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Retail banking crises and Credit Risk Management

United States vs. Lebanon case

A Thesis Submitted in Partial Fulfillment of the Requirements for the Joint Degree of the Master of Business Administration (M.B.A.) and the Master of Science in International Business (M.I.B.)

Elias Fares Younes

NDU-Lebanon

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Approval Certificate

Retail banking crises and Credit Risk Management

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BY

Elias Fares Younes

Approved:

Signatures: _____

Supervisor

_____

Reader

NDU MBA/MIB Academic Committee: _____

_____

Assistant Dean, FBAE

NDU MBA - MIB Program FBAE

Bordeaux Management School: _____

_____

DECLARATION

I hereby declare that this Memoir is entirely my own work and that it has not been submitted as an exercise for a degree at any other University.

ELIAS FARES YOUNES

ABSTRACT

This case is important because it sheds the light on the key issues that need to be in place in order to reduce the risk of credit default. If we are to understand the profound significance and the contribution made by lack of Credit controls, the easy credit terms of banks to grant credit facilities and the loosened government legislations that govern the whole lending activity, then we will learn how the Credit Crises was driven and accumulated over the years. On the other hand, we will ensure how a controllable lending environment that is well managed will generate healthy borrowings and serves its profound aim.

This study will present the case of the United States housing bubble. It will discuss the main reasons leading to credit defaults. It will address the role of the traditional depository banks versus the investment banks in carrying the lending activity. The study will discuss leveraging, Subprime Lending, deregulations and other forms of practices that lead to future unbalanced credit portfolios. On the other hand, methodology continues to present the Lebanon situation in light of the tremendous increase in the prices of real estate. How banks are interacting with the situations, how credits are being granted and how lending portfolios are being monitored and controlled.

The study will discuss leveraging, Subprime Lending, deregulations and other forms of practices that lead to future unbalanced credit portfolios. On the other hand, methodology continues to present the Lebanon situation in light of the tremendous increase in the prices of real estate. How banks are interacting with the situations, how credits are being granted and how lending portfolios are being monitored and controlledConsequently, all information obtained showed many challenges that bank's should face while prices of real estate are booming. Accurate measures should be placed in order to avoid unforeseen risks. The study showed how close credit monitoring, avoiding reckless banking behaviors would drive legitimate lending portfolios and is the essential drivers to control risk and avoid threats of any possible failure.

Keywords: Retail Banking Crises, Housing Bubble, Credit Risk Management, Lebanese Banking Sector, Risk Monitoring and Control

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Chapter One

Introduction

1.1 General Background

During the past period between the years 2004 till 2009, the United States banking system had undergone a huge Retail Lending activity and the volumes of business had increased massively overcoming the capacity of traditional depository banks which rely on the customer's deposits in order to exercise their lending activity, and where their exists tight measures and controls to govern the overall lending structure. It had rather reached investment banks where the lending had grown massively and lead to exercising less and less controls over the risk involved thus providing housing loans in huge amounts to less qualified customers.

In the same way, investment banks started exercising Subprime lending, increasing consumer leveraging, increasing the limits of individual unsecured lending to customers with less qualified financial standards. At the same time, they recklessly provided huge ticket sizes of housing loans that overcomes the capacity of the customers to bear.

All the above had created the housing bubble which grew over and over until it reached a faze where customers were not being able to bear their continuous monthly financial commitments and situation started deteriorating.

On the other hand, we have seen that the banking system in Lebanon had flourished in the same period and had explored tremendous profits. At the same time, the real state has boomed leading to major increases in the price of individual homes. Banks are financing the major housing lending activity which seems to be quite controlled with no over leveraging. What exactly happened in the U.S? How banks had operated? What was the real cause of the U.S. banking crisis? Will Lebanon face the same fate of the U.S? Are local Lebanese banks exercising the right policies? Are Credit controls in

place? Is there the right legislation to stop any reckless activity? The answer will be in the upcoming chapters of this Thesis.

1.2 Need for the study

The Thesis will be discussing the major causes behind the recent World Wide Retail Banking Crises. It will be presenting the United Sates particular case addressing the various practices implemented by the U.S. banking system, investment banks, government regulations and legislations pre the crises and which fueled up the disaster and helped the financial bubble to grow and lead to the uncontrollable situation.

The U.S. Banking system was being managed in a variety of activities starting with Subprime lending, over Leveraging, applying high Debt Burden Ratios over borrowers, exercising predatory lending activity, defying the normal government regulations and safe lending controls. On the other hand, Investment bank's coming up with complex financial instruments that would provoke risky lending procedures.

The thesis will start defining "Credit Risk Management" (CRM), then start defining the major principles of CRM, present its processes and discuss the controls that should be present in any financial institution in order to exercise full control over the lending activity and provoke a healthy lending environment. The study will address how if the lending environment is well managed would deprive the lending firms from huge and uncontrollable future risks and implement a traditional banking system that is well structured and regularized away from sophistications and complicated financial instruments.

1.3 Purpose of the study

The above had raised the curiosity to study the overall situation. Go deep into the analysis and explore the reason behind the extreme difference in both situations.

The thesis will shed the light over the subject of Retail Lending, its practices, controls, risk analysis, role of risk functions, regulating bodies that control the lending activities, government and officials' intervention and all the other external factors such as economy, regulations, customers and all other parties involved.

The thesis will further discuss the negative role that investment banks played in creating the bubble. Those banks which linked through their financial instruments short term borrowing to long risky investments which could be difficult to evaluate and consequently to price.

When analyzing the case, it shows that Lebanon explored a different scenario to what had happened in the United States due to many variant factors which will be discussed thoroughly in the following chapters.

1.4 Brief overview of all chapters

Chapter One embodies the introduction of the study. It sheds the light over the recent world wide Retail Banking crises examining the U.S. case and directing the attention towards Lebanon situation and raising the question of variance in both lending cultures and the general macroeconomic situations that govern both economies separately.

In Chapter Two, describes the various studies conducted about the subject. Then it will carry on to describe Credit Risk Management, address the five Credit principles and how they were violated causing the bubble to grow. Then it will discuss the six risk processes, their mandatory application by financial intuitions in order to mitigate for future losses. Then the chapter introduces the subject of "Risk Control" and describes the role of the risk function in controlling lending portfolios. It will discuss how to keep close control over it in order to maintain the proper boundaries over its activity. Then the Chapter will go further to elaborate on the risk mitigation tools and capital adequacy , and it discusses the proper monitoring that should be exercised in order to keep portfolios away from potential future losses.

Chapter Three addresses the United States Financial bubble/crises. It gives us an overview about the whole situation. It will then identify the market players and the role of each party in contributing to the crises establishment. Then the study will go further to designate the major reasons leading to the crises event. It presents testimonies and elaborations of Economists, Government Officials and Senior managers in the banking sector.

In Chapter Four the thesis sheds the light over the Lebanese situation. It presents how the market operates and how it possessed solid banking infrastructure. Then it will address the increase in the rise of the real estate affecting the home prices. The banking system robust policies and close control over the activity of banks operating in the market. Then, it will provide the series of Central Bank circulars that banks had to abide by and operate according to its directions. The study continues to show why the Lebanese market was not affected.

Chapter Five will derive conclusions and recommendations deriving from the United States case and the Lebanon case. At the same time, it will expose the basic credit principles that banks should abide by in order to avoid risky lending activities.

Chapter Two

Credit Risk Management Policies and Procedures

This chapter will shed the light over the subject of 'Risk' in Retail Lending and will provide guidance on sound practices in credit risk management. For this purpose, this chapter will start defining 'Credit Risk' and 'Credit Risk Management', its principles, processes, elements, applied practices, level of control, risk analysis, and the risk function.

It will also articulate broad principles that should be embedded in a risk management framework.

2.1 Definition of Retail Banking

Retail Banking is a banking Service that is intended primarily towards individual consumers. Thus, Retail Lending includes all loans extended to customers for their own personal expenditures. In this context, Retail lending includes Personal Loans, Car Loans, and Home Mortgage Loans and Credit Cards loans. All of these loans are extended to customers for their personal usage. Home mortgage loans are residential loans taken by individuals to finance the purchase of homes that they would reside in and doesn't include commercial mortgage loans where the customers borrow loans to buy real estate properties in an anticipation of selling them in the future to generate profits.

2.1.1 Credit Risk

Credit risk is the risk arising from the uncertainty of the borrower's ability to perform its contractual obligations in accordance with agreed terms. It is the risk of loss due to the borrower's non-payment of a loan or other line of credit. Thus, credit Risk should be managed properly in order to avoid the borrower's payment default. For most banks, loans are the largest and most obvious source of credit risk; however, other

sources of credit risk exist throughout the activities of a bank, including in the banking book and in the trading book, and both on and off balance sheet. Banks are increasingly facing credit risk in various financial instruments other than loans, including acceptances, inter bank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the extension of commitments and guarantees, and the settlement of transactions.

Since exposure to credit risk continues to be the leading source of problems in banks world-wide, banks should adopt a holistic approach to assess credit risk and ensure that credit risk management is a part of an integrated approach to the management of all financial risks. Banks should establish a risk management framework to adequately identify, measure, monitor, and control credit risk. Adequate capital should be held against credit risks assumed. The institution should also comply with all relevant rules, regulations, and prudential requirements.

2.2 Credit Risk Management (CRM)

2.2.1 Definition and Scope of CRM

By definition, Credit Risk Management thereafter referred as 'CRM' "refers to the set of bank-wide end-to-end activities through which risk-taking decisions are made and the risk-reward profile of the organization is controlled and optimized" (Lawrence and Solomon 2002).

In other words, CRM involves all the specific actions undertaken in all the departments of the financial institutions, all decisions being made, and the quantitative analysis of the risk involved in each decision and action taken. In each decision there is a balance between risks and rewards.

The goal of credit risk management is to maximize a bank's risk adjusted rate of return (RAR1) by maintaining credit risk exposure within acceptable parameters.

The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long term success of any banking organization.

2.2.2 Credit Risk Management Principles

Financial institutions have faced difficulties over the years for multitude of reasons; the major cause of serious banking problems is directly linked to lax credit standards for borrowers. Poor portfolio risk management will lead to deterioration in the credit standing of a bank's counterparties.

As a fact, banks have internal and external environments within which they interact. Internal policies, decisions, strategies are factors that are controllable and can be more or less measured and can be quantified. On the other hand, the external environment of the bank is a serious element to study which includes competition, Geopolitics, country risk etc....

Within the bank, various departments may be involved in these relationships and transactions, but the risk team must assess and mitigate the associated risks. In fact, there are five Credit Risk Management Principles which should be always be abided in order to decrease the credit default risk.

Balancing risk and reward: it means that the manager should take risk in line with the requirements of the stakeholders and in support of achieving the institution strategic intent, and within its risk appetite. Risk appetite means the amount of risk

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[1] *RAR = Gross Return% - Risk %

Gross Return % = Revenue /Average Balance (annualized)

Risk % = Net Bad Debts / Average Balance (annualized)

exposure that the bank allows accepting. The basic rule is to avoid taking risks which have a material probability of causing financial distress. Once risk appetite threshold is breached, risk management treatments and business controls should be implemented to bring the exposure level back within the accepted range.

Any action taken by managers should be well studied weighing its odds and evens. It is always mandatory to follow the stake holder's strategy and work in line with the overall direction of the company.

Responsibility: requires taking individual responsibility not only to ensure that risk-taking is disciplined and focused, particularly in the area of authority, but also to ensure the health of the company. In addition, responsibility requires taking risks in account of the social responsibilities to produce a return. There are many parties involved in the activity of any financial institution. Therefore, managers should take into account those many parties' interests and their concern in running a business activity to safeguard the interests of all parties concerned.

Accountability: mandates to take risk within agreed authorities and where there is appropriate infrastructure and resource. Risk taking should be transparent, controlled and reported. All actions pertaining to risk taken should be documented in black and white and should be well versed and informative. Managers are accountable for their actions and so everyone down the corporate ladder. Taking risks within controllable limits is mandatory for the life of the institution.

Anticipation: means to anticipate material future risks and maximize awareness of all risk. Anticipation requires long term thinking and well built strategies in order to overcome any external unlikely issues and provoked risks. Long term thinking and well studied market provides a full market picture and allows the institution to operate on solid ground.

Competitive Advantage: should be always a key element and should be exercised through efficient and effective risk management and control. In a fierce market

competition, the competitive advantage of the company dictates its survival and its presence among competitors. The presence of the CRM principles is essential for any lending firms.

2.2.3. Risk Management Processes

Since the exposure to credit risk continues to be the leading source of problems in banks worldwide, banks and their managers should be able to draw useful lessons from past experiences. Banks should have a keen awareness of the need to identify measure, monitor and control credit risk as well as to determine that they hold adequate capital against these risks and that they are adequately compensated for the additional risks incurred. There are six core processes in implementing the CRM which are classified as follows:

Inform: identify, measure and monitor all material risk to inform risk-reward tradeoffs and ensure that transactions and portfolios remain within allocated risk appetite limits.

Plan: Set risk appetite in line with strategic objectives ; manage the process whereby the bank decides how much risk it wants to take on, where it wants to assume that risk and how it will prepare for it.

Control: Set parameters to keep risk profile within risk appetite; maintain and enforce a governance framework that provides clear guidelines and firm boundaries for individual and collective risk-taking; and ensure that managers maintain the risk profile within the Risk Appetite.

Originate: Structure and book financial risks; price and acquire risks to achieve an optimal and transparent tradeoff between risk and reward over the lifetime of the portfolio.

Rebalance: Continuously assess the shape of the portfolio of risks in response to internal and external factors to improve its overall risk efficiency; continuously improve the risk

efficiency; continuously improve risk processes (esp. around collection and recovery) to improve their cost efficiency and effectiveness.

Communicate: Influence, interpret and demonstrate compliance with external stakeholder requirements related to risk management; work closely with regulations and other stakeholders to maximize the strategic and operational flexibility and efficiency, within the boundaries of the legal and regulatory environment.

2.3 Definition of Risk Control

Risk control refers to the set of activities designed to ensure that the bank determines a risk appetite and constrains its risk exposure so as not to exceed that pre-determined appetite, thereby avoiding financial distress, or impact of reputational or regulatory fall-out. Risk Appetite is the bank's chosen balance of risk and return, recognizing a range of possible outcomes. Financial distress is where financial losses are on a scale which results in material constrain and diverts banks from pursuing their chosen strategy. This is likely to occur if losses are in excess of the risk appetite. (Colquitt, 2007)

2.4 Role of the Risk Function

Risk function is responsible for upholding the integrity of the bank's risk/return profile, and in particular for ensuring that risks are properly assessed and that risk/return decisions are made transparently on the basis of this proper assessment, and are controlled.

Risk function is an independent function that ensures that the necessary balance is maintained in risk/return decisions in the face of short-term pressures. This is required because revenues are recognized immediately while losses may only manifest themselves over time.

The risk function should implement various activities and conduct sound practices that address the major several areas such as: establish an appropriate credit risk environment; operate under a sound credit-granting process; maintain an appropriate credit administration; measure and monitor process; and ensure adequate control over credit risk. Therefore, in order to establish a comprehensive CRM program, the above should be practiced in conjunction with sound practices related to assessment of lending quality, adequacy of provisions and legal reserves.

In particular the Risk function should undertake in precise the following continuous actions:

Independently control risk management processes to ensure discipline and consistency with risk standards, policy and risk appetite.

Inform & Challenge business strategy, material decisions and processes to encourage rigor, quality optimization and transparency in relation to risk efficiency.

Advice on risk management frameworks, the structuring of products and transactions, and on the assessment and measurement of risk

Facilitate & Manage risk processes to ensure operational efficiency, effectiveness and best practices

Communicate with stakeholders to demonstrate compliance with requirements in relation to risk management

Recognize uncertainty of outcomes. Risk Appetite is the chosen balance of risk and return recognizing a range of possible outcomes

The above definitions of Credit Risk, Risk Processes, Risk Control and Role of Risk functions will give us tangible proofs, during the course of the thesis, how these principles were violated leading to severe consequences and financial losses.

2.5 Credit Risk Measurement

When someone is in need of financial help, one usually goes to a lender or a bank for a loan. However, not everyone who applies for one is approved. Why is this so? Banks have a system to determine and compute how much they would be risking in losses, should the debtor fail to pay. This practice is called the credit risk measurement. But how do banks measure credit risks?

