may be able to avail themselves of."[79]

Registration of hedge funds can be a boon because it assures the investors of investing with a recognised fund. But at the same time, it may create some discomfort for the hedge fund managers who do not want to come to the front and register.

European institutional investors are currently free to seek out the best managers globally, but it seems that this freedom will soon cease to exist. The quantity and variety of funds available would diminish a great deal as a result of AIFMD coming into force because investors will not have access to funds managed by a non-registered manager.

The forced disclosure requirement may come as a shock for hedge funds because they distinguish themselves by setting their own strategies. Using their understanding of the market and self developed models makes them successful. Public disclosure may harm both the hedge funds and their investors.

One of the positives from Volcker Rule is that banks will have to spin off their proprietary trading divisions into stand alone hedge funds. This means more hedge funds in the US market. Increased liquidity in the markets and complicated can be anticipated as a result of this increased number. [80]

5.2.5.4 Author's Opinion

"Offshore hedge funds give investors a chance to invest in other economies. The regulations at the EU and the US level will work only till the financial markets in other countries remain significantly underdeveloped. Once markets in developing countries start handling complex products, hedge funds will flock to these markets. They would then be able to lure US and EU investor who are looking for higher returns. These regulations would then become ineffective and would require enhanced coordination with the regulatory bodies of developing countries. It is highly unlikely that the developing markets would employ prohibiting regulations in the growth phase of hedge fund industry in their jurisdictions.

Registration (in one or more jurisdictions) adds extra burden on the advisers. A lot of effort has to be spent to prepare documentation, the time and effort of which can be utilized in running the fund efficiently. Also new work force of regulatory bodies will have to be trained to process the information and warn against misbehaviours. Once the regulatory body at the local level is established it has to be occupied with work in order to justify their setup. This means more regulations have to be brought in future. Important inference that can be made is that SEC has not delegated any process at the state level in the US, it has merely added more regulations that have to complied at the state level apart from national level (i.e. SEC)"

5.2.6 Regulations related to Securitization and Re-securitization

5.2.6.1 The US

The securitization provisions of the Dodd-Frank Act focus on "credit risk retention" that would require originators and securitizers of financial assets to retain a portion of the credit risk of securitized financial assets or, in more popular terms, to have "skin in the game." In addition, the securitization provisions in the Dodd-Frank Act set forth disclosure requirements for the issuer and credit rating agencies who rate the issuer's securities.

❖ *Amount of risk retention*

Securitizers[14] are required to retain an economic interest of not less than 5% of the credit risk in any such asset that is transferred, sold, or conveyed to a third party through the issuance of an asset-backed security.[81]

The Dodd-Frank Act prohibits a securitizer from directly or indirectly hedging or otherwise transferring the credit risk that the securitizer is required to retain with respect to an asset unless regulations to be adopted specify otherwise.

The Dodd-Frank Act also requires the Chairman of the Financial Services Oversight Council to study the macroeconomic effects of the risk retention requirements, with emphasis placed on potential beneficial effects with respect to stabilizing the real estate market.[82]

❖ *Asset Class Differentiation*

Underwriting standards and the amount of risk retention may be different for different asset classes as determined by regulation. The Dodd-Frank Act specifies the asset classes to be treated separately as residential mortgages, commercial mortgages, commercial loans, auto loans and any other asset class that the Office of the Comptroller of the Currency ("OCC"), the Federal Deposit Insurance Corporation ("FDIC") and the Securities and Exchange Commission (the "SEC") deem appropriate.[81]

❖ *Allocation of risk retention*

The allocation of risk retention obligations between a securitizer and an originator that sells assets to the securitizer is to be determined jointly by the Federal banking agencies and the SEC by taking into account the following items[81]:

- Whether the assets sold to the securitizer have terms, conditions and characteristics that reflect low credit risk
- Whether the form or volume of transactions creates incentives for imprudent origination of the specific types of assets
- the potential impact of the risk retention obligations on the access of consumers and businesses to credit on reasonable terms.

The percentage of the risk retention obligation imposed on the securitizer will be reduced by the percentage of the risk retention obligation imposed on the originator.

❖ *Rating Agency Reports*

Rating agencies will be required to include in any report accompanying a credit rating on a securitization a description of the representations and warranties included in the transaction and the enforcement mechanisms available to investors, as well as how those provisions differ from such provisions in similar securitizations.[83]

❖ *Securitization Disclosure*

Securitizers will be required to disclose fulfilled and unfulfilled repurchase requests across all trusts aggregated by the securitizer "so that investors may identify asset originators with clear underwriting deficiencies".[83]

❖ *Disclosure Requirements*

[14] "Securitizer" is defined to include both an issuer of asset-backed securities and any "person who organizes and initiates an asset backed securities transaction by selling or transferring assets, either directly or indirectly, including through an affiliate, to the issuer."

The SEC requires issuers of asset-backed securities, at a minimum, to disclose asset-level or loan-level data, if such data are necessary for investors to independently perform due diligence, including—

i. data having unique identifiers relating to loan brokers or originators;
ii. the nature and extent of the compensation of the broker or originator of the assets backing the security
iii. the amount of risk retention by the originator and the securitizer of such assets.

5.2.6.1.1 Public Comments on US regulations on ABS

Mostly associations of professional or companies submitted comments on 'Conflicts of Interest Relating to Certain Securitizations'.[15]

According to the Senators Merkley and Levin the purpose of these regulations is to avoid conflicts of interest that arise when a financial firm designs an asset backed security, sells it to customers, and then bets on its failure. Securities Industry and Financial Markets Association (SIFMA) expressed it worries that final rules might create unnecessary or prohibitive restrictions on the ABS markets. SIFMA recommends that the "*Commission adopt rules that recognize that many potential and actual conflicts of interest are inherent in the ordinary course of securitization transactions*."

American Bar Association seconds the above view by commenting "*The relationship between an ABS sponsor and ABS investors is inherently conflicted, in that the ABS sponsor is seeking funding and the ABS investors are providing that funding on negotiated terms*."

Comments were also received on Title IX of Dodd Frank Act which deals with Asset Backed Securities[16].

Morgan Stanley commented on CDOs – "*The asset pools of CDOs of ABS generally contain subordinate tranches of other ABS transactions, and so expose investors to two levels of credit risk. CDO-squared transactions aggregate subordinate classes of other CDOs, adding a third level of risk concentration. This amplification of risk is the primary reason why CDOs of ABS and CDO-squared transactions suffered catastrophic losses once housing delinquencies began increasing. For these reasons, we acknowledge that it is appropriate for CDOs of ABS and COOs-squared to be regulated as Exchange Act ABS for purposes of Dodd Frank Act*."

Captive Commercial Equipment (CCEQ) ABS Issuer Group believes that the "*proposed disclosure requirements will fulfil the requirements under the Act and will benefit investors by providing them with a standardized monthly report and an additional report on the updated characteristics of the underlying assets, which will be easy to use and easy to compare across issues and issuers*." It recognizes that "*this could result in some additional incremental cost to CCEQ securitizers; however, such costs would be more than offset by the benefits to investors*." Volvo Financial Services, CNH Global, Deere & Company acknowledge the investor benefits but state that many CCEQ investors perform a due diligence review prior to an actual issuance in order to pre-approve the issuer or asset class. These companies performed investor survey and found that "*investors recognize the unique characteristics of their asset class and while a few investors expressed their desire to receive loan-by-loan data on other asset-classes, all stated that the current level of disclosure by CCEQ ABS issuers was sufficient to perform their analysis of CCEQ ABS*." This reflects their concern about disclosing

[15] Comments can be accessed at http://www.sec.gov/comments/df-title-vi/conflicts-of-interest/conflicts-of-interest.shtml
[16] Comments can be accessed at http://www.sec.gov/comments/df-title-ix/asset-backed-securities/asset-backed-securities.shtml

private information if asked to open loan level data. As a consequence of this they fear discontinuance of some securitization programs or higher level of funding costs for lower rated companies.

Realogy expressed its concern by calling 20% downpayment requirement for Qualified Residential Mortgage as misplaced. Anything less would require the lender to retain 5% of the face value of the non-qualifying mortgage on the lender's balance sheet. It commented "*arbitrarily defining QRM as a 20% down payment would most likely stall the housing recovery and perhaps reverse its course entirely*." It is concerned that this would limit competition in mortgage lending industry by pushing out small and medium size mortgage lenders.

Genworth Financials provides statistical analysis to prove that on low downpayment loans, insured loans have a lower risk of default than comparable uninsured loans; thereby calling the minimum downpayment requirement unnecessary.

Morgan Stanley requests the regulators to differentiate among CDOs, CLOs and re-securitization. It believes that single credit re-securitizations and CLOs should be separated from CDOs. "*CLOs are used to finance the corporate loan market for small and medium sized companies. Re-securitizations generally are static and used to tranche existing risk*." MS adds – "*financial crisis has illustrated that when ABS face periods of illiquidity, re-securitization can be a valuable tool to provide liquidity in an otherwise illiquid market.*"

5.2.6.2 The EU

The EU has dealt with the area of securitization through amendments in Capital Requirements Directive (CRD 2 and CRD 3)

❖ ***Risk Retention***

A credit institution (bank) will be able to apply securitization only if the originator[17], sponsor[18] or original lender discloses that it will retain, on an ongoing basis, a material net economic interest in securitization of at least 5%. .The retention requirement is measured at "origination". "Ongoing basis" means that retained positions, interest or exposures are not hedged or sold.[85]

CRD requires a sponsor to be a credit institution in order to be eligible to satisfy the risk retention rules but it does not require the originator or the original lender to be a credit institution in order to be eligible to satisfy the risk retention rules.