In reality, banks have been developing different models and devoting resources to improve their calculation of such economic and financial threats. Because of this, bank regulators have begun to regulate and validate these models by imposing rules and standards for regulatory capital functions and computations. The size of the loaning party is taken into consideration when organizations compute the credit risk. However regardless of the size, they must take into account three factors.

1. Probability of default: this is the possibility of failure to pay over the period stipulated in the contract. The computation for that year may be termed as the projected default rate.

2. Exposure of Credit: how big the amount of debt will be when default occurs.
3. Estimated Rate of Recovery: what portion of the debt can be regained through freezing of assets and collateral and the like when default transpires.

2.6 Credit Granting

Institutions or banks should have well-defined established criteria for approving new credits and for the renewal of existing credits. These criteria should include a clear indication of the bank's target market and a thorough understanding of the borrower or counterparty, as well as the purpose and structure of the credit, and its source of repayment. The criteria should set out who is eligible for credit and for how much, what types of credit are available, and under what terms and conditions the credits should be granted.

Banks must receive sufficient information to enable a comprehensive assessment of the true risk profile of the borrower. The main factors that should be considered and documented in approving credits should include:

The purpose of the credit and sources of repayment

The current risk profile of the borrower and collateral and its sensitivity to economic and market developments

The borrower's repayment history and current capacity to repay based on historical financial trends and future cash flow projections under various scenarios

The proposed terms and conditions of the credit including covenants designed to limit changes in the future risk profile of the borrower

The adequacy and enforceability of collateral or guarantees under various scenarios

In addition, in approving borrowers for the first time, consideration should be given to the integrity and reputation of the borrower and their legal capacity to assume the liability.

Banks need to understand to whom they are granting credit. Therefore, prior to entering into any new credit relationship, banks should conduct comprehensive assessments of the creditworthiness of the borrower to be confident that they are dealing with individuals or organization of sound repute. These should include analysis of the borrower's financial position as reflected in various financial and cash flow statements, assessing past repayment record, becoming familiar with management quality and integrity, checking relevant industry and macroeconomic data and asking for references from known parties. If the borrower is a corporation, adequate checks on the shareholders and company directors should be conducted. However, a bank should not grant credit simply because the borrower is familiar to the bank or is perceived to be highly reputable.

As shown above, the lending officer could look at infinite things; however, the most important factors are commonly known as the "5Cs"of credit. The person's expertise, subjective judgment, and weighting of certain key factors are the most important determinants in the decision to grant credit. Normally the credit experts analyze these five key factors, subjectively weight them, and reach a credit decision.

Character: A measure of the reputation of the individual, his willingness to repay, and its repayment history. In particular, it has been established empirically that the credit history and experience of the individual is a good proxy for the repayment reputation.

Capital: The equity contribution of the individual and its ratio to existing debt (leverage). This is viewed as good predictors of bankruptcy probability. High leverage suggests a greater probability of bankruptcy.

Capacity: The ability to repay, which reflects the volatility of the borrower's earnings. If repayments on debt contracts follow a constant stream over time, but earnings are volatile, there may be times where the individual's capacity to repay debt is constrained.

Collateral: In the event of default, a banker has claims on the collateral pledged by the borrower. The greater the priority of this claim and the greater the market value of the underlying collateral, the lower the exposure risk of the loan.

Cycle (or Economic) Conditions: the state of the business the individual is working at/with is an important element in determining credit risk exposure. Some industries tend to be more cycle dependent than others and this will tend to differentiate one person from the other.

In addition to these five "Cs", an expert might take into account the level of interest rates. It is well known from economic theory that the relationship between the level of interest rates and the expected return on a loan is highly non linear. When banks see more risk in individuals, they tend to increase interest rates in anticipation of the additional risk involved. On the other hand, when borrowers have good financial

standings, banks tend to give them the best preferential rates they could in order to attract them for loans. That was in particular the major fault that banks did in the United States since they were granting loans to less credit worthy individuals and did not apply the correct pricing of risk.

2.7 Risk Mitigation

As mentioned above, banks may use collateral and guarantees, among their instruments to help mitigate credit risks. However, collateral and guarantee s should not be used as a substitute for the comprehensive assessment of the borrower. The potential correlation between collateral values and the borrower's financial condition should also be considered, especially in asset-based lending. Specific proportions of financing should be established for different types of collateral. The quantum should be set at a level that provides sufficient cushion against a decline in collateral values. There should be periodic reviews to assess the value of the collateral and the appropriateness of the lending margin. An institution should exercise caution when extending credit against illiquid assets

Furthermore, when accepting guarantees for credit facilities, an institution should evaluate the level of coverage being provided in relation to the credit quality, legal capacity, and strength of the guarantor.

2.8 Credit Monitoring

Many of the assets held by a retail bank are subject to the risk of a fall in value below that recorded in the balance sheet. The main asset held by a retail bank is advances which are subject to the risk of default (or credit risk). Credit risk is exacerbated by the problems of adverse selection and moral hazard. It is also influenced by the stage of the economic cycle; credit risk is low when the economy is growing, and it is high when the economy goes into recession. The influence of the economic cycle represents the systematic (or macroeconomic) component of the credit risk facing banks.

In addition, banks face a borrower-specific component of credit risk. This is the risk that derives from the individual decisions of the borrower. Banks are able to monitor these specific risks by using the techniques outlined below.

Banks should have in place a system for monitoring the condition of individual credits. Key indicators of credit condition should be specified and monitored to identify and report potential problem credits. These would include indicators from the following areas:

Financial position and Business conditions: Key financial performance indicators on profitability, equity, leverage, and liquidity should be analyzed in addition to the operating environment of the borrower.

Conduct of Accounts: Banks should monitor the borrower's principal and interest repayments, account activity, as well as instances of excesses over credit limits.

Loan Covenants: The borrower's ability to adhere to negative pledges and financial covenants stated in the loan agreement should be assessed and breaches detected should trigger prompt action.

Collateral Valuation: The value of the collateral should be updated periodically to account for changes in market conditions. For example, where the collateral is property or shares, banks should undertake more frequent valuations. If the collateral is an inventory, appropriate inspections should be conducted to verify the existence and valuation of the collateral.

External Rating and Market Price: Changes in the borrower's external credit rating and market prices of its debt or equity issues could indicate potential credit concerns. Banks should monitor these factors and conduct a review whenever necessary.

In addition to monitoring the above factors, banks should also monitor the use of funds to determine whether loans are drawn down for their intended purposes. If the

borrower is utilizing funds for purposes not shown in the original proposal, the bank should determine the implications on the creditworthiness of the borrower. Exceptions noted during the monitoring process should be promptly acted upon and reported to management.

2.9 Credit review

Banks should perform regular credit reviews to verify that credits are granted in accordance with the bank's credit policies. This should be conducted with updated information on the borrower's financial and business conditions, as well as the conduct of account. Exceptions noted should be evaluated to see its impact on the borrower's creditworthiness.

Credit reviews should be performed at least once a year; or more frequent for new accounts or classified accounts2. Procedures should be instituted to ensure that reviews are conducted at the appropriate times.

2.10 Problem Credits

Banks should have processes, based on diligent credit monitoring and loan grading, to identify and manage problem credits at an early stage. Classified accounts should be managed under a dedicated remedial process. This process should comprise the following elements:

Review of collateral and security documents: Banks should ascertain the loan recoverable amount by updating the values of available collateral with the formal valuation. Security documents should be also reviewed to ensure the completeness and enforceability of contracts, collateral, and guarantee.

Formulation of Remedial Strategies: Depending on the size and age of a problem credit, appropriate remedial strategies should be established to revive and recover the credit.

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[2] Classified loans are loans graded substandard, doubtful, and at risk of loss.

These strategies should take into account the specific condition of the borrower and they may include rescheduling of payments.

Negotiation and Follow-up: As it implements remedial plans, banks should monitor their effectiveness through tracking follow-up actions.

Status Report and Review: Problem credits should be subject to more frequent review and monitoring. The reviews should update the status of the loan accounts and the progress of the remedial plan.

Banks should establish a separate unit to focus on problem credit management, separate from the loan origination function to ensure independence and objectivity in managing problem credits.

2.11 Managing Default Risk

Banks can manage default risk in a number of ways:

Screening: Banks can minimize the risk of default for each individual loan by considering the purpose of the loan and the financial circumstance of the borrower. The bank should be aiming at selecting good risks only. Credit scoring is increasingly being used by banks in the process of risk analysis; its advantage is that it can be largely automated. Credit scoring is a method of evaluating the credit risk of loan applications using a scoring model. The scoring model is developed using historical data to identify which borrower characteristics provide a good prediction of whether a loan performed well or badly. Each characteristic will be weighted in the model according to its importance in predicting default. Characteristics which might be used in a credit scoring model for personal loans include the length of time the applicant has been in the same job, monthly income, outstanding debt etc. In the past, banks used credit reports, personal histories and the bank manager's judgment to determine whether to grant a loan. Credit scoring is now widely used in personal lending, especially credit card lending and is increasingly being used in mortgage lending. The use of credit scoring has

enabled banks to make lending decisions over the telephone and so has facilitated the establishment of telephone-based banks,

Pooling: A Bank can undertake a large number of small loans rather than a small number of large loans. This is an application of the law of large numbers to the loan portfolio, which reduces the variability of loan loss, thus increasing the predictability of loss through default.

Diversification: Banks can diversify the loan portfolio by lending to a wide range of different types of borrowers. For example, a bank should lend to both individuals and businesses and even to businesses in different industries. This has the effect of offsetting the firm specific-risks within the portfolio. By diversifying its loan portfolio, a bank makes its borrower-specific loan risks more independent. It should be noted that banks that specialize in lending to one particular sector, region or industry will be limited in their ability to diversify. Examples include banks that specialize in mortgage lending or lending to a particular region or industry.

Collateral: A bank may ask for collateral (or security) to be provided by the borrower. If the loan then goes to default, then the bank is able to sell the collateral and so recover some or the entire loan. Collateral also has the effect of reducing moral hazards as the threat of loss has the effect of reducing the incentive of the borrower to engage in undesirable activities.

Capital: Banks should hold capital. This provides a cushion against loss in the event of default losses which protects depositors.

Chapter Three

Credit Crises in the United States

3.1 Introduction and Overview

During the 20th century, the world experienced two major financial crises. The first global financial crisis was seen during 1929-30, which affected the developed nations, Europe and America. While the second crisis came in 1997 and remained till 1999 and was experienced by emerging economies of Asia Pacific.

The recent financial crisis has consumed the attention of the world; it was seen with serious anxiety as it cascaded outwards from the regions originally affected. Alan Greenspan recently called it a "once-in-a-century credit tsunami", born of a collapse deep inside the US housing sector. Instability has rushed forward from sector to sector, firstly from housing into banking and other financial markets, and then into all parts of the real economy. The crisis has surged across national borders within the developed world as the people of Iceland know too well, and there were some reasons which has alarmed that the crisis will swamp emerging markets and other developing countries, affecting the significant economic progress of recent years (Yifu Lin, 2008).

In its semi-annual Global Financial Stability Released on April 8, 2008, the International Monetary Fund (IMF) said that falling U.S housing prices and rising delinquencies on the residential mortgage market could lead to losses of $565 billion. When combining these factors with losses from other loans originated and securities issued in the US related to commercial real estate, IMF puts potential losses at about $945 billion. The incredible loss estimates are just, estimates, and actual number may be even higher. In March 2008, Standard & Poor's had predicted that global banking firms would write of approximately $285 billion dollars in various securities linked to U.S subprime real estate, with more than half the losses already recognized.

This financial crisis, although started in the U.S, had swept across the world. Over the last 30 years, the U.S. retail and investment banking systems have become enormous. The largest banks in the United States have a hand in almost all financial transactions. This has made the recent credit crunch a worldwide contagion. Individuals and institutions have found it harder than ever to finance purchases or projects.

As recently, as mid 2007, many experts believed that the crisis would be contained within the arena of mortgage issuers, with few predicting that the crisis would be so severe as to threaten the economy to the extent it has. While downturns in the mortgage and housing markets have caused economic problems before, experts explain that the current crisis has unique situation. The United States was not by any means the highest in terms of price growth. Housing prices reached higher values relative to rent or incomes in Ireland, Spain, Netherlands, the United Kingdom, and New Zealand. Then, why did the crisis first manifest itself in the United States? Probably housing bubble was not the only reason.

According to experts, credit is the lifeblood of an economy. Both firms and individuals find it hard to make large purchases without the use of credit. In the United States, much of this money is loaned by the U.S. banking system. Traditional banks make their money by holding savings for individual or institutional clients and then either investing this money or lending it to other clients.

In investment banks, the process is more complicated but the concept is consistent: banks borrow money at one interest rate and then lend or hope to invest it at a higher interest rate. When markets are rising and delinquencies on loans are low, banking is a very prosperous business. When markets are falling and delinquencies are high, banks begin to lose money and therefore become more reluctant to lend the money they still have. The second scenario is very similar to the circumstances banks are facing right now.

During the 1990s, a new type of mortgage loan originated: the subprime mortgage. Subprime mortgages are extended to customers with less than favorable credit

scores or to customers with income levels below the approved income requirement. They are intended to get potential homebuyers into homes that they cannot currently afford but should be able to afford in the future. Subprime mortgages are not inherently evil, if the lenders are prudent about whom they extend credit to. Without prudence, subprime mortgages can be very risky because subprime borrowers are understandably more prone to default on their loans.

In order to understand how we got to this point, this section will begin with a brief discussion of the evolution of the financial crisis. Then, the roots of the crisis and all factors that encouraged the development of a housing bubble, which's pop prompted a worldwide financial crisis will be analyzed.

3.2. Financial Crisis: Evolution

3.2.1. A Dynamic Global Economy in 2002-2007

The expansion of 2002-2007 began with the bursting of the US tech stock bubble in 2000-2001, which had a substantial wealth effect on American households. To minimize the depth of the recession, the Federal Reserve applied an aggressive easy expansionary monetary policy. It lowered either the Fed funds rate or the discount rate 27 times between January 2001 and June 2003., with the funds rate falling from 6.5 % to 1.0% over that period. This policy stimulates a boom in the housing market which soon turned into a housing bubble, averting a deeper recession. This bubble overcompensated for the loss of wealth due in the stock market decline of 2000-2002. Higher housing prices fueled a consumption boom and the Fed continued its expansionary monetary policy, thus keeping the U.S economy away in excess liquidity.

At the same time, there were high levels of financial innovation on Wall Street, driven by a search for higher yields in a low interest rate environment. Much of this innovation was carried out by firms whose activities were not regulated and other new instruments were too complex to be effectively regulated. As a result, policies tended to advocate for deregulation of financial markets and were sometimes accompanied by

additional lax supervision. Therefore, the brief global recession of 2001-2002 was followed by a period of reasonably dynamic growth in the U.S and in much of the developed world.

3.2.2. Situation 18 months before the crisis

Throughout 2006 and into early 2007 the operative metaphor was 'smooth sailing'. This period was characterized by low volatility and risk valuation, and by plenty of cash and liquidity. The stock market was on a rampage and Dow Jones was up 19% for 2006. While the short term rates were risen Fed rates increases, the long term rates has held steady. The long term rates were kept relatively low due to the increase of investment of foreign saving in U.S treasuries.

Central to the world view was that the volatility of aggregate economic activity had fallen dramatically in most of the industrialized world over the last 25 years. The phenomenon has been so widespread and persistent that it has earned the label: "the Great Moderation". Due to the widely held view that economic disruptions would be mild and infrequent, investors became comfortable with taking on greater amounts of risk at lower prices. The paradox is that greater stability may bread instability "nothing is as destabilizing as stability". Profit motivated individuals may assume greater risk when they believe the coast is clear and "unwittingly make the world unsafe all over again" (DiMartino, Duca, and Rosenblum)

3.2.3. The collapse in the United States

Beginning in the late winter and accelerating in the late summer, the financial markets in the United States have completely changed direction. U.S was in the middle of a major storm. The basic contours of the current financial crisis are by now well known. As the well-known economist Herbert Stein once pointed out, if something cannot go on forever, it won't. Annual double-digit increases in US housing prices proved unsustainable, and the rapidly growing price-rent and price-income ratios clearly had to fall. The first clear sign that the US housing bubble was bursting, is the mid-2007

crisis in the sub-prime mortgage market (stemming from the significant increase in defaults), that transmitted losses to a whole set of securitized financial products such as mortgage-backed securities. Many of these new securitized financial products with layers of underlying assets were revealed to be far riskier than their credit ratings indicated. The drop in value of these assets dealt a blow to the balance sheets of many financial institutions. Even worse, the financial innovations of this decade – many of which had been sold on the promise that they would diversify and minimize risk – turned out to be transmission mechanisms for instability. The subprime mortgage crisis thus became a full-fledged financial crisis, which in turn has led to a collapse in equity markets.