The requirement to retain a 5 percent net economic interest may not be fulfilled by one originator or original lender on behalf of others where the securitized exposures are those of multiple originators or original lenders. It must instead either be fulfilled by (i) each originator or original lender individually or (ii) by the sponsor of the securitization. Thus, CRD does not permit a sharing of the "skin in the game".[86]

[17] "originator" is defined as an entity which either itself or through related entities, directly or indirectly, was involved in the original agreement which created the obligations or potential obligations of the debtor or potential debtor giving rise to the exposure being securitized or an entity which purchases a third party's exposure onto its balance sheet and then securitizes them.84. *DIRECTIVE 2006/48/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL relating to the taking up and pursuit of the business of credit institutions*, E.P.A.T.C.O.T.E. UNION, Editor. 2006. p. L 177/15.

[18] A "sponsor" is defined as a credit institution other than an originator credit institution that establishes and manages an asset-backed commercial paper program or other securitization scheme that purchases exposures from third-party entities.84. Ibid.

Individual member states can demand higher thresholds of risk retention percentage.

Any hedging (which includes any transaction, e.g., portfolio hedges, whose economic substance renders the retention ineffective) of the retained interest is not permitted. However, general hedging such as index hedges, indirect hedges of risk factors impacting on the underlying collateral such as loss and recovery rates and indirect hedges on macroeconomic variables of securitized exposure shall remain permissible.[87]

❖ ***Due Diligence on Investors***

CRD requires credit institutions which take credit exposure to securitization transactions to have a thorough understanding of all structural features of the transaction that would materially impact the performance of their exposure to the transaction. Thus, the responsibility is placed firmly on such investor credit institution to demand the level of information from the issuer, sponsor or originator which it deems necessary to fully understand the transaction into which it is buying.[85]

❖ ***Exemptions***

CRD only provides list of exemptions to the retention requirements, namely[85]

i. securitized exposures guaranteed by government or central bank,
ii. transactions based on an index, where the underlying reference entities are identical to those that make up an index of entities that is widely traded or are other tradable securities other than securitization positions
iii. syndicated loans, purchased receivables or credit default swaps where these instruments are not used to package and/or hedge a securitization

5.2.6.2.1 Public Comments on EU risk retention rules (CRD)

Comments were received on Article 122a of CRD which deals with retention rule in securitized products.[19]

Companies do not agree on the requirements of credit institutions when "investing" as opposed to the lesser requirements when assuming "exposure" but not "investing". Some worry that these higher capital requirements for sponsors would dry up liquidity in ABS repos.

Lloyd Banking Group expresses its worries as – "*In ABCP transactions the credit risk of the underlying assets is usually subject to protection, provided by the bank administering the programme. The bank administering the programme is referred to as the "sponsor". This protection may be in the form of a programme-wide or transaction-specific standby letter of credit. The sponsor therefore would be exposed to the credit risk of a securitisation position to the extent of the letter of credit. Alternatively, in some programs credit support is provided by 100% "fully supported" liquidity. It seems to us to be unnecessary that the sponsor in these circumstances should also be required to meet the retention requirements*."

Paragon expresses the views of non deposit taking institutions – "*because as a non-bank it will have to fully fund the retention amounts with equity, it faces a capital requirement that could be as much as 26 times higher than the capital requirements for banks taking a 5 per cent slice of a securitisation deal. It will be higher even than the capital requirement that banks would have to meet if they held unsecuritised assets on balance sheet.*"

[19] Comments can be accessed at http://www.eba.europa.eu/Publications/Consultation-Papers/All-consultations/CP31-CP40/CP40/Responses-to-CP40.aspx

Companies welcome the differentiation in the role of a credit institution as hedge counterparty. Comments were received on the issues that might arise when credit institutions seek to determine if their role as hedge counterparty results in the assumption of credit risk. At the same time companies expressed their reservations on interest rates and currency swaps that are used as hedge instruments against forex and interest rate exposures. They don't want these hedges to be considered as bearing credit risk. Paragon commented – "*the differentiation should be whether any hedge directly mitigates or reduces the exposure to the retention. To avoid doubt, it should be confirmed that all such FX swaps and similar interest rate hedges, hedging the interest and FX risk characteristics within the securitisation deal, should not be considered as assuming risk arising from principal losses, and therefore are allowable under the CRD*."

Companies do not find guidance in Article 122a to be adequate in fulfilling the retention requirement in the case of securitisations of exposures from multiple originators, sponsors, or original lenders.