The bursting of a bubble this large, with the financial consequences that we have seen in recent weeks for credit and equity markets makes a recession inevitable in the United States and likely in other developed economies. Indeed, job losses and other indicators suggest that the US has probably already entered a recession, and the IMF and World Bank are currently projecting 2009 growth in the US of just 0.1 to 0.2 percent (International Monetary Fund 2008; World Bank Forthcoming).

The extent of the meltdown goes far beyond the estimated $1.3 trillion in sub-prime mortgages at the start of the crisis. The housing price collapse of 2007-08 and more recent meltdown in equities have dealt US homeowners trillions of dollars in capital losses – an estimated $2.4 trillion in just the nine months through June 2008 (Federal Reserve figures, cited in World Bank Forthcoming), and much more with the recent plunge in stock markets. Losses of this magnitude will likely have significant wealth effects on consumption. US homeowners will no longer be able to count on rapid price increases that will allow them to downsize homes after retirement and live off the capital gains. Instead, they will need to become more cautious in consumption and to save more of their current income.

Banks and other U.S financial institutions are tightening their credit standards. Many mortgage lenders have exited the business while the remaining lenders have

significantly tightened underwriting criteria. Volatility and risk are perceived everywhere and the credit spreads have widened dramatically.

A timeline of salient events of the global financial crisis from 2007 to 2009 is attached in Appendix A.

3.3. Roots of the Crisis

There are number of theories as to what led to the crisis. Many experts and economists believe it came about though the combination of a number of factors in which subprime lending played a major part. The causes of the financial crisis are manifold. No one cause can be singled out as the main culprit. Rather, the crisis was the result of a continuum of interrelated causes and contributing circumstances that evolved and interacted in complex ways over time. The crisis generally is considered to have begun in 2007, reached a critical point in 2008, and continues in 2009. Different factors played a role at different stages of the crisis. Some may be considered root causes, while others only aggravating circumstances. At times, the crisis seemed to ebb and flow and had various cascading effects, engulfing otherwise healthy institutions and revealing weaknesses in the systems that were not perceived as such earlier.

By now, there are many studies looking at the origins of the crisis, including those done at the International Monetary Fund (IMF), Bank of International Settlements (BIS) and various central banks.

About the cause of current crisis, Bartlett (2008) said that crisis was started with the downfall of US sub-prime mortgage industry; the intensity of this collapse was significant; "Mark-to-market losses on mortgage backed securities, collateralized debt obligations, and related assets through March 2008 were approximate $945 billion." He further stated that it is "The largest financial loss in history", as compared to Japan's banking crisis in 1990 about $780 billion, losses stemming from the Asian crisis of 1997-98 approx $420 billion and the $380 billion savings and loan crisis of U.S itself in 1986-95.

Yılmaz (2008) charged U.S subprime mortgage industry to be the major reason of current global financial crisis, he also stated that the total loses estimated initially up to $300 to $600 billion are now considered to be around $1 trillion.

Khatiwada and McGirr (2008) stated "Many of these sub-prime mortgages actually never made it on the balance sheets of the lending institutions that originated them"; and they were made attractive to foreign banks by high investment grading, "when sub-prime borrowers failed to repay their mortgages, the originating institution needed to finance the foreclosure with their own money, bringing the asset back on its balance sheet. This left many banks in a financially unviable situation, in a rather short, unmanageable timeframe".

Others attributed the crisis to increase in the financial agreements called mortgage-backed securities (MBS) and collateralized debt obligations (CDO), which derived their value from mortgage payments and housing prices. Such financial innovation enabled institutions and investors around the world to invest in the U.S. housing market. As housing prices declined, major global financial institutions that had borrowed and invested heavily in subprime MBS reported significant losses. Falling prices also resulted in homes worth less than the mortgage loan, providing a financial incentive to enter foreclosure. The ongoing foreclosure epidemic that began in late 2006 in the U.S. continues to drain wealth from consumers and erodes the financial strength of banking institutions. Defaults and losses on other loan types also increased significantly as the crisis expanded from the housing market to other parts of the economy.

However, Hyun-Soo (2008) argues that it was the "Trust Crisis" which caused this global predicament. DeBoer (2008) believes that it was series of events which caused the crisis; it begins with the collapse of currencies in East Asia in 1997 and became edgy due to the financial crisis of Russia in 1998. Next, in USA was the "dot-com" stock collapse in 2001, and the final stroke was again in USA, when after a swift decline in housing prices and "rapid contraction in credit, it fell into recession.

This section is a synthesis of the immediate causes of the crisis.

3.3.1. Growth of the Housing Bubble

The current mortgage meltdown actually began with the bursting of the U.S housing bubble that began in 2001 and reached its peak in 2005. A real estate bubble or housing bubble for residential markets is a type of economic bubble that occurs periodically in local or global real estate markets. It is characterized by rapid increases in valuations of real property such as housing until they reach unsustainable levels relative to incomes and other economic factors. Following the rapid increases are decreases in home prices and mortgage debt that is higher than the value of the property.

The inflation-adjusted average U.S. housing price only grew from about $130,000 in 1975 to $150,000 in 1998. This is only a 0.67% annual growth rate against inflation. Comparably, prices increased from $150,000 in 1998 to $275,000 in 2006; a 10.4% annual growth rate. "Between the years 1997 and 2006, the price of the typical American house increased by more than double. During the two decades ending in 2001, the national median home price ranged from 2.9 to 3.1 times median household income. This ratio rose to 4.0 in 2004, and 4.6 in 2006" (Forbes, Feb., 2008). This astronomical growth can be explained by the classic supply and demand model: the supply of homes was rising at a slower rate than the demand of homes. Wealthy Americans (especially after the stock bubble) with abundant cash seeking a stable yield, with low risk was one of the causes in the increase in the demand of homes, thus leading to the run-up in home prices.

The housing bubble in the United States grew up alongside the stock bubble in the mid-90s. The logic of the growth is simple. People who had increased their wealth substantially with the extraordinary run-up of stock prices were spending based on this increased wealth. This led to the consumption boom of the late 90s, with the savings rate out of disposable income falling from close to 5.0 percent in the middle of the decade to just over 2 percent by 2000.

The stock wealth induced consumption boom also led people to buy bigger and/or better homes, since they sought to spend some of their new stock wealth on housing. This increase in demand had the effect of triggering a housing bubble because in the short-run the supply of housing is relatively fixed. Therefore an increase in demand leads first to an increase in price. As prices began to rise in the most affected areas, prices increases got incorporated into expectations. The expectation that prices would continue to rise led homebuyers to pay far more for homes than they would have otherwise, making the expectations self-fulfilling.

Figure 3.1 shows movements since 1890 in four key factors influencing the U.S housing market. Both building costs and home prices are adjusted for inflation and indexed. In recent years, changes in home prices have far outpaced these in the three other elements.

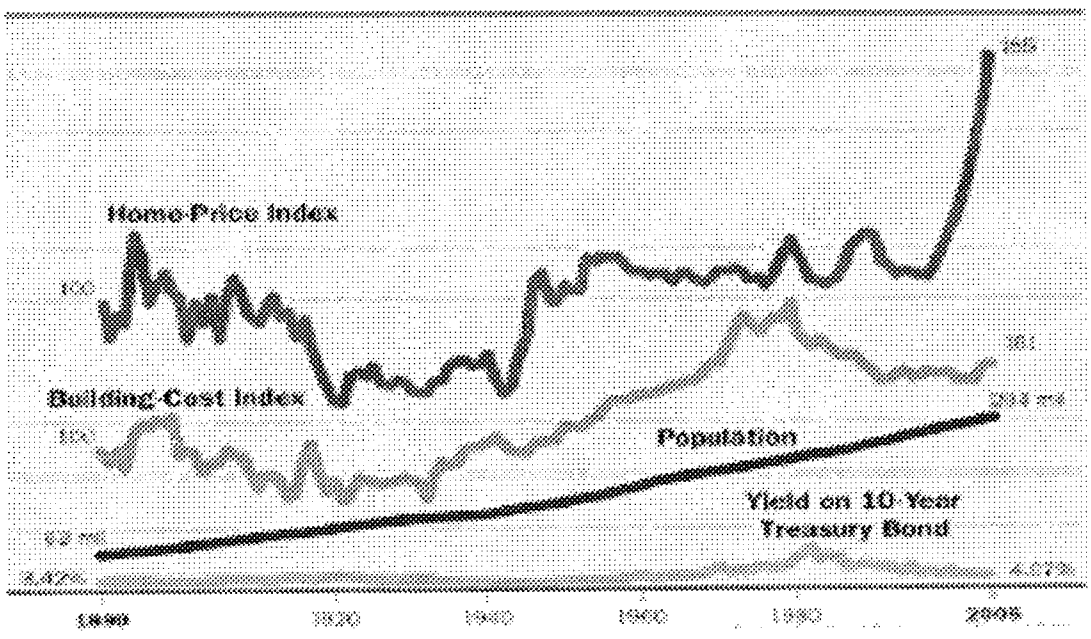

Figure 3.1: Tracking the Trends in the U.S Housing Market

Source: "Irrational Exuberance", Shiller / Bloomberg as of February 26, 2006

The quick jump in home prices from 1998 to 2006 was unprecedented; such a large deviation from the mean growth rate is hard to sustain, and in the second quarter of 2006 home prices began to fall.

All the evidence is that prices got away from fundamentals- a classic bubble. If fundamentals exist, prices increases should be reasonable and sustainable. By looking at Figure 3.2, historically, there was a rough correlation between housing valuations and GDP, until late 1990s. After that, housing valuations exceeded GDP, which might be evidence that houses prices clearly rose too high.

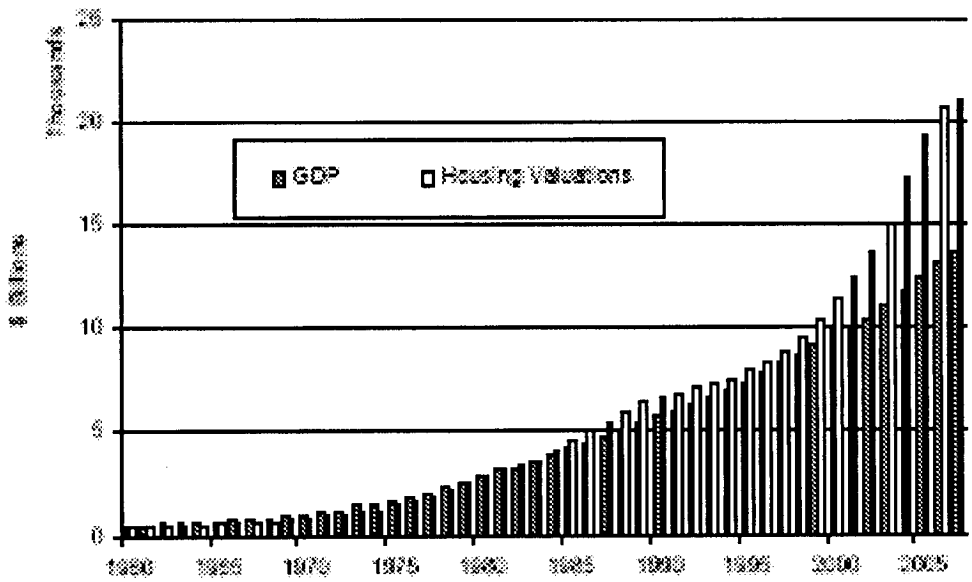

Figure 3.2 Housing Valuations and GDP growth rate

Source: Federal Reserve Statistical Release, Bloomberg / WSJ Jan 03, 2008 / Study by M. Davis, A. Lehnert and R. Martin

Furthermore, a Government data show that inflation adjusted house prices nationwide were on average essentially unchanged from 1953 to 1995. Robert Shiller constructed a data series going back to 1895, which showed that real house prices had been essentially unchanged for 100 years prior to 1995. By 2002, house prices had risen by nearly 30 percent after adjusting for inflation. Given the long history of stable house prices shown in the government data, and the even longer history in the data series constructed by Shiller, it should have been evident that house prices were being driven by a speculative bubble rather than the fundamentals of the housing market.

Additionally, the fact that rents had risen by less than 10 percent in real terms should have provided more evidence to support the view that the country was experiencing a housing bubble. If there were fundamental factors driving the run-up in house sale prices they should be having a comparable effect on rents. However, the increase in rents was far more modest and was trailing off already by 2002.

A study done by Davis, Lehmert, and Martin (2008) found that annual rents fluctuated around 5 to 5.25% of house prices until 1995. By the 3rd quarter in 2007, the rent/price ratio has dropped to 3.45%- about a third below its long term average as shown in Figure 3.3. The study predicts a five year horizon for rent-price ratio to return to normal level based on previous downturns. During this period of correction, home prices would have to fall by 15% over the next five years, assuming rents were to rise by 4% a year during this period.

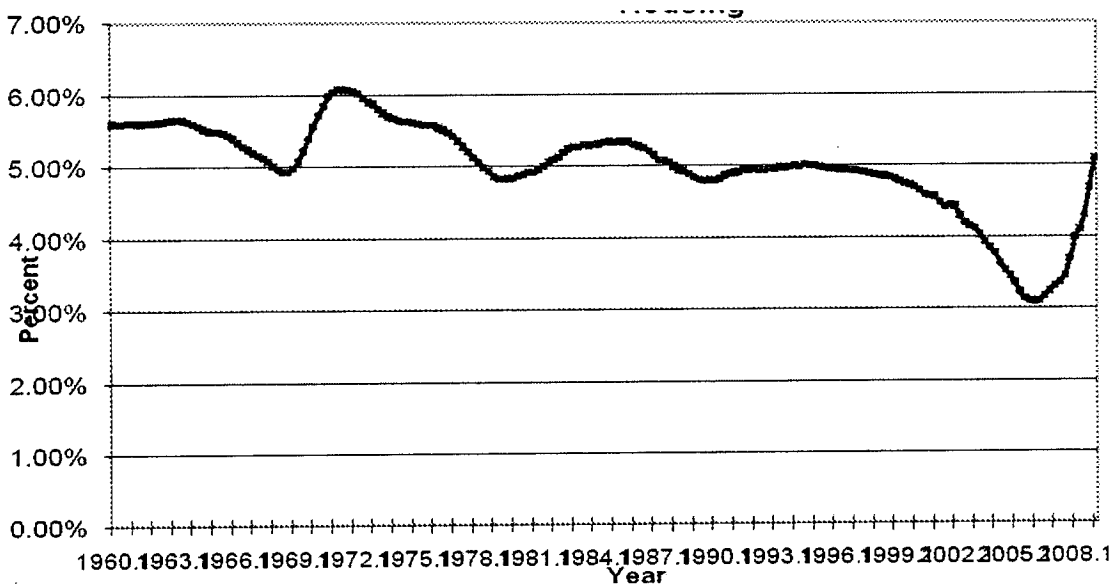

Figure 3.3: Average Annual Rent as a percentage of Average Home Price

Source: Morris David, Andreas Lehnert, and Robert Martin, 2006.

In August 2006, Barron's magazine warned that a housing crisis was approaching and noted that the median price of new homes had dropped about 3% since January 2006. At that time the magazine also predicted that the national median price of housing would fall about 30% in the next three years.

By September 2008, average U.S. housing prices had declined by over 20% from their mid-2006 peak. As prices declined, borrowers with adjustable-rate mortgages could not refinance to avoid the higher payments associated with rising interest rates and began to default. During 2007, lenders began foreclosure proceedings. As a result, mortgages outstanding were either delinquent or in foreclosure and more than 15% of mortgages were delinquent in the year 2009.

3.3.2. Easy Credit Conditions

3.3.2.1. Low Interest Rates

Many economists believe that the U.S housing bubble was caused in part by historically low interest rates, both short and long term. Lower interest rates that encouraged leveraging (e.g. borrowing to finance a home) is frequently ascribed some of the blame.

In response to the crash of the dot come bubble in 2000 and the subsequent recession that began in 2001, the Federal Reserve lowered the Federal Funds Rate target from 6.5% to 1.0% in order to enhance the circular flow of the economy and fight the upcoming deflation and stagnant markets. The stagnation was arising from the September 11 crises. In fact, real short term rates in the United States were negative from roughly the third quarter of 2002 and through the first quarter of 2005, while real long term interest rates were very low, particularly over the period of 2002 to 2007. Green space admitted in 2007 that the housing bubble was "fundamentally engendered by the decline in real long term interest rates"

Figure 3.4: 10 Year-Treasury Rates
Source: "Irrational Exuberance", Shiller/ Bloomberg of February 26, 2006.

The government also forced interest rates down in order to cover for the trade deficit. United States government borrowed money from abroad in order to inject cash in the economy, thus cash flowed into the USA to finance its imports. This created demand for various types of financial assets, raising the prices of those assets while lowering interest rates.

In 2005 report by the Fed, the agency said that house prices, like other assets, are influenced by interest rates, thus acknowledging the connection between lower interest rates and higher home prices. In fact, a rate reduction of 3 points (from 9% to 6%) allows borrower's payment to remain constant as home price rises 33%. Mortgage rates

typically are set in relation to 10-year Treasury bond yields, which in turn, are affected by federal funds rates.

Some have criticized Chairman Greenspan for 'engineering' the housing bubble, saying that it was the fed's decline in rates that inflated the bubble. However, Greespan disputes the claim stating that the global surplus in savings drove down the interest rates and pushed up housing prices. Foreign investors had these funds to lend because they had very high personal savings rates. Likewise, foreign governments supplied funds by purchasing USA Treasury bonds and thus avoided much of the direct impact of the crisis. USA households, on the other hand, used funds borrowed from foreigners to finance consumption or to bid up the prices of housing and financial assets. Financial institutions invested foreign funds in mortgage-backed securities.

Later on, during the years 2004 till 2006 the Fed then raised the Fed funds rates 17 times increasing them from 1 percent to 5.25%. This contributed to an increase in adjustable-rate mortgage (ARM) rates, which made ARM interest rate resets more expensive for homeowners. This has also contributed to the deflating of the housing bubble, as asset prices generally move inversely to interest rates and it became riskier to speculate in housing. The housing and financial assets dramatically declined in value after the housing bubble burst.

3.3.2.2 Lax Standards

Another central cause of the crisis was the making of too many mortgages to too many borrowers based on flawed credit underwriting standards and unrealistic assumptions about the likelihood of repayment and rising home values.

Some experts believe that mortgage standards became lax because of a moral hazard where each party in the mortgage chain collected profits while believing it was passing on risk. Mortgage denial rates for conventional home purchase loans reported under the Home Mortgage Disclosure Act, dropped from 29% in 1998 to 14% in 2002 and 2003. The moral hazard problem will be elaborated later on.

3.3.3. Changes in the Mortgage Landscape

3.3.3.1. Non Standard Mortgage Loans

At one time, virtually all loans were 15-30 year fixed rate with level of payments constituting approximately 35% of the borrowers' verifiable income. Unconventional mortgage products appeared in the market place to accommodate a wide range of borrowers. Increasingly, the financial markets' appetite for mortgage product has resulted in creative or exotic mortgage products including longer term loans (40 years maturity), adjustable rate mortgages, and interest only mortgages.

Adjustable rate mortgages (ARMs) have a relatively low initial (teaser) rate for 2-10 years, and then reset annually with an index. The most common index used is 6-month LIBOR. The ARM capturing the nation's attention at the moment are 2/28 (two year initial fixed rate) and 3/27 (3 years initial rate). On the other hand, Interest Only loans (I/O) have initial period where only interest is paid on the outstanding balance at a low initial rate.

Each of these loans resulted in a lower initial payment, allowing borrowers to qualify for 'more' home. For example, the IO loans might lead approximately to 20% more homes. Also, when ARMs reset, monthly payments will also likely to increase.

In addition to increasingly higher-risk loan options like ARMs and interest-only loans, lenders increasingly offered incentives for buyers. An estimated one-third of ARMs originated between 2004 and 2006 had "teaser" rates below 4 percent. A "teaser" rate, which is a very low but temporary introductory rate, would increase significantly after the initial period, sometimes doubling the monthly payment. Some mortgages were structured so that they would require financing after a few years and could not realistically be repaid absent a steady increase in home values to support refinancing.

In many areas of the country, especially those areas with the highest appreciation during the bubble days, such non-standard loans went from being almost unheard of to

prevalent. Eighty percent of all mortgages initiated in San Diego County in 2004 were adjustable-rate, and 47 percent were interest-only loans. Figure 4.6 shows that underwriters offered easy pay products such as Interest Only and 40-year maturities to further push the envelope on affordability.

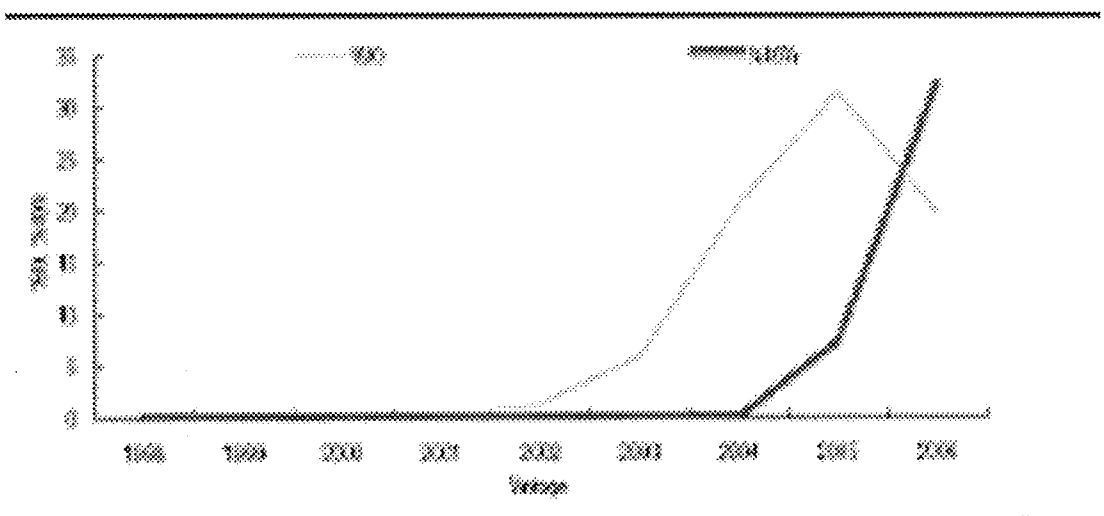

Figure 3.5: Trend of IO and 40 Year Mortgage Loan

Source: Fixed Income Research: "Explaining 2006: Worst Vintage in Subprime History", Jan. 26, 2007

In addition, many loans permitted borrowers to purchase home with little or no money upfront, and increasingly borrowers have extracted their equity gains from their homes. Before, equity contributions of 20% were common in home purchases and borrowers had something at stake in their home. However, in the last few years, it has become increasingly common for borrowers to borrow more than the value of the home. The typical homeowners have no equity outside of that which resides in their home. In recent years, home equity has provided consumers with a source of dollars to fuel their

spending. Combined LTVs[3] have increased by 8% points since 1998. Concurrent with that, the percentage of loans with piggyback seconds has increased dramatically to as much as 32% of all 1st lien loans from just 2% in 2000 as shown in Figure 3.6.

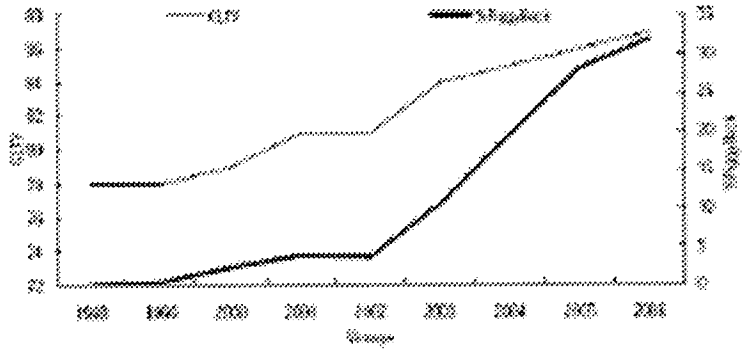

Figure 3.6: Trend of LTV

Source: Fixed Income Research: "Explaining 2006: Worst Vintage in Subprime History", Jan. 26, 2007

3.3.3.2 Sub-prime Lending

Through the creation of secondary markets for mortgage loans (explained below), Banks were able to make money by originating and servicing loans rather than keeping them and earning interest. This was a radical change in lending practices and incentives; lending institutions stopped being concerned about the quality of loans because they didn't keep them and instead they became very concerned with the volume of loans originated and the fees generated. Coupled with lower lending standards, lenders start to provide loans to those with low FICO scores in great volume: Subprime borrowers. The mortgage market distinguishes between Prime and Subprime borrowers and so called Alt-A borrowers (between Prime and Subprime).

The term Subprime refers to the credit quality of borrowers who have weaker credit histories and a greater risk of loan default than prime borrowers. A Subprime loan

[3] Combined LTV is the total debt of mortgage obligations as a percentage of the appraised value of a particular property. A high CLT generally corresponds to a low downpayment, but as resale values fell in the markets crash and the CTLV rose for many borrowers as a consequence of falling prices

is typically a loan originated with a borrower with a FICO (Fair Isaac Corporation) score of less than 620 (on a scale of 300-850). Also, any loan that has an interest rate 3 points higher than the rate on a similarly configured loan of the same age is classified as a Subprime. According to Fed (2006), Subprime lending can be described as high cost lending.

In addition to the Subprime lending, there is Alt-A loan, which is a classification of mortgages in which the risk profile falls between prime and subprime. The borrowers behind these mortgages typically will have clean credit histories- a FICO scores higher than 620- but the mortgage itself generally will have some issues that increase its risk profile. These issues might include higher loan-to-value and debt-to-income ratios or inadequate documentation of the borrower's income.

Stated income loans, also called 'no doc' loans and, sarcastically, 'liar loans' are a subset of Alt-A loans. The borrower does not have to provide documentation to substantiate the income stated on the application to finance home purchases. Such loans should have raised concerns about the quality of the loans if interest rates increased or the borrower became unable to pay the mortgage.

Subprime mortgages remained below 10% of all mortgage originations until 2004, when they spiked to nearly 20% and remained there through the 2005-2006 peak of the United States housing bubble. A shown in Figure 4.7, Subprime lending barley existed prior to 1994 with few lenders willing to loan to people with poor credit policy as there was no secondary market to purchase these loans. Subprime mortgages totaled $640 billion in 2006, accounting for approximately one fifth of the U.S home loan market.

In fact, Subprime and Alt-A loan originations rose from about 12% of mortgage originations in 2001 to over 33% in 2006 as shown in figure 3.7. In 2006, 20% of the 3 billion in loans originated were subprime as opposed to 9% in 2001 and 13% were Alt-A as opposed to 3% in 2001, with many having high LTVs (low or no down payment).

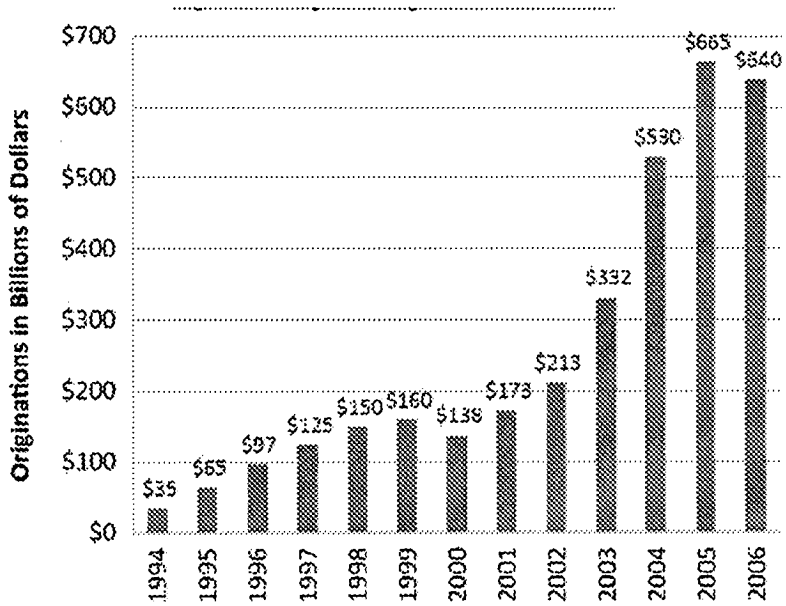

Figure 3.7. Subprime Originations, 1994-2006

Source: Inside Mortgage Finance Statistical Annual, 2007 edition, Credit Suisse Analysis

The number of Subprime loans rose as rising real estate values led to lenders taking more risks. Some experts believe that Wall Street encouraged this type of behavior by bundling the loans into securities that were sold to pension funds and other institutional investors seeking higher returns. This applied additional competitive pressure to Fannie Mae and Freddie Mac, which further expanded their riskier lending. Subprime tends to be 5 times as likely to default. Their mortgage payment delinquency rates remained in the 10-15% range from 1998 to 2006 then began to increase rapidly, rising to 25% by early 2008.

Moreover, more than 70% of 2005-2006 Subprime originations loans were 2-28 or 3-27 ARMs with low teaser rates. When ARMs rest, higher interest rates mean that borrowers experience payment shock of 30% or more. In the first 3 months of 2007, 18% f re-setting Subprime ARMs defaulted.

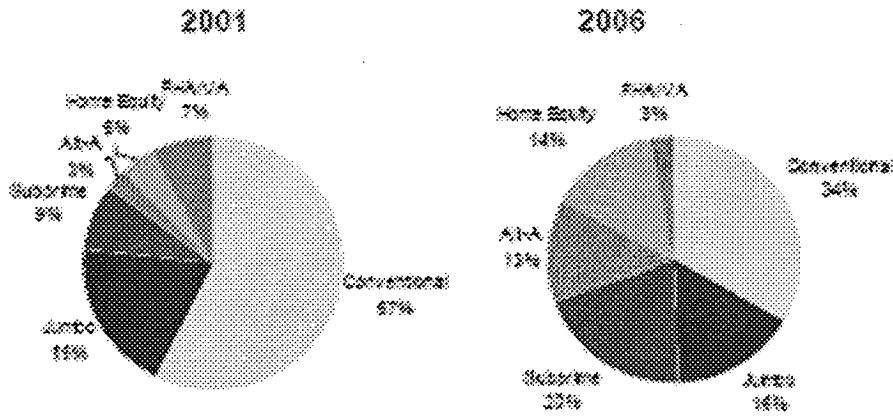

Figure 3.8: Loan categories in 2001 and 2007
Source: Citi- Fixed income research.

Also, lenders have eased underwriting standards along with the eligibility criteria of DTI ratio and documentation required for borrowers as shown in Figure 4.9 below.

The American Enterprise Institute fellow Peter J. Wallison, believe that the roots of the crisis can be traced directly to sub-prime lending by Fannie Mae and Freddie Mac, which are government sponsored entities.

A 2000 United States Department of the Treasury study of lending trends for 305 cities from 1993 to 1998 showed that $467 billion of mortgage credit poured out of CRA[4]-covered lenders into low and mid level income borrowers and neighborhoods. Nevertheless, only 25% of all sub-prime lending occurred at CRA-covered institutions, and a full 50% of sub-prime loans originated at institutions exempt from CRA.

[4] The Community Reinvestment Act (or CRA, Pub.L. 95-128, title VIII of the Housing and Community Development Act of 1977, 91 Stat. 1147, 12 U.S.C. § 2901 *et seq.*) is a United States federal law designed to encourage commercial banks and savings associations to meet the needs of borrowers in all segments of their communities, including low- and moderate-income neighborhoods. Congress passed the Act in 1977 to reduce discriminatory credit practices against low-income neighborhoods, a practice known as redlining.

Others have pointed out that there were not enough of these loans to cause a crisis of this magnitude. In an article in Portfolio Magazine, Michael Lewis spoke with one trader who noted that "There weren't enough Americans with [bad] credit taking out [bad loans] to satisfy investors' appetite for the end product." Essentially, investment banks and hedge funds used financial innovation to synthesize more loans using derivatives. "They were creating [loans] out of whole cloth. One hundred times over! That's why the losses are so much greater than the loans."