Febelin and Lloyd bank do not want the retention requirements to ABCP transactions where multiple originators sell receivables to a securitization vehicle. Uni Credit Group suggested that "*the original driver for the penalisation through a retention requirement was the originate-to-distribute model. This model, however, does not apply to corporate finance transactions refinanced with ABS/ABCP*."

RZB wants "*originators should have the opportunity to change the way in which they retain 5%. It argues that if originators can decide at closing on the retention method the same should be valid while the transaction is running*."

Uni Credit group "*agrees with an inclusion of excess spread tranches and interest only tranches to form part of the self retention. In the case of synthetic excess spread tranches the retention is fixed and therefore can form part of the demonstration of the self retention."* Lloyd Banking Group seconds this view.

Lloyd commented that "*in securitisations of trade receivables, originators commonly absorb losses by purchasing external credit insurance (mainly to achieve off-balance sheet treatment)*. It believes that *it is part of the normal operating business insurance that a nonbank originator would take out*. It wants to be clear that *such insurance is not treated as a "hedge" of the underlying exposures, but is instead a legitimate and prudent part of insuring an operating business*." Febelfin considers that "*restriction on hedging should be limited to hedges with identical characteristics to the exposures retained as originator or sponsor*."

All the companies agree on that retention of 5% of each securitised exposure would constitute an overall 5% economic interest in the securitized loans. This is in interest of the investors.

In the context of re-securitisations Uni Credit Group believes that "*a single retention on the level of the 'first' securitisation is sufficient to secure originators' ongoing interest in the securitised assets. A second retention would not add further value as on the second level no active role can be played with respect to the securitisation positions i.e. a sponsor/originator of a re-securitisation has no influence whatsoever on the performance etc. of the securitisation position that it uses for its re-securitisation*."

Lloyd bank also writes on the same line – "*the intention is to ensure that reckless credit granting does not lead to poor credit quality notes. This is addressed by retention occurring at the credit granting stage as required by Article 122a. To require retention beyond this stage serves no useful purpose to the investors or the economy*."

RZB believes that "*Repo transactions should be possible without violating the retention requirements. Even if in some jurisdictions the legal title passes to the repo counterparty, in effect, it is a secured lending with the obligation of the originator to repurchase the bond. The repurchase price should be independent from the portfolio performance; therefore no credit risk is transferred. .*"LLoyd Bank and UniCredit Group also conform to this view.

Companies find the requirement that sponsors should be aligning with the credit granting rules, whether they are credit granting or not, to be very demanding. Uni Credit group questions the due diligence of the regulation – "*Why should a bank apply the same origination standards as a supplier of Auto parts or a 'do it yourself market'? A sponsor should only demonstrate that it has knowledge of, and has assessed the underlying origination standards*" Lloyd Banking Group seconds this opinion by commenting - "*the sponsor does not track or oversee the origination or collection of individual receivables. Rather it monitors performance of the overall portfolio and if there is any deterioration, makes additional specific enquiries as required in respect of the seller's operations.*"

5.2.6.3 Analysis and Comparison

The European investor based approach puts the onus mainly on credit institution investors regulated under the CRD to ensure both that

(i) the sponsor, originator or original lender in any securitization transaction in which such credit institution investor invests makes the necessary retention representations

(ii) such credit institution investor itself has a comprehensive and thorough understanding of the risks and details of the transaction

The US Dodd Frank Act places more responsibility directly on the originators and securitizers of securitization transactions. The Dodd-Frank Act does not mention the extent of the extraterritorial application of the retention rules and on the applicable penalties for breaches.

	CRD	Dodd Frank Act
Securitizer	Not defined	defined to include both (i) the issuer of the asset-backed securities and (ii) any person who organizes and initiates an asset-backed securities transaction by selling or transferring assets to the issuer
Originator	defined as an entity which either itself or through related entities, directly or indirectly, was involved in the original agreement which created the obligations or potential obligations of the debtor or potential debtor giving rise to the exposure being securitized or an entity which purchases a third party's exposure onto its balance sheet and then securitizes them.	defined to include any person who, through the extension of credit or otherwise, creates a financial asset that collateralizes an asset-backed security and sells the asset-backed security to the securitizer
Sponsor	defined as a credit institution other than an originator credit institution	Not defined

	that establishes and manages an asset-backed commercial paper program or other securitization scheme that purchases exposures from third-party entities.	

CRD does not permit a sharing of the "skin in the game" by asking each originator or sponsor to retain 5% of the risk. In contrast Dodd Frank Act places the retention obligation initially on the securitizer, but provides the regulators with the flexibility to determine whether the retention obligation should be split between the securitizer and the originator (or assigned only to the originator). Any portion of the retention obligation which is transferred to an originator by the regulations will be subtracted from the required retention level of the securitizer, thereby allowing a sharing in the "skin in the game".