3.3.3.3 Securitization

An additional change to the mortgage lending world is central to understanding the current crisis: namely the ever more complicated securitization of mortgage assets- a structured finance process in which assets, receivables or financial instruments are acquired, classified into pools and offered as collateral for third-party investment. Asset securitization began with the structured financing of mortgage pools in the 1970s, according to the Office of the Comptroller of the Currency's *Asset Securitization*

In the same realm, during the past decade, giant pool of money in fixed income investments about USD 70 Trillion offered higher yields than those offered by the U.S. treasury bonds, and this pool had grown massively and roughly doubled in size from the years 2002 till 2007. On the other hand, the supply of relatively safe income investments did not grow that fast. Therefore, Investment banks answered that demand with MBS and CDO which were assigned safe ratings by the Credit Rating Agencies. The bundling of subprime mortgages into mortgage-backed securities (MBS) or collateralized debt obligations (CDO) for sale to investors is a type of securitization and off balance sheet financing. The usage of these products expanded dramatically in the years leading up to the crisis. These products vary in complexity and the ease with which they can be valued on the books of financial institutions.

Till the year 2003, the supply of mortgages originated at traditional lending standards had been exhausted. However, continued strong demand for MBS and CDO began to drive down lending standards, as long as mortgages could still be sold along the

supply chain. Eventually, this speculative bubble proved unsustainable and began to grow faster and bigger. The CDO in particular enabled financial institutions to obtain investor funds to finance subprime and other lending, extending or increasing the housing bubble and generating large fees. A CDO essentially places cash payments from multiple mortgages or other debt obligations into a single pool, from which the cash is allocated to specific securities in a priority sequence. Those securities obtaining cash first received investment-grade ratings from rating agencies. Lower priority securities received cash thereafter, with lower credit ratings but theoretically a higher rate of return on the amount invested. Figure 3.9 presents an overview of CDO structure. The CDO vehicle acquires a pool of assets from the market. Rights to the cash flows and associated risks of the assets are 'tranched' into senior (AAA-AA rated); mezzanine (A-BB rated), and equity (not rated). Equity absorbs the first losses, while the most senior tranche is effectively protected from losses by all the tranches subordinated to it. Cahs flows generated by the assets are allocated to the most senior tranche. The following figure shows the global CDO issuance and how it increases from $85 billion in 2002 to $559.3 billion in 2006.

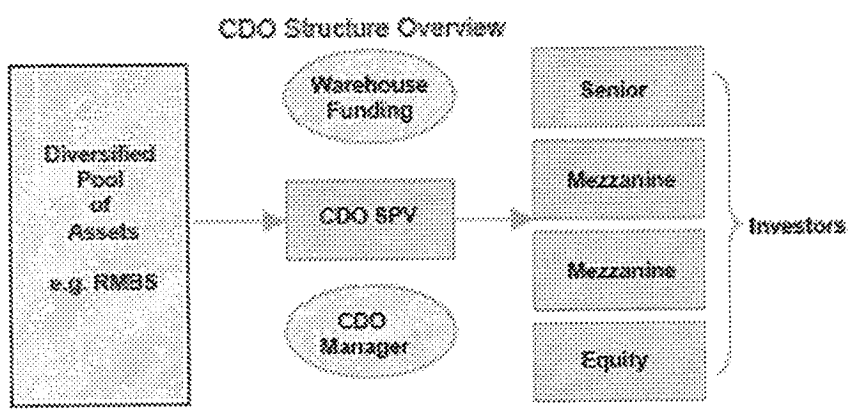

Figure 3.9: CDO Structure Overview
Source: Citi: "A Simple Guide to Subprime Mortgages, CDO, and Securitization", April 13, 2007

Martin Wolf wrote in June 2009: "...an enormous part of what banks did in the early part of this decade – the off-balance-sheet vehicles, the derivatives and the 'shadow banking system' itself – was to find a way round regulation."

As figure 3.10 shows, the securitization process has growth dramatically since 1980, exceeding 50% of total mortgage

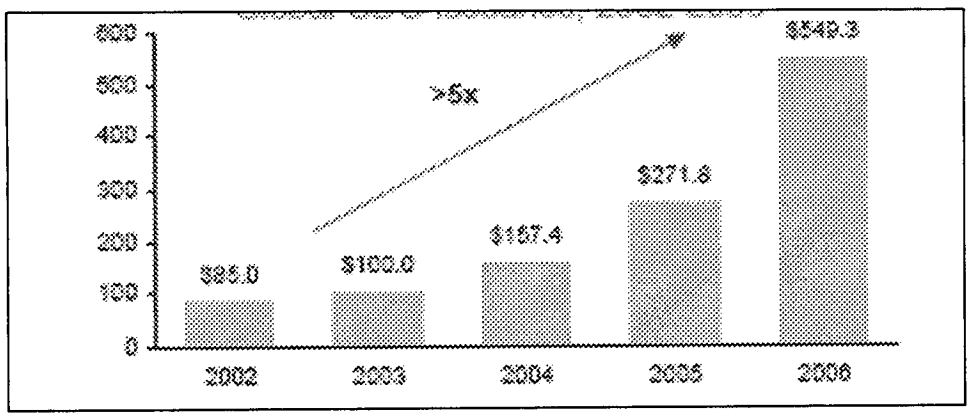

Figure 3.10: Global CDO Issuance 2002-2006
Source: Citi: "A Simple Guide to Subprime Mortgages, CDO, and Securitization", April 13, 2007

According to the Comptroller's Handbook, the securitized share of subprime mortgages, those passed to third-party investors, increased from 54 percent in 2001, to 75 percent in 2006. In a speech given in London in October 2007, Alan Greenspan, while defending the U.S. Subprime mortgage market, said that the securitization of home loans for people with poor credit—not the loans themselves—were to blame for the mortgage meltdown.

In addition to easy credit conditions (manifested by low interest rate), both government and competitive pressures contributed to an increase in the amount of subprime lending during the years preceding the crisis. Major U.S. investment banks and government sponsored enterprises like Fannie Mae played an important role in the

expansion of higher-risk lending. On 30 September 1999, The New York Times reported that the Clinton Administration pushed for sub-prime lending

The upside of easy credit is increased ownership. From 1960 to 1994, homeownership level had held steady at 64%. However, the low interest rates increased homeownership and the innovative and exotic mortgage products further contributed. The U.S ownership rate increased from 64% in 1994 to an all time high peak of 69.2% in 2004 as shown in Figure 3.11.

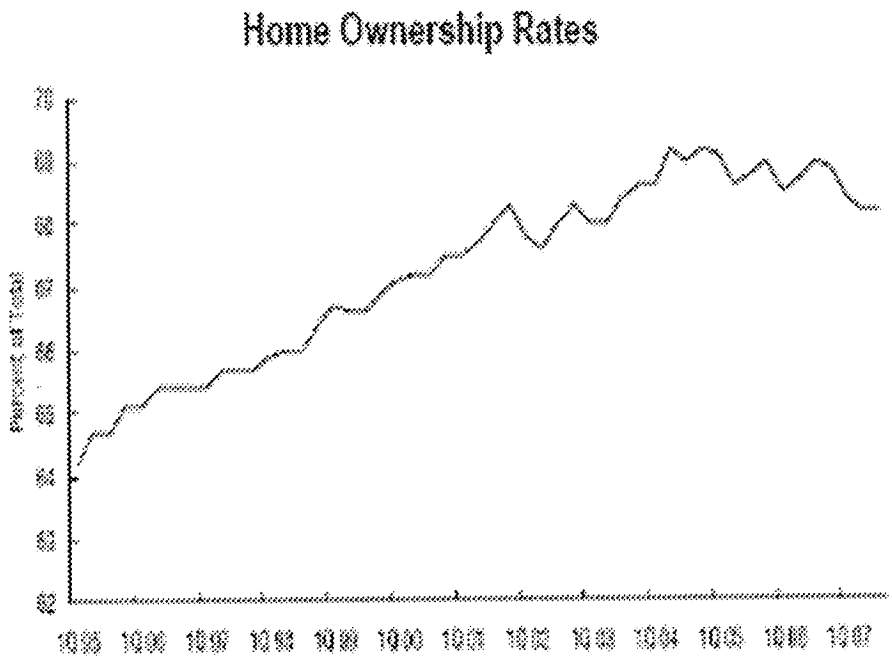

Figure 3.11: Home Ownership Rates
Source: Moody's Economy.com

The above mentioned factors dominate any discussion of what happened: (1) ever higher prices, out of step with so called fundamentals (a bubble waiting to burst); (2) more generous mortgage underwriting criteria- specifically in the subprime market- helped drive home prices higher while expanding home ownership; and (3) an explosion in the use of complex securitization vehicles facilitated both of the above. Therefore, a bubble in housing prices coupled with a loosening of lending standards and fed into

complex structured transactions, often with solid ratings, led to a perfect storm of troubled mortgages, RMBS, and CDO. Other factors played a role as follows:

3.3.4. Predatory Lending

Predatory lending is a term used to those unprincipled lenders who enter into unsafe lending procedures and use baits to fool borrowers. They normally advertise low interest rate loans for home refinancing mean while the interest would be put into an adjustable rate mortgage (ARM) that allowed homeowners to make interest-only payments. When housing prices decreased, homeowners in ARMs then had little incentive to pay their monthly payments, since their home equity had disappeared. This caused financial condition to deteriorate, ultimately resulting in a huge mess of loan delinquencies.

Fannie Mae, the nation's biggest underwriter of home mortgages, has been under increasing pressure from the Clinton Administration to expand mortgage loans among low and moderate income people. In moving, even tentatively, into this new area of lending, Fannie Mae is taking on significantly more risk, which may not pose any difficulties during flush economic times. But the government-subsidized corporation may run into trouble in an economic downturn, prompting a government rescue similar to that of the savings and loan industry in the 1980s.

Economist Paul Krugman argued in January 2010 that the simultaneous growth of the residential and commercial real estate pricing bubbles undermines the case made by those who argue that Fannie Mae, Freddie Mac, CRA or predatory lending were primary causes of the crisis. In other words, bubbles in both markets developed even though only the residential market was affected by these potential causes.

3.3.5. Deregulation

Throughout the whole course preceding the financial crises, governments and the regulatory framework did not keep pace with the financial innovation such as the increasing importance of the shadow banking system, derivatives and off-balance sheet financing. In many cases, laws were changed or enforcement was weakened in parts of the financial system.

For example, in October 1982, President Ronald Reagan signed into Law the Garn-St. German Depository Institutions Act, which began the process of Banking deregulation that contributed to the savings and loan crises of the late 80's/early 90's, and the financial crises of 2007-2010. In November 1999, President Bill Clinton signed into Law the Gramm-Leach-Bliley Act, which repealed part of the Glass-Steagall Act of 1933. This repeal has been criticized for reducing the separation between commercial banks (which traditionally had a conservative culture) and investment banks (which had a more risk-taking culture). In April 2004, the Securities and Exchange Commission relaxed the net capital rule, which enabled the largest investment banks to substantially increase the level of debt they were taking on, aggressively fueling the growth in mortgage-backed securities supporting Subprime mortgages. The SEC has conceded that self-regulation of investment banks contributed to the crisis.

Financial institutions in the shadow banking system are not subject to the same regulation as depository banks, allowing them to assume additional debt obligations relative to their financial cushion or capital base. This was the case despite the Long-Term Capital Management debacle in 1998, where a highly-leveraged shadow institution failed with systemic implications. Some economists blame the emergence in the boom years of a new kind of specialized mortgage lender for fueling the mortgage crisis. As mentioned before, these lenders were not regulated as are traditional banks. In the mid-1970s, traditional lenders carried approximately 60% of the mortgage market. Today, such lenders hold about 10%.

Regulators and accounting standard-setters allowed depository banks such as Citigroup to move significant amounts of assets and liabilities off-balance sheet into complex legal entities called structured investment vehicles, masking the weakness of the capital base of the firm or degree of leverage or risk taken. One news agency estimated that the top four U.S. banks will have to return between $500 billion and $1 trillion to their balance sheets during 2009. This increased uncertainty during the crisis regarding the financial position of the major banks. Off-balance sheet entities were also used by Enron as part of the scandal that brought down that company in 2001.

As early as 1997, Fed Chairman Alan Greenspan fought to keep the derivatives market unregulated. With the advice of the President's Working Group on Financial Markets, the U.S. Congress and President allowed the self-regulation of the over-the-counter derivatives market when they enacted the Commodity Futures Modernization Act of 2000. Derivatives such as credit default swaps (CDS) can be used to hedge or speculate against particular credit risks. The volume of CDS outstanding increased 100-fold from 1998 to 2008, with estimates of the debt covered by CDS contracts, as of November 2008, ranging from US$33 to $47 trillion. Total over-the-counter (OTC) derivative notional value rose to $683 trillion by June 2008. Warren Buffett famously referred to derivatives as "financial weapons of mass destruction" in early 2003.

3.3.6. Increased Household Debt-burden

U.S. households and financial institutions became increasingly indebted or overleveraged during the years preceding the crisis. This increased their vulnerability to the collapse of the housing bubble and worsened the ensuing economic downturn. For example, free cash used by consumers from home equity extraction doubled from $627 billion in 2001 to $1,428 billion in 2005 as the housing bubble built, U.S. home mortgage debt relative to GDP increased from an average of 46% during the 1990s to 73% during 2008, reaching $10.5 trillion.

Consumer protection laws made consumers comfortable with consumer loans while government programs made consumer credit more accessible, encouraging

increased levels of consumer spending and debt. High consumer debt and low savings meant that consumers have reduced the ability to repay their mortgages or withstand an economic downturn and decline in home values. For example, USA household debt as a percentage of annual disposable personal income was 127% at the end of 2007, versus 77% in 1990. At country level, the U.S. private debt as a percentage of GDP increased from 123% in 1981 to 290% by the third quarter of 2008.

3.3.7. Over-leveraged Financial Institutions

At the same time, investment banks were among the largest purchasers of MBS and the most leveraged. For example, from 2004-2007, the top five U.S. investment banks significantly increased their financial leverage, which increased their vulnerability to a financial shock. These five institutions reported over $4.1 trillion in debt for fiscal year 2007, about 30% of USA nominal GDP for 2007. The largest firms- including Bear Stearns and Lehman Brothers -leveraged their capital 30 to 1 or more. Leveraged hedge funds also invested heavily in MBS. Bank capital requirements limited bank leveraging to approximately 10 to 1, but some large banks leveraged through off-balance sheet activities that ultimately ended up back on the bank's books. Excessive leverage magnified the potential impact of losses to these institutions. Many of the highly leveraged firms relied on the overnight repurchase market as a source of funding for their activities, which made them more vulnerable to liquidity pressures.

Lehman Brothers was liquidated, Bear Stearns and Merrill Lynch were sold at fire-sale prices, and Goldman Sachs and Morgan Stanley became commercial banks, subjecting themselves to more stringent regulation. With the exception of Lehman, these companies required or received government support. Fannie Mae and Freddie Mac owned or guaranteed nearly $5 trillion in mortgage obligations at the time they were placed into conservator ship by the U.S. government in September 2008. These seven entities were highly leveraged and had $9 trillion in debt or guarantee obligations, an enormous concentration of risk; yet they were not subject to the same regulation as depository banks.

In sum, the US economy as a whole was highly leveraged by the time the crisis erupted as shown in Figure 3.12.

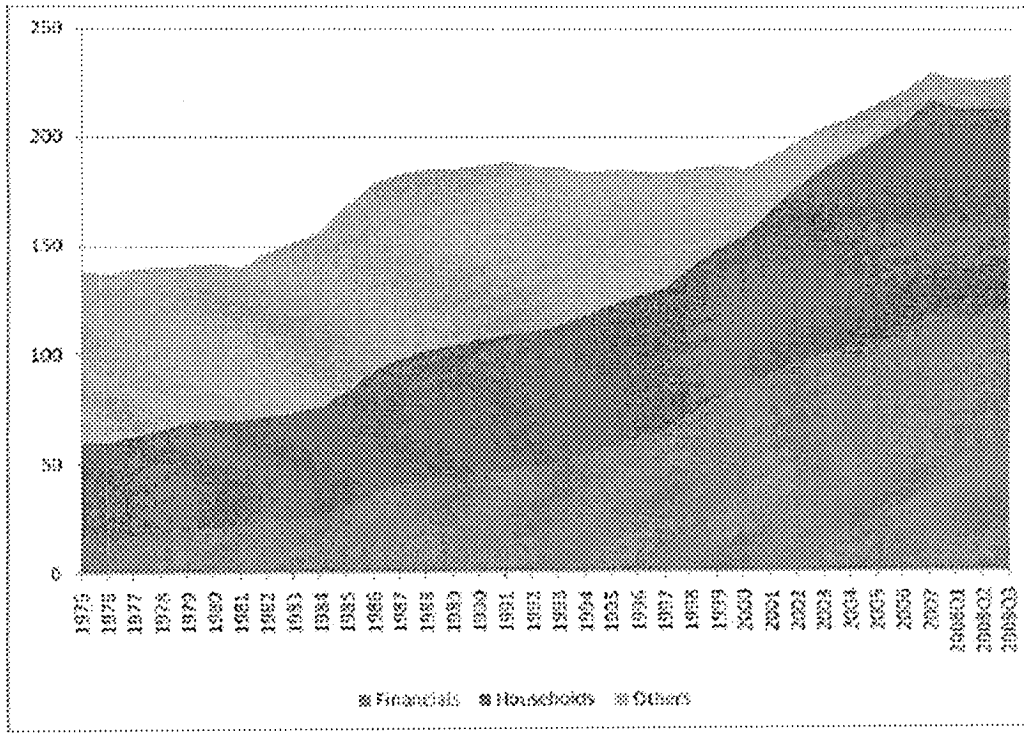

Figure 3.12: Debt Levels of US Sectors as a percent of U.S GDP: 1975- 3rd quarter 2008

Source: Board of Governors of the Federal Reserve System

3.3.8. Incorrect Pricing of Risk

When lenders address borrowers with lower financial standing, they should normally apply an incremental compensation on interest rates and fees. The new investment products that emerged in Subprime lending are structured investment vehicles and CDO with tranches of packaged Subprime mortgages given varying credit ratings. They were highly complex, often leveraged, and tended to obscure the degree to which investors were exposed to the risks of the underlying collateral. For many reasons, the players did not price accurately the extra risk they were facing especially what related to the financial innovation of CDO's and MBS. These massive, practically

unthinkable, losses have dramatically impacted the balance sheets of banks across the globe, leaving them with very little capital to continue operations.