CRD and the Dodd-Frank Act prohibit securitizers from hedging or otherwise transferring the credit risk required to be retained with respect to any securitized asset. However, regulators may provide for particular exemptions in the regulations to be enacted.[88]

The CRD relies on the investors to make a sound investment decision by acquiring information from the originators or the sponsors. In contrast, Dodd Frank Act demands the regulators to define the disclosures and to enact specific rules for various asset classes.

Unlike CRD, the Dodd-Frank Act gives the regulators broad powers to enact exemptions to the risk retention requirement for certain asset classes or types of transactions, so long as such exemptions help ensure high-quality underwriting standards and encourage appropriate risk management by securitizers and originators.

The Volcker Rule may become an impediment to many types of securitizations which would not in any way be considered as "hedge funds" or "private equity funds" in the market's understanding.

5.2.6.4 Author's Opinion

"As the securitisation and re-securitisation have been identified as the core cause of the financial debacle, it is expected that financial institutions in this market would bear the maximum brunt. The regulators have again concentrated on obtaining more information from the system (sponsors/originators/securitizer), which I feel is not sufficient. One of the questions to be asked is if the regulators possess enough resources to analyse the data or information available from the market.

Also with re-securitisation of products, information loss will occur at each step. The information, even if available, will not be a reflection of the true nature of the underlying asset. In my view re-securitization does not add any value to the market. It simply shifts the risk from one party to another rather than mitigating it. Consequences of not applying 'skin in the game' rule to re-securitization can be dire, as packaging and warehousing activity will now start taking place at a higher level of CDOs. Also this higher level packaging has no limit and can be dangerous.

Giving individual regulatory bodies the powers to enact exemptions opens the option of lobbying at the regional level."

6 Conclusion

After understanding the factors behind the crisis, it would be safe to say that all the factors had some contribution in moulding the crisis. It is always difficult to differentiate between causes and effects.

6.1 Building up of the crisis

Rising House Prices

There is no doubt that the origins of financial crisis lie in the US. Housing prices started going up in 1990s. Household income started to divert into home investments and savings came down in the US. Similar story was being seen in the EU. As the housing prices rose, consumers flocked to buy homes before getting too late. This rush for housing ate into their savings. Found in a need of loans to finance their homes, consumers went to finance companies for funding. Finance companies or the loan originators were happy to give loans keeping homes as collateral as long as real estate prices climbed up.

Monetary Policy

The monetary policy of the US was stimulative for a long time which allowed easy credit in the financial system. The federal funds rate were kept low a long enough to create an asset bubble. The low level of nominal and real interest rates in the US and global economy contributed to the boom in the housing market.

Global Saving Glut

Add to this boom the interest the other countries showed in the US economy. As the savings in the emerging and oil producing economies increased, the excesses were invested in the US economy. The demand for investments in the US increased out of proportions as economies demanded to reap maximum profits out of their investments. At the same time US securities were considered the safest in the world, which added to their demand. The capital inflows in turn drove down real interest rates and enabled the excess consumption and speculative excesses in the US

Financial Innovation

As real estate prices rose, demand for credit increased. The credit started pouring to the lower income sections of the society (sub prime). Loan originators found the buyer of their loans at the Wall Street.

As financial innovation gained strength, new products were developed to finance the loans cheaply and efficiently. The so called 'originate-to-distribute' model relieved the loan originators of the responsibility of due diligence of the borrowers. Wall Street offered products which could package these loans and slice them into different tranches (CDOs) with varying risk-return profiles.

The onus of due diligence as a result shifted to the next investor in these securitized products. The investment banks were happy to act as broker-dealers to pool and structure ABS into CDOs. The long-term assets such as mortgage-backed securities and CDO's were financed by issuing short-term liabilities such as asset-backed commercial paper (ABCP) and overnight repurchase agreements. The warehousing was facilitated by trading books and short-term funding (eg: repurchase agreements or overnight borrowing). The only task to be performed by investment banks was to price the risks appropriately so that securities could be sold off efficiently.

Investment banks also moulded their organisational structure to benefit from securitized products. The rapid growth of these securities within off-balance sheet entities called Structured Investment Vehicles (SIVs) also led to large increases in the size of the issuing institutions without a matching increase in capital. The lower capital requirements associated with such SIVs allowed investment banks to dramatically increase their effective leverage ratios. Since investment and commercial banks were able to offload their loans (assets) from the balance sheets, the regulatory capital could be reduced, thus making the balance sheets slender and flexible. Also the return on equity could be boosted by borrowing short term and gaining higher returns from their investments.

Credit Rating Agencies

In order to advertise the various tranches according to the risks, investment banks paid credit rating agencies to rate their products. On the assumption that house prices will grow in the US, CRAs concentrated only on the idiosyncratic risk of the securitized products.

Investment banks could mould the loan pools according to the ratings they desired. CRAs obliged them with offering non-core advisory services.

Hedge Funds play their role

The investment banks found the buyers of various tranches in hedge funds. Hedge funds, looking for higher than market returns were buying 'equity tranches' of the loan pools. These equity tranches being the most risky provided highest returns. They could get higher leverage from the prime brokers (investment banks) and boost their returns.

As a result, hedge funds were the liquidity providers in the market of securitized products.

Derivatives

Hedge funds used derivatives aggressively to leverage their returns. Using active trading approaches (like arbitrage trades) they were helpful in correcting the mis-pricings in the market.

The derivatives were mainly traded over-the-counter thus escaping the transparent trades on the exchanges. There were no regulations which required derivatives to be mandatorily traded on exchanges. Also there were no exchanges for derivatives. The investment banks, hedge funds and other market players were using the opaque OTC markets to trade in structured and complex products.

Lack of transparency and complexity of the products made it difficult to price them efficiently. The regulatory bodies had no tools to supervise the trades and identify the anomalies in the markets.

6.2 The crisis strikes

As the euphoria over increased wealth was being celebrated, the savings of the households were declining. They dropped to a point where a further drop was impossible. As a result the demand for housing started falling and the sub-prime borrowers started defaulting on their loans. The securitized loan pools were unable to absorb the losses and buyers of 'equity tranches' decreased in number. The holders of these tranches had massive unrealised losses.

The financial institutions who had invested in sub-prime securitized products had to now fulfil the margin calls. The investment banks all over the world (especially European banks) were facing liquidity problems as they were unable to fulfil the margin calls. Rolling over the short term commitments became difficult as liquidity dried up.
When the crisis struck, the immediate assessment of regulatory bodies was that there was lack of liquidity in the markets. They opened the credit lines between the banks to mitigate the fear of bank runs.

As banks were forced to move the SIVs onto their balance sheet or were unable to roll-over their short-term liabilities, their leverage ratios increased further. Solvency issues came to the forefront when major financial institutions (like Lehman Brothers) found themselves in dire need of capital. Investment banks like Lehman did not have short term liabilities insured like commercial banks. They were not able to refinance their assets as rumours about huge losses on long term assets spread.

Pricing of these products, which seemed correct before, suddenly became difficult. The markets were unable to correctly price the risks associated with subprime mortgages. Repeated securitization can be said to be responsible for the informational distance between the ground reality and final investors.

6.3 Regulatory Changes- Are they appropriate?

As the crisis deepened, the regulatory bodies were under pressure to take immediate measures to bring the financial system out of uncertainties. The first measures were related to pumping liquidity in the markets. This was done by insuring the commercial deposits, buying the distressed mortgage portfolios of the banks through liquid government securities.

Institutions identified to be 'systemically important' were bailed out or taken over by the governments using the taxpayers' money. Some of most important ones were AIG, Fannie Mae, Freddie Mac in the US. In the EU banks of Iceland, Bradford & Bingley, Dexia, ABN-AMRO and Hypo Real Estate were the biggest bailed out institutions.

During the time when ramifications of financial crisis were being evaluated, regulatory bodies were doing their assessments of the crisis. As the reports from assessment committees came out, governments started to propose regulations on financial system.

Various factors/causes were identified for the crisis. The new regulations try to overcome most of the shortcomings of the financial system.

The regulatory bodies identified lack of transparency in the financial system as the basic problem that hindered effective oversight of the institutions. The complex structure of the securitized products did not allow purchasers of MBS to correctly evaluate the quality of underlying assets and to understand the risks involved.

The regulatory bodies identified the lack of regulations in the sector to be a factor that increased the reliance on ratings offered by CRAs or NRSROs. As these agencies were being paid for their services by the issuers of products being rated, regulatory found 'conflicts of interests' and the tendency to 'ratings shopping' to gain higher ratings for the products.

The incorrect estimation of risks led to the debacle according to the assessment. Add to this the vulnerability of the financial institutions due to high leverage ratios (made to look manageable through off balance sheet instruments).

The regulatory bodies responded to the above factors by requiring mandatory registration and disclosure rules for all the institutions. Derivatives, hedge funds and securitizers bore the maximum brunt of the regulations. Also the enhanced capital and liquidity requirements for financial institutions formed major part of the regulations.

Both the US and the EU have demanded more disclosure from hedge funds. These disclosures relate the use of leverage, assets under management, performance of the fund, procedures adopted fro risk management, types of assets held and trading practices.

It can be said that regulatory bodies have applied 'one size fits all' approach without taking into consideration the various types of funds doing business. There has been no differentiation made between venture capitalist funds, commodity funds etc. This lack differentiation can be felt more with the EU regulation as compared to the US. Also it seems the EU is much more sceptical with the third country/foreign funds. While the US has been open to the third countries, the EU depends on more coordination with the third country regulators to allow foreign funds to provide services to the EU customers.