3.3.9. Boom and collapse of the shadow banking system

The shadow banking system expanded to rival or even surpass conventional banking in importance; politicians and government officials should have realized that they were re-creating the kind of financial vulnerability that made the Great Depression possible—and they should have responded by extending regulations and the financial safety net to cover these new institutions. Influential figures should have proclaimed a simple rule: anything that does what a bank does, anything that has to be rescued in crises the way banks are, should be regulated like a bank.

In a June 2008 speech, President and CEO of the NY Federal Reserve Bank Timothy Geithner — who in 2009 became Secretary of the United States Treasury — placed significant blame for the freezing of credit markets on a "run" on the entities in the "parallel" banking system, also called the shadow banking system. These entities became critical to the credit markets underpinning the financial system, but were not subject to the same regulatory controls. Further, these entities were vulnerable because they borrowed short-term in liquid markets to purchase long-term, illiquid and risky assets. This meant that disruptions in credit markets would make them subject to rapid deleveraging, selling their long-term assets at depressed prices. In early 2007, asset-backed commercial paper conduits, in structured investment vehicles, in auction-rate preferred securities, tender option bonds and variable rate demand notes, had a combined asset size of roughly $2.2 trillion. Assets financed overnight grew to $2.5 trillion. Assets held in hedge funds grew to roughly $1.8 trillion. The combined balance sheets of the then five major investment banks totaled $4 trillion. In comparison, the total assets of the top five bank holding companies in the United States at that point were just over $6 trillion, and total assets of the entire banking system were about $10 trillion. The combined effect of these factors was a financial system vulnerable to self-reinforcing asset price and credit cycles.

Paul Krugman, laureate of the Nobel Prize in Economics, described the run on the shadow banking system as the "core of what happened" to cause the crisis. He referred to this lack of controls as "malign neglect."

3.3.10. Miss-pricing in the Massive Credit Default Swaps Market [5]

As the market for Subprime mortgages and the market for securities based upon those mortgages grew, there was increased an increased market for default insurance. This took the form of credit default swaps (CDS's). The CDS's were a form of derivative security. The market for derivative securities has become very large in recent years. Worldwide, in the 1990s, these securities provided 'insurance' on an estimated $16 trillion of financial securities. This is an enormous amount, far larger than the gross domestic product (GDP) of the United States at that time. According to the International Swaps and Derivatives Association (ISDA), the notional value of the CDS's in 2007 worldwide was $62.2 trillion.

Before the 2008 financial crisis, CDSs were an esoteric product, known only to a restricted number of sophisticated investors and specialized academics. Today, they are a household name, synonymous with unruly speculation, boundless greed, and, ultimately, systemic instability.

However, CDS s suffered from a miss-pricing of risk, which had resulted in a lower savings rate, higher money and credit growth and a miss-allocation of resources in the economy. In the late stages, it also result in economic growth decay, before an eventual collapse which sees a sharp rise in savings and a severe drop in interest rates. In the risk miss-pricing model, the aggregate of the savings that economic participants believe they are making does translate into investment. It is simply that the investment

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[5]Credit Default Swap: is a bilateral contract between the buyer and seller. The CDS will refer to a specified bond obligation of a "reference entity", usually a corporation or government. The reference entity is not a party to the contract. The protection buyer makes quarterly premium payments—the "spread"—to the protection seller. If the reference entity defaults, the protection seller pays the buyer the par value of the bond in exchange for physical delivery of the bond, although settlement may also be by cash or auction. A default is referred to as a "credit event" and include such events as failure to pay, restructuring and bankruptcy.

does not equate, in terms of riskiness, with the return that savers are receiving. Therefore there is a miss-allocation of resources in the economy and there are likely other effects, for monetary policy, monetary conditions and potentially inflation. Much of the 'savings' will be consumed by employees and promoters of the miss-pricing schemes. Therefore there is a big discrepancy between the sum of what people and companies believe to be their savings and actual national savings, which is the source of the divergence between perceived net worth and actual wealth of the economy. In the mis-pricing of risk model, this divergence comes about as the result of a more normal bubble dynamic i.e. the miss-pricing of financial and other assets.

David Rubenstein, head of the private equity house Carlyle Group, referred to it as "bubble amnesia" at the Super Return private equity conference in Frankfurt. "I don't think we are in a bubble similar to the tech bubble of 2000", he said, "but declines will occur. We can't go on like this forever... returns will be lower, a downturn will occur."

3.3.11. Deficiencies in the Banking Supervision

Deficiencies in the supervision of banking organizations exacerbated the financial crisis. These weaknesses have come to light as a result of internal reviews by the banking agencies themselves, inspector general investigations, and oversight by the Government Accountability Office ("GAO") and Congress. This process of accountability is ongoing and is a positive feature of the banking regulatory system.

The deficiencies in banking supervision were caused in part by the speed of innovation and developments in the marketplace that outpaced the risk management processes of financial institutions and their supervisors.

Supervisors have said they did not predict the magnitude of risks at play. Former

Federal Reserve Chairman Greenspan has testified that he was in a state of "shocked disbelief" that the crisis developed so severely. The complex interaction of causal factors undoubtedly obscured the supervisor's ability to foresee the crisis until it

was too late. Also, banking supervisors have noted the difficulty of reigning in aggressive activities of banking organizations that are well-capitalized and profitable.

3.3.12. Involved parties and Misaligned Incentives

In addition to the above reasons, the involved parties and the series of misaligned incentives that existed throughout the network of mortgage loans should be explained. These misaligned incentives exacerbate the world financial crisis.

3.3.12.1. Borrowers

Easy credit and the assumption that housing prices would continue to appreciate encouraged many Subprime borrowers to obtain loans that they could not afford after the initial incentive period had passed. Once housing prices started to decrease, due to the housing market correction and the bursting of the housing bubble, refinancing readily available during the boom, became much more difficult. Homeowners who could not refinance started to default on their loans as the loans reset to higher interest rates and payment amounts. Some homeowners chose to stop paying their mortgages and just walk away from their homes, allowing foreclosure of the property.

George Mason University economics professor Tyler Cowen said in January 2008, that there has been plenty of talk about predatory lending, but predatory borrowing may have been the bigger problem."

As much as 70 percent of recent early payment defaults had fraudulent misrepresentations on their original loan applications, according to BasePoint Analytics, a company that assists lenders and banks to identify fraudulent transactions. A study done by the company analyzed over three million loans dating from 1997 to 2006, with a majority of the loans originating in 2005 and 2006. Applications with misrepresentations were determined to be five times as likely to go into default. The study found that many of the misrepresentations were quite simple. Some borrowers simply lied about their

incomes, reporting up to five times their actual earnings. Other borrowers used false income documents created on their computers.

Suspicious Activity Reports of mortgage fraud increased by 1,411 percent between 1997 and 2005, according to the Financial Crimes Enforcement Network.

3.3.12.2. Lenders

The lenders, or the originators, were a crucial part of the recent financial meltdown. After the bursting of the dot-com bubble, the Federal Reserve lowered interest rates considerably in an attempt to stimulate lending. The strategy was successful. Total credit outstanding including total debt securities outstanding in U.S. credit markets and total loans and leases at U.S. depository institutions grew from $17.087 trillion (equal to 205.8 percent of GDP) on December 31, 1997 to $38.324 trillion (equal to 276.8 percent of GDP) on December 31, 2007 (Quinns, 2008).

The amount of credit outstanding more than doubled, but it is more critical that the growth of credit outpaced the growth GDP. This much growth in lending is not sustainable by lenders alone. Many of the mortgage companies that originated these loans operated free of federal oversight and engaged in practices generally not permitted for federally regulated bank lenders. For these originators, little was done to prevent abusive and unsound lending practices. In contrast, Federal banking regulators discouraged commercial banks from making Subprime mortgages, but some national banks made large numbers of unsound loans. Many banks bought loans from unregulated mortgage originators, mainly for the purpose of packaging and securitizing them, but also for investment and trading purposes.

Moreover, the separation of risk from lenders provided misaligned incentives. Lenders were not required to keep any portion of the loans they issued on their books. This caused many lenders to lend recklessly, without regard for whether the borrower would default on their loan (Quinns, 2008, p. 21).

Issuers did attempt to have mortgage lenders buyback loans that defaulted in a short period of time, but many of the lenders did not have the capital to buy them back and simply went bankrupt.

"Skin in the game" is referring to lenders keeping a portion of the loan on their books, as many auto lenders are required to do. This would give the lenders incentive to act responsibly when evaluating potential loans (Quinns, 2008, p. 21).

3.3.12.3. Investment Banks

It would have been impossible for lending to increase at such a fast rate if the lenders were required to keep every loan on their books. In order to extend as many loans as possible, lenders would only hold loans temporarily before selling them to investment banks. The investment banks, or the issuers, would then package the loans together and sell them.

These packages are called special purpose vehicles and have fixed interest rates. Types of special purpose vehicles include: asset-backed securities (ABS), residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), collateralized debt-obligations (CDOs), and collateralized mortgage obligations (CMOs). Investment banks on Wall Street issued huge amounts of MBS and CDO, which were assigned safe ratings by the credit rating agencies. In effect, Wall Street connected this pool of money to the mortgage market in the U.S., with enormous fees accruing to those throughout the mortgage supply chain, from the mortgage broker selling the loans, to small banks that funded the brokers, to the giant investment banks behind them.

Therefore, contributing to the problem is the incentive compensation plans within investment banks. Bonuses are awarded to employees for transaction volume (selling as many securities as possible) and earnings on investments (using leverage to engage in risky investments). In an interview with Forbes Magazine (2008), Franklin Allen is quoted:

"So if you look at some of these institutions like Bear Stearns, which started taking big risks—they wanted to develop risk-taking cultures— then in the good times they made inordinate amounts of money. In the bad times, it's other people who are picking up the bills."

Executives at investment banks are aware of the flaw in their compensation system. However, executives acting individually are unable to change the system. If an executive changes his or her compensation system without the cooperation of other executives in the industry, he or she runs the risk of losing his or her best talent. A change will only occur if executives act cooperatively to reform the system (Quinns, 2008, pp. 22-23).

3.3.12.4. Mortgage Brokers and Underwriters

Because mortgage brokers do not lend their own money, there is no direct correlation between loan performance and compensation for them. Brokers also have financial incentive for selling complex ARMs because they earn higher commissions on them.

One study has found that in 2004, mortgage brokers originated 68 percent of all residential loans in the United States, with Subprime and Alt-A loans accounting for over 42 percent of the volume. The Mortgage Bankers Association has claimed that brokers profited from the home loan boom but didn't do enough to determine whether borrowers could repay the loans, leaving lenders and banks with resulting defaults.

On the other hand, mortgage underwriters should determine if the risk of lending to a borrower under certain parameters is acceptable. Most of the risks and terms considered by underwriters fall under three categories—credit, capacity and collateral. However, in 2007, 40 percent of all Subprime loans were generated by automated underwriting. Automated underwriting meant minimal documentation and much quicker decisions, sometimes as soon as within 30 seconds as opposed to the week it would take for an underwriter to generate a decision.

Additionally, in 2004, it was mentioned that "previously, every mortgage required a standard set of full documentation." Many experts believe that lax controls and a willingness to rely on shortcuts led to the approval of buyers that under a less-automated system would not have been approved.

3.3.12.5. Credit Rating Agencies

Once thousands of mortgage loans or other receivables were packaged together into these special purpose vehicles, they were sent to credit rating agencies. It is the credit rating agencies' role to analyze the riskiness of the security.

Credit rating agencies work in many markets to assess the riskiness of any debt instrument, primarily analyzing the risk involved with bond issuers. After analysis, the credit rating agencies then rate the debt instrument; a triple-A rating is typically the highest. A triple-A rating indicates that the investment is very safe. Many of these very complicated special purpose vehicles were stamped with triple-A rating, even though the origin of their contents was not necessarily clear to the credit rating agencies.

Credit rating agencies such as Standard & Poor's Corp., Moody's Investors Service Inc. and Fitch Ratings were under scrutiny for giving investment-grade or 'money safe' ratings to securitization transactions (CDOs and MBSs) based on Subprime mortgages. They have come under fire for being slow to lower their ratings on securities based on mortgage loans to U.S. borrowers with poor credit records. These high ratings encouraged a flow of global investor funds into these securities, funding the housing bubble in the U.S. An estimated $3.2 trillion in loans were made to homeowners with bad credit and undocumented incomes (e.g., Subprime or Alt-A mortgages) between 2002 and 2007. These mortgages were bundled into MBS and CDO securities that received high ratings and therefore were sold to global investors. Higher ratings were believed justified by various credit enhancements including over-collateralization (i.e., pledging collateral in excess of debt issued), credit default insurance, and equity investors willing to bear the first losses according to the agencies. However, there were incentives in place for credit rating agencies to act irresponsibly.

Critics claim that conflicts of interest were involved, as rating agencies are paid by the issuers, the companies securitizing and then selling the MBS to investors, such as investment banks. This provides reason to stamp large investment banks' securities with superior ratings, to keep the largest clients satisfied.

In a 2007 speech Greenspan made in London, he implicitly criticized the role of ratings agencies in the crisis. "The problem was that people took that as a triple-A because ratings agencies said so." Yet when they tried to sell the products they ran into difficulties, which shook confidence. "What we saw was a 180 degree swing from euphoria to fear and what we've learned over the generations is that fear is a very formidable challenge."

Also, when discussing Moody's, a large credit rating agency, Quinns (2008) writes: "In 1996, Brian Clarkson took over the Moody's division responsible for rating mortgage-related debt securities and began making it 'more client friendly and focused on market gain' from the other rating agencies" (p. 22).

As of November 2007, credit rating agencies had downgraded over $50 billion in highly rated collateralized debt obligations and more such downgrades were possible.

Since certain types of institutional investors are allowed to only carry higher-quality assets, there is an increased risk of forced asset sales, which could cause further devaluation.

3.3.12.6. Buyers

Once packaged and rated, the investment banks would then market the securities to their clients. Investors in the securities included: hedge funds, global investment banks, pension funds, government entities, as well as retail banks. Retail banks were also oftentimes originators of the loans. In the documentary, "House of Cards", CNBC reported that 50% of the securities were sold to clients outside the United States. This is one reason that the economic downturn has not been contained in the U.S.

Buyers did not think long-term financing. Adjustable-rate mortgages appealed to those who wanted the lowest possible interest rates and expected to be able to either sell their homes or refinance them before the mortgages reset. However, after the real-estate market crash, many didn't have enough equity to refinance and houses began to sit on the market as prices went into a free fall. When it comes to financing, you can't just look at the next six weeks or two months or next year. You have to say, 'What happens to me in five years?'

Ultimately, the real-estate market collapse was a lesson in learning to adapt, experts say. When you see over exuberance, expect that it's going to change.