One striking aspect is that there have been clear regulations which target the performance reporting of hedge funds. Hedge funds suffer from survivorship bias, backfill bias, etc. Better performance reporting is needed to protect the consumer.

More regulation does not affect hedge fund industry as they operate beyond territories. More documentation required for disclosure and registration might be hard to digest as more efforts would have to put on non-productive jobs.

One of the link-breaker regulations has been the prohibition of banks to operate hedge funds or use proprietary trading. This will benefit the regular hedge fund industry and keep investment banks much more transparent.

Securitized products were the ones hedge funds were feeding on or vice versa. One of the common approaches taken by regulatory bodies is more risk retention is the securitized products. The government guarantees have been exempted from the risk retention requirement. The assumption made here is that government securities are safer and risk free, irrespective of the country in which they originate. This assumption will have to be looked at with a bit of suspicion as the governments take over lot of illiquid/junk securitized products from the market participants to provide liquidity to the markets (eg Troubled Asset Relief Program). One will have to look at the governments' ability to repay the dues on these products.

Also in the EU, flexibility given to individual member states to decide on risk retention requirement seems to be misplaced as this will open the gates of regulatory arbitrage. But the very same arbitrage will bring the risk retentions in all the member states at the same level.

Although regulators have concentrated on more disclosures on asset-level and loan-level data, the issue of information loss that occurs at various levels of securitization has been ignored. Keeping the onus on investors to evaluate the data seems to be a precarious proposition. This will bring credit ratings agencies into play to evaluate the data available, thus feeding the nexus which brought down the financial system.

Credit ratings agencies should be seen as important service providers to the markets. But their ratings should not be relied on without any due diligence. Regulatory bodies have made a positive step to minimize conflicts of interest by asking the CRAs/NRSROs to disclose and differentiate the revenue earned between ratings and advisory services.

EU has again shown its suspicion with third country CRAs. The demands of co-operation between regulatory bodies of the EU and third countries do not look to be long term solutions to the problems. The problem of non-equivalence will arise as third party CRAs work under different regulatory oversight. Also financial institutions have full flexibility to use the third country credit ratings by working with financial institutions in third countries, thereby bypassing this regulation.

All regulatory bodies have demanded enhanced disclosures. It has been a common feature with regulations dealing with all the products and institutions. One has to question the resources available with the regulatory bodies to process the new and more information available. The ability to avoid any future crisis using the available information has serious doubts.

6.4 The road ahead – Financial system after the crisis and regulations

There is no doubt that more coordination in regulatory policies would be required at the global level. Special care would have to be given to the capital and liquidity requirements for financial institutions. The global nature of the financial system makes this coordination imperative.

The enhanced capital and liquidity requirements will be phased in along the next 5 years. Simply put, this should make the banks safer by providing a greater cushion to survive the mistakes and accidents from which they suffer. Also the phase in approach would avoid contractionary pressures on the economies.

The financial institutions have enough time to adopt their balance sheets to these new requirements. There is no denying the fact that funding costs of banks would increase under these requirements. Banks with international operations would have to satisfy the requirements under various jurisdictions they operate in. One the first look higher capital requirements will have the following effects:

- make it harder for businesses and individuals to obtain loans
- raise the cost of loans
- lower the interest rates offered to depositors and other suppliers of funds
- reduce the market value of the common stock of existing banks.

But knowing that banks are highly levered institutions, higher equity requirements will reduce the risk of banks and hence lower the returns demanded by the debt and equity investors. One can anticipate lower ROEs from the banks due to higher equity requirements.

The reduction of minority interest from Tier 1 capital seems reasonable as BHCs used debt (borrowed money) to invest in bank subsidiary as equity.

One factor that will always keep equity costlier than debt is the tax deductibility of debt. Also (partial) insurance offered by governments (eg FDIC) on the deposits makes debt a preferred choice of funding. Banks will, no doubt, have to retain higher amount of earnings and find new sources of equity financing.

It seems quite hypocritical on the part of governments that they make debt cheaper by preferential tax treatment and then try to regulate the same with higher capital and funding requirements.

It seems to be a good move by regulatory bodies to require banks to use long term funding sources and avoid short term wholesale funding (which will be replaced by equity). This move will bring in stability and avoid short term speculation.

Short term debt will always remains cheaper than long term debt as it reduces uncertainty and provides investors a liquidity advantage that they are willing to pay a premium for.

It was found that banks used off balance sheet structures (SIVs) to evade regulatory requirements. Enhanced regulatory burden and ever increasing competition may push the banks to a 'new shadow banking system'. There is a possibility that, under the new system, innovation would take 'credit creation' away from banking sector. In short, involvement of securitization cannot be fully eliminated.