All the above had lead to the financial crisis in the United States in the year 2007 which lasted till present resulted from a liquidity shortfall in the United States banking system. The result was the collapse of large financial institutions, the "bail out" of banks by national governments and downturns in stock markets around the world. The housing market has suffered, resulting in numerous evictions, foreclosures and prolonged vacancies. The crises caused failure of key businesses, declines in consumer wealth, substantial financial commitments incurred by governments, and a significant decline in economic activity.

Experts had contributed the crises to many causes, with varying weight assigned. Both market-based and regulatory solutions have been implemented or are under consideration, while significant risks remain for the world economy over the 2010–2011 periods.

Despite all of these, both the PWG (President's Working Group) and the FSF (Financial Stability Form) reports highlighted the important role played by financial regulators in overseeing and helping to strengthen risk-management practices in the firms they supervise. Also, they acknowledge the regulators' review of their own policies, guidance, and supervisory practices and the reports recommended identifying areas in which improvements could be made.

3.4 Repercussions

Collectively, these factors combined to create a perfect storm in the housing market. Prices soared to unprecedented levels before beginning to tumble back to real market value. As home prices fell and borrowers got further into their payments, delinquencies began to rise. Loans began to go bad, creating a wave of panic across the financial world, as no one knew who held the bad loans and who held the good loans. The panic really began in the summer of 2007 when Bear Stearns and BNP Paribas announced that some of their hedge funds lost considerable value due to exposure to Subprime mortgages. Everyone wanted to sell MBS, and no one wanted to buy them; this sent prices plunging, until the market was essentially frozen. Because of the sharp drop in the value of MBS, investment banks and retail banks were forced to write down losses on securities they were holding. This resulted in large losses across the banking industry. On March 16, 2008, the crisis intensified when Bear Stearns collapsed. Six months after, Lehman Brother filed for bankruptcy on September 14, 2008. In 2007, 35 out of every 100 loans at reset either defaulted or became delinquent in six month period after reset. On average, in each quarter from 2007 until 2009, monthly payment for more than 400,000 Subprime mortgages are scheduled to undergo their first interest rate reset up from roughly 200,000 per quarter during the first half of 2007.

For borrowers facing rate resets, the higher payment after the initial reset is often unaffordable. In many cases, borrowers never expected to have to make the higher payment, but planned on refinancing. However, lower home valuations combined with tighter lending standards limit refinancing opportunities.

Figure 3.13 summarizes a chronology of the mortgage phenomenon in the U.S from January 2000. Additionally, Figure 3.14 depicts the kind of snowball effect that may now be taking place in the home market due to lax subprime lending – and, more generally home price inflation – that took place in recent years.

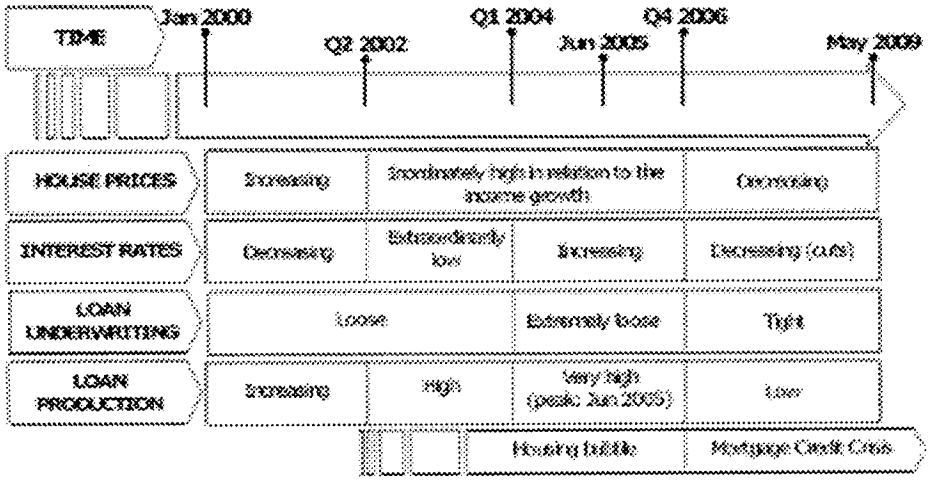

Figure 3.13: Chronology Leading to the Mortgage Crisis in the USA

Source: SMR (2007), Gramlish (2007), Goodman et al. (2008) and Mayer et al. (2009)

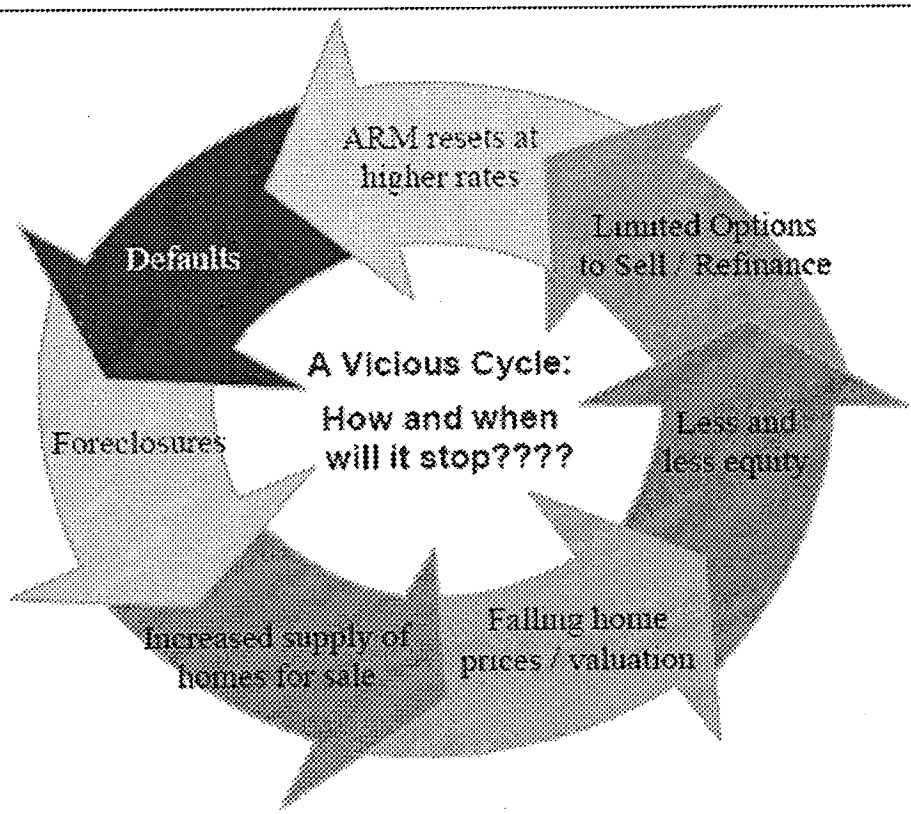

Figure 3.14: Snowball Cycle of Defaults in the U.S

Source: Citi: "The Subprime Crisis: An overview", March 3, 2008

Chapter Four

The Lebanese Banking Situation and the Real Estate Case at hand

4.1 Introduction

The failures of large financial institutions in the United States rapidly evolved into a global crisis resulting in European bank failures and declines in various stock indexes, Although it began in the developed countries, it was spread to the rest of the world, touching the emerging economies like Russia, China, India, Brazil, and East Europe (Gupta, 2008). It was clear that the world in general and the developing world in particular are far from immune to the storms raging in financial markets in industrial countries.

World political leaders and central bank directors coordinate their efforts to reduce fears but the governments of the wealthiest nations in the world had to resort to extensive bailout and rescue packages for the remaining large banks and financial institutions. Towards the end of October 2008, the Bank of England said the world's financial firms had now lost 1.8 trillion pounds ($2.8 trillion) as a result of the credit crisis. As a result, the United Nation's Conference on Trade and Development says in its Trade and Development Report in 2008 as summarized by the Third World Network: "The global economy is teetering on the brink of recession. The downturn after four years of fast growth is due to the global fallout from the financial crisis in the United States, the bursting of the housing bubbles in the US and in other large economies, soaring commodity prices, increasingly restrictive monetary policies in a number of countries, and stock market volatility". "Fallout from the collapse of the US mortgage market and the reversal of the housing boom in various important countries has turned out to be more profound and persistent than expected in 2007 and beginning of 2008. As more and more evidence is gathered and as the lag effects are showing up, we are seeing more and more countries around the world being affected by these rather profound and persistent negative effects from the reversal of housing booms in various countries" (Raja, 2008). The IMF foresaw the global economy's growth slowing to 3.7 per cent in

2008 and 2.2 per cent in 2009, i.e., well below the 3 per cent level the fund traditionally considers the threshold for a world recession (Barkley).

Figure 4.1 highlights the vulnerabilities in emerging and developing countries to the financial crisis. Vulnerabilities are measured on the basis of developments in exports, Foreign direct investment, remittances flows, external debt ratios (emerging countries), and aid flows (low-income countries). For a detailed explanation of the methodology, see IMF 2009.

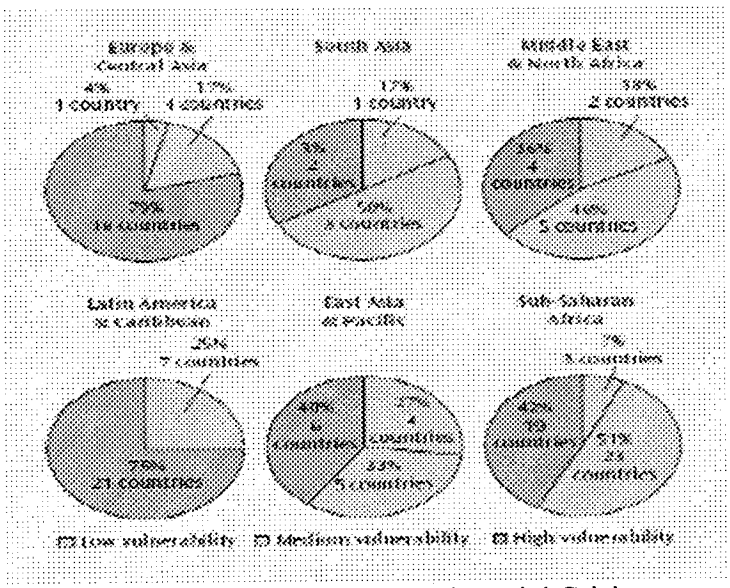

Figure 4.1: Vulnerabilities to the Financial Crisis
Source: IMF, 2009

This chapter will highlight the impact of the crisis on Lebanese economy and will draw some lessons. To see whether Lebanon will be exposed to a credit crisis in the near future, the banking sector will be analyzed next. Reasons behind our findings will be then explored. The focus is whether the increase in housing price in Lebanon will burst and lead to a credit crisis similar to that in the U.S.

4.2 Impact of the crisis on Lebanon

4.2.1 Macroeconomic Impacts

While the effects will vary from country to another, the common macroeconomic impacts of a crisis could include:

- weaker export revenues,
- further pressures on current accounts and balance of payment,
- lower investment and growth rates,
- Lost employment, among others.

4.2.1.1 Change in Terms of Trade and Balance of Payments

The IMF recently projected growth in world trade volumes of just 4.1 percent in 2009, down from 9.3 percent as recently as 2006; the deceleration is much more rapid and could in fact lead trade volumes to fall in 2009 for the first time since the 1982 recession (World Bank, 2008). For most developing countries, the US and the European Union remain the most important sources of final export demand, and as they inevitably tip into recession, exports to these markets will also decline.

About half of all developing countries have been running current account deficits of 5 percent of GDP or more, and in some cases the deficits are around 10 percent. By looking at Lebanese terms of trade, we can see that, although it is negative, however the deficient was decreasing yearly as shown in the figure below indicating a positive sign to Lebanon.

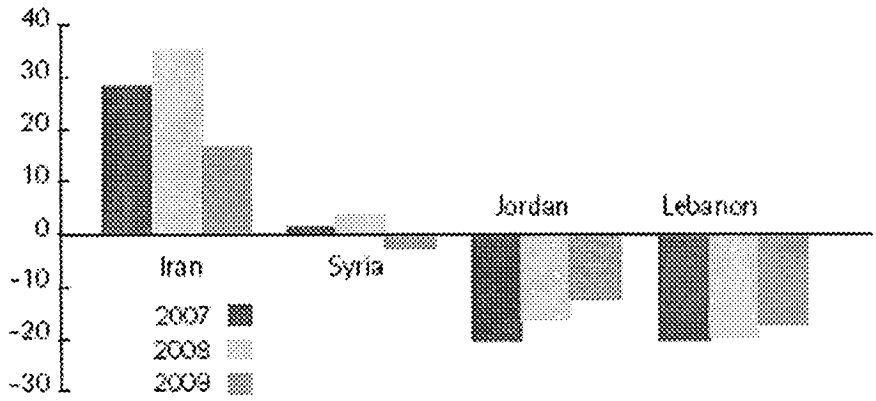

Figure 4.2: Current Account Balance as % of GDP: 2007-2009
Source: World Bank Data, 2010.

Lebanon's Balance of Payment (BOP) hit a surplus of $4.4B in the first eight months of 2009, an all time high level since 1990, with a year on year rise of 26.2%. On a monthly basis, the BOP recorded a surplus of $1,019M for the fifth consecutive month in August compared to a surplus of $402M in the same month last year. The surplus was boosted by the tourist season that reached its peak in August, leading to a positive change in both Banque du Liban and commercial banks' net foreign assets.

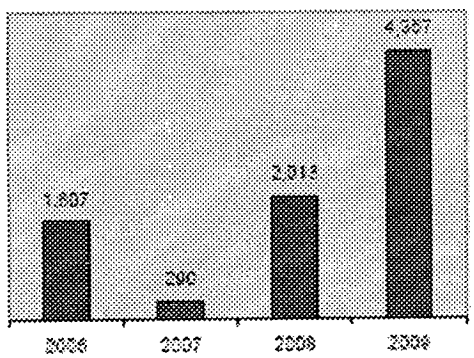

Figure 4.3: Balance of Payments up to August 2009 ($ M)
Source: Banque du Liban

4.2.1.2 Investment and Foreign Direct Investments (FDI)

In addition, the crisis is expected to a have a negative shock to investment in emerging markets. The World Bank report on "Global Financial Crisis and Implications for Developing countries" described the impact of financial crisis and expected that investment is expected to suffer as it bears much of the direct impact of the financial crisis. All of the main external sources of funds for investment are likely to drop off sharply. Portfolio investment will fall, as greater risk aversion keeps capital closer to home. While FDI is historically more resilient to shocks, it too is expected to decline. In addition, developing countries that are able to gain access to capital will pay higher interest rates, because of the flight to safety and greater risk aversion of lenders. Overall, it was expected investment in middle-income countries in 2009 to grow at less than half the 2007 rate of 13 percent. (Bank Audi, 2009).

In Lebanon, contrary to expectations, Table 4.1 shows that foreign direct investment (FDI) in Lebanon totaled $3.61 billion in 2008, constituting an increase of 32 percent from $2.73 billion in 2007, as reported by Lebanon This Week, the economic publication of the Byblos Bank Group.

Year	2005	2006	2007	2008
FDI ('000$)	**2,623**	**2,675**	**2,731**	**3,606**

Table 4.1: FDI in Lebanon 2005-2010

Source: Audi Annual Report, 2009

4.2.1.3 Remittances

As noted above, the global slowdown will reduce demand for commodities and manufactured goods, cutting into export earnings. And as labor markets slacken, foreign workers are likely to suffer disproportionate impacts on their earnings, which will reduce remittances. Remittances are expected to decline in response to the global slowdown,

but the impact on flows to recipient countries will depend significantly on exchange rate (World Bank, 2008). Some Asian economies have witnessed an anticipated fall in worker's remittances as unemployment grew in advanced host economies.

Already, the Inter-American Development Bank estimates that 2008 will be the first year on record during which the real value of inward remittances will fall in Latin America and the Caribbean. Remittances into Mexico (which are dominantly from workers based in the US) in August were already down 12 per cent compared to a year previously, and this will only get worse. There is also evidence of declining remittances from other countries that relied strongly on them, such as the Philippines, Bangladesh, Jordan and Ethiopia. In India, where around half of inward remittances currently come from the US, the same pattern of decline is likely.

Lebanon benefits from its large, cohesive, and entrepreneurial Diaspora. Over the course of time, emigration has yielded Lebanese 'commercial networks' throughout the world. As a result, remittances from Lebanese abroad to family members within the country totaled $5.6 billion and accounted for one fifth of the country's economy. Nassib Ghobril, the head of research and analysis for Byblos Bank, mentioned that Lebanese abroad supply Lebanon with about $1,400 per capita every year (Byblos Bank, 2009). Despite the world crises, workers' remittances in Lebanon remained vigorous and unaffected by the crisis, totaling $ 7.3 in year 2008 and $ 7.1 Billion in 2009.