For effective oversight, information sharing between the regulatory bodies would have to be improved to avoid arbitrage. As emerging economies gain strength in the financial system, their involvement in regulatory coordination becomes inevitable.

6.4.1 Global Financial System

In order to come out of the crisis, there needs to be increase in consumer demand followed by increase in output. The decoupling of emerging economies from advanced economies seems improbable. In order to decouple BRIC nations would have to return to high growth with poor recovery in advanced economies. Strong export links still exist between emerging and advanced economies which makes the high growth possible only when demand for their exports grows in countries like the US and the EU.

Rebalancing of current account balances between the countries is crucial for global economic recovery. But this seems difficult as various economies operate on different models. Savings in emerging economies still remain strong. This is due to the fact that insurance system in these countries is not well developed. Higher savings reduce the consumption in local economy. In order to grow, opportunities have to be found abroad by making the exports cheaper and sell them where demand exists. In advanced economies savings rates are low and hence these economies thrive on higher consumption.

After the crisis, governments in advanced economies took away the debt burden away from the market on to themselves. They have done that by various methods. Some of them are as follows:

- Using schemes like TARP (in the US) that bought distressed securities from banks
- Allowing exemptions to government guarantees in risk retention framework
- Lower capital and liquidity requirements if financial institution holds government securities. At same time, relatively penalising corporate bonds and other securities that might be safer.

All the above measures create artificial demand for government securities. This will bring in price anomalies and does not auger well for the financial system.

Sustained recovery in the United States and elsewhere eventually requires rebalancing from public to private spending. But as government try to unload the debts (accumulated now) in the future, they compete with the private financial institutions. Private financial institutions will again find it hard to compete as they will find fewer buyers of their securities as compared to the government securities.

There is an inherent problem in the current financial system that government debt is considered to be safer than private debt. Also the government debt of all the countries is considered the safest investment to make.

One of the characteristics of bailouts of EU countries (PIG nations) has been requirements of government austerity measures demanded by ECB/IMF. Governments will have to reduce expenditures and mange their financing. But if governments refrain for too long from spending, consumer demand in these countries might suffer and recovery might be sluggish. As a result, these governments might struggle to pay off their debts.

The above trends suggest, we might be moving from financial crisis to more severe sovereign debt crisis.

7 Appendix

7.1 The Credit Intermediation Process

First, loan origination (that of auto loans and leases, or non-conforming mortgages, for example) is performed by finance companies which are funded through commercial paper (CP) and medium-term notes (MTNs).

Second, loan warehousing is conducted by single- and multi-seller conduits and is funded through asset-backed commercial paper (ABCP).

Third, the pooling and structuring of loans into term asset-backed securities (ABS) is conducted by broker-dealers' ABS syndicate desks.

Fourth, ABS warehousing is facilitated through trading books and is funded through repurchase agreements (repo), total return swaps or hybrid and repo/TRS conduits.

Fifth, the pooling and structuring of ABS into CDOs is also conducted by broker-dealers' ABS syndicate desks.

Sixth, ABS intermediation is performed by limited purpose finance companies (LPFCs), structured investment vehicles (SIVs), securities arbitrage conduits and credit hedge funds, which are funded in a variety of ways including for example repo, ABCP, MTNs, bonds and capital notes.

Seventh, the funding of all the above activities and entities is conducted in wholesale funding markets by funding providers such as regulated and unregulated money market intermediaries (for example, MMMFs and enhanced cash funds, respectively) and direct money market investors (such as securities lenders). In addition to these cash investors, which fund shadow banks through short-term repo, CP and ABCP instruments, fixed income mutual funds, pension funds and insurance companies also fund shadow banks by investing in their longer-term MTNs and bonds.

7.2 Regulatory Capital

The capital requirement is a bank regulation, which sets a framework on how banks and depository institutions must handle their capital. [89]

Constituents of Capital

1. Tier 1 Capital (Core Capital or basic equity)
   This is the key element of capital in which the main emphasis is on equity capital and disclosed reserves. The following table shows the main components of Tier 1 capital before CRD IV. They were part of Basel II accord as well.

Common stockholders' equity
Qualifying perpetual preferred stock
Qualifying mandatorily redeemable securities of subsidiary trusts
Minority interest
Accumulated net gains on cash flow hedges, net of tax

Intangible Assets (like Goodwill)

2. Tier 2 Capital (supplementary capital)

   This is a temporary capital and forms second most reliable form of capital. Supplementary capital can be considered tier 2 capital up to an amount equal to that of the core capital.

Undisclosed Reserves
Revaluation Reserves
General Provisions/general loan-loss reserves
Subordinated debt
Hybrid debt capital instruments

3. Tier 3 Capital (Short-term subordinated debt covering market risk)

   This tertiary capital is used to support market risk, commodities risk and foreign currency risk.[20]

[20] From http://www.investopedia.com/terms/t/tier3capital.asp

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