A report released by the World Bank, said that Lebanon, along with Jordan and Egypt, are the oil importers that are most likely to benefit from the resumption of growth in the GCC through FDI and remittance inflows.

The report added that remittances from GCC represent a non-negligible share of GDP for these countries, and forecast remittance inflows to the developing economies of the MENA region to rise by 1.3 percent in 2010 and 3.4 percent in 2011.

In the table below we can witness the increasing remittances to Lebanon from year to year.

Year	2005	2006	2007	2008	2009
Remittances (000,000$)	4.961	5,237	5,855	7,286	7,103

Table 4.2: Remittances to Lebanon 2005-2010 ($ Millions)

Source: IMF report, 2010

The below table shows remittances inflows to Lebanon by Continent of origin.

Continents	North America	Europe	Oceania	Asia	Latin America	Africa
Percentages (%)	37%	33%	13%	11%	4%	2%

Table 4.3: Remittances to Lebanon by Continent

Source: IMF Report, 2010

4.2.1.4 Real GDP growth rate

Because investment was high before crisis, a large number of investments projects were already underway. As investment financing drops off, two outcomes are possible, neither of them attractive. In some cases, the projects will not be completed, making them unproductive and loading banks' balance sheets with non-performing loans. In other cases, when the projects are completed, they will add to the excess production capacity that will result from the global slowdown, and thereby add to the risk of deflation. As a result, it was expected that GDP growth of the developing countries will decline to less than 5% compared with an average of more than 7% in 2004-2007.

In Lebanon, BLOM Invest in its economic and financial news mentioned that GDP growth rate was 7.5% in 2007, compared to 0.6% in 2006. Driven by both improved consumption and investment components, real GDP is projected to grow by 6 percent in 2010, as per new IMF forecasts, thus slightly contracting from 2009 growth but maintaining a healthy pace. The World Bank projected economic growth in Lebanon of 6 percent in 2010 compared to a growth of 4.4 percent in the Middle East and North

Africa, 4.5 percent for the region's oil importers and 5.2 percent for oil importers with links to the GCC, as reported by: Lebanon This Week, (June 2010) the economic publication of the Byblos Bank Group. The report also projected real GDP growth of 6 percent in 2011 compared to 4.8 percent in the MENA region and 5.2 percent for oil importers. Lebanon's projected growth rate in 2010 would make it the fourth fastest growing economy in the MENA region behind Qatar at 18.5 percent, Yemen at 7.9 percent and Iraq at 7.3 percent.

The table below shows the percentage change of real GDP adjusted for inflation compared to previous years.

Year	2005	2006	2007	2008	2009
GDP Growth Rate	0.997	0.592	7.49	8.50	7.00

Table 4.4: GDP Growth % 2005-2009

Source: World Bank Report, May 2010

4.2.1.5 Unemployment

As investment and GDP are expected to decline as a result of the crisis, unemployment is expected to increase as there is inverse relationship between GDP growth rate and unemployment. In Lebanon, unemployment rate had sharply decreased in the year 2009 from 20% to 9.20% as shown in Table 4.5. This is a real tangible witness that Lebanon had more employment opportunities and the level on unemployment had drastically decreased showing an economy that is employing workman force as required by the various sectors of the economy. As a matter of fact, the GDP Growth which is accompanied by decrease in unemployment is a solid proof that Lebanon was not affected much by the worldwide crises.

Year	Unemployment rate	Percent Change
2003	18.00 %	
2004	18.00 %	0.00 %
2005	18.00 %	0.00 %
2006	18.00 %	0.00 %
2007	20.00 %	11.11 %
2008	20.00 %	0.00 %
2009	9.20 %	-54.00 %
2010	9.20 %	0.00 %

Table 4.5: Unemployment Rate in Lebanon 2005-2010

Source: Byblos Bank Weekly Monitor Report

4.2.1.6 GDP per capita

This development measure is positively related to the quality of banking regulation. In Lebanon, the GDP per capita was increasing year on year since 2007 as shown in Table 4.6; GDP per capita increased by about $1,200 from 2007 to 2009.

GDP per capita	Year
$13,100	2009
$12,400	2008
$11,900	2007

Table 4.6: GDP per capital in Lebanon 2007-2009

Source: World Bank Report, May 2010

4.2.1.7 Property price growth

Despite Lebanon's troubled history, property prices are now rising strongly, fuelled by firm demand and a very strong economy. Figure 4.4 below provided by the Real Estate Registry explain the nominal versus the real demand from the year 2004 till 2008. Since the US credit crisis started from the housing bubble, the reasons behind the increase in the property price will be elaborated later on in this chapter.

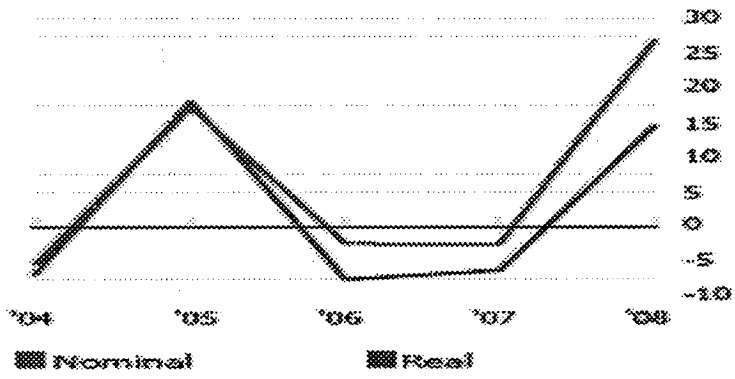

Figure 4.4: Annual Change in the Average Property Sales Price (%)
Source: Real Estate registry, Bank Audi, IMF

4.2.2 Financial Variables

4.2.2.1 Fiscal Surplus as a percentage of GDP

Demirguc-Kunt and Detragiache (1998) include this variable because it indicates governments' reluctance to restructure fragile banking systems and because high deficits prevent successful financial liberalization. Therefore, the policy mismanagement is often reflected in low fiscal surpluses/GDP.

Also, the first quarter of 2010 reported a further improvement in government debt and deficit ratios. While public revenues increased by 9.0 percent over the first quarter of 2010, public spending went down by 13.0 percent year-on-year, despite the rise in fuel oil prices, mainly as a result of public spending rationalization.

Based on preliminary figures of the 2010 budget draft, public deficit to GDP might slightly expand to 10.8 percent in full year 2010, but debt to GDP would continue its downward trend and would end the current year at close to 147 percent, the lowest level in 11 years (Halawi, 2010).

4.2.2.2 Foreign exchange reserves

Official foreign currency gross reserves almost doubled in 2008, increasing by 175% and reaching 60% of GDP at end 2008, up from 39% at end 2007. Decline in dollarization in the year's 2009 to 72.9% and 2010 to 66% in response to lower dollar interest rates and broadly unchanged returns in Lebanese pounds (7.2%) also contributed to sharp increase in reserves.

In summary, the adverse macroeconomics shocks that might hurt banks by increasing the share of nonperforming loans and increasing the probability of a crisis are not present in Lebanon. Macroeconomic variables such as the current account balance, and reserves are expected to improve in 2009. The key near term challenge for Lebanon is managing the impact of global economic slowdown. This is particularly so given the reliance of Lebanon on external inflows (net foreign inflows from services exports, capital, income, and remittances reached 57% of GDP in 2008, up from 44% in 2007).

4.3 Impact of Financial Crises on Bank's Performance

This section will analyze the impact of the financial crises on bank's performance, more specifically, on the variables suggested by previous studies to act as a warning for banking crisis. The purpose is to see whether banks were negatively impacted and to determine whether a crisis is probably to take place in the future.

The choice of these variables reflects the theory of the determinants of banking crises. Rojas-Suarez (1998) proposes an approach based on bank level indicators, similar in spirit to the CAMEL system used by U.S. regulators to identify problem banks. The author argues that in developing markets, CAMEL[6] indicators are not good signals of bank strength and that more information can be obtained by monitoring:

[6] CAMEL: The CAMEL methodology was originally adopted by North American bank regulators to evaluate the financial and managerial soundness of U.S. commercial lending institutions. The CAMEL

- the deposit interest rate,
- the spread between the lending and deposit rate,
- the rate of credit growth, and
- The growth of inter bank debt.

4.3.1 Deposit Interest Rate

Lebanon has always differentiated itself from its regional peers by its liberal economic system and its free and open capital and financial accounts. Since 1995-96, it has followed a de facto fixed exchange rate system against the US dollar, which effectively means that interest rates in Lebanon are largely determined by US rates. But to what extent ? The answer to this question depends on two factors are

First, the degree of 'home bias', or to what extent Lebanese investors are fully responsive to interest rate differentials versus the rest of the world.

And second, the presence of risk – of which there is no shortage in Lebanon -- and to what extent it moves with changes in interest rate differentials.

In this respect, there are three crucial interest rates in Lebanon with their associated risk components. First, foreign currency (FC) deposit rates versus those on international markets, the difference or spread between which reflects banking sector risk; Lebanese pound (LP) deposit rates versus those on FC deposits, the spread between which measures exchange rate risk; and the rates on FC sovereign bonds versus similar rates on US bonds, and the difference between which signifies default or sovereign risk.

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reviews and rates five areas of financial and managerial performance: Capital Adequacy, Asset Quality, Management, Earnings, and Liquidity Management.

A favorable environment has characterized the Lebanese economy in 2010. Lebanon is maintaining its commitment to exchange rate stability and to the soundness of its banking sector, in addition to implementing an ambitious fiscal adjustment program.

The confidence in the Lebanese economy had a significant drop in Treasury Bills' interest rates, followed by a cut in commercial banks' average deposit and lending rates in Lebanese pound (LBP) and in foreign currencies. In parallel, USD holdings were being converted on a wide scale into LBP holdings. Moreover, the Balance of Payment performance, which started to improve, remained on the same trend, with cumulative surpluses.

Table 4.7 below shows the drop in LBP and US interest rates throughout the three years from 2006-2010

% Interest	2006	2007	2008	2009	2010
1-Month $ LIBOR	5.3	4.6	3.1	3.0	2.7
1-Month FC Deposit	5	5	4.5	4.5	3.7
1-Month LP Deposit	8	7.9	7.7	7.5	7.0

Table 4.7: Interest Rate in Lebanon 2006-2010

Source: IMF Working Paper WP/06/94, Evidence from 1995-2005

4.3.2 Commercial Banks Profits

High performing Lebanese banks have challenged all odds this year and even came on top. From a severe global recession that hit Gulf oil countries real hard to a gradual fall in interest rates on Lebanese pound and all the way to the absence of a government that should run the daily affairs of the Lebanese. But despite all these negative factors, Lebanese banks in general and most notable the large banks have continued to record relatively high profits in the first nine months of this year.

Lebanese banks have drawn over $12 billion in customer deposits in the first eight months of 2009.Bankers in general attribute the solid performance of their banks to two things: high confidence in the Lebanese banking system and the effective measures

adopted by the Central Bank of Lebanon to safeguard these banks from any unforeseen pitfalls in the future.

It is worth mentioning that the financial statements of the top three Lebanese banks for the first nine months of 2009 show that net profits of Lebanese banks grew by 12.2 percent over the first nine months of 2009 relative to last year's corresponding, in a period where most regional and global banks are witnessing net contractions in earnings. Profits of commercial banks have reached $1.079 billion in 2008 and $ 1.116 Billion in 2009

4.3.3 Commercial Banks Total Assets

On the other hand, the banking sector in Lebanon continued to show solid balance sheets as commercial banks' combined assets continued to increase since 2006. The assets registered a monthly increase of $2B in August to reach $107.37B, adding 18.4% from a year earlier. The Association of Banks in Lebanon released the consolidated balance sheet of commercial banks showing that total assets reached $119.9bn at the end of March 2010, up 4% from end-2009 and up 22.4% from end March 2009.

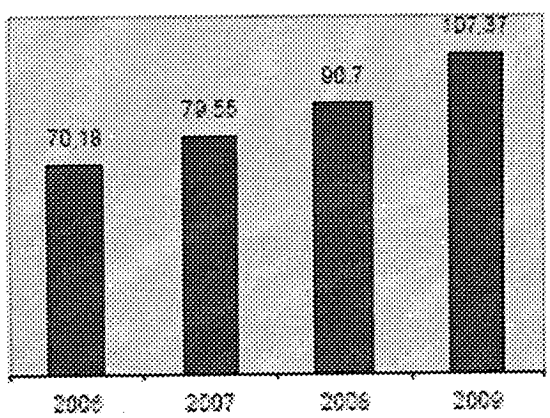

Figure 4.5: Commercial Banks Total Assets in August 2006-2009 ($billion)
Source: Banque Du Liban

4.3.4 Banque Du Liban Foreign Assets

As assured by the BDL governor Riad Salameh during a speech in the introduction of the "Mediterranean Investment Forum", inflows in the first six weeks of the year are still growing. Up to February 15, foreign assets increased by 4.47% to $20.65B as compared to the previous month. Moreover, gold reserves also recorded a sharp month on month increase of 15.25% to $8.6B caused by a 15.42% appreciation of gold prices.

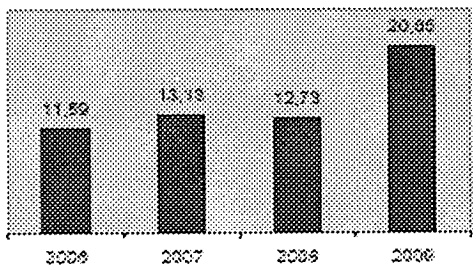

Figure 4.6: BDL Foreign Assets as Feb 15 from 2006-2009 ($M)
Source: ABL

4.3.5. Bank deposits

Lebanese's financial market developments have been favorable despite the global financial turmoil. Commercial bank deposit inflows, which are the main financing source for the large government deficit, have remained strong.

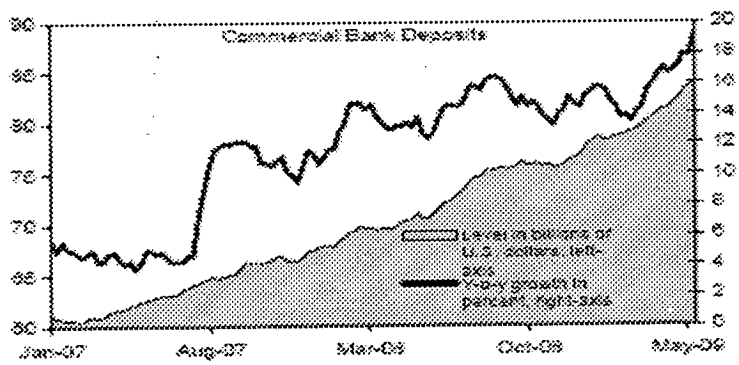

Figure 4.7: Commercial Bank Deposits in Lebanon 2007-2009

Source: IMF, 2009

Deposit inflows to Lebanese commercial banks increased by 3.7% ($ 2.7 billion) between August 2008 and January 2009, encouraged by the record profits registered by Lebanese banks at the end of 2008. Leading investment bank EFG-Hermes said in a note that aggregate deposit growth in Lebanon was a high 19 per cent year-on-year in June 2009 and over 10 per cent since December 2008, following strong growth in deposits in 2008.

"Our forecasts had assumed slowing deposit growth in 2009 owing to tighter liquidity both globally and regionally. Deposit growth for all banks was well ahead of estimates, and end-June 2009 deposits are already higher than our original December 2009 forecasts. While Lebanese banks' deposit growth has traditionally been supported by recurrent capital inflows from Lebanese expatriates, deposit growth is lately being further bolstered by high interest rates in both short-term Lebanese pound deposits 7.10 per cent and US dollar deposits 3.20 per cent.

Therefore, at the deposit level, activity continued to be driven by a strong increase in customer deposits within the context of steadily strong inflows. A bank deposit growth of $2.4 billion (2.5 percent) was reported over the first three months of 2010, allowing banks to pursue their financing activities aided by a high financial flexibility. Lending activity managed to gain some vigor reporting a healthy growth of circa $2.3 billion (8.2 percent) in an environment of de-leveraging across the globe.

4.3.6 Deposits Composition

With respect to private sector deposits at commercial banks, they continued to increase; an increase of 19% from August 2008 to $89.3 bn. Also, private sector deposits totaled $98.1bn in March 2010, up 2.5% from end-2009 and up 21.9% from end-March 2009. Deposits in Lebanese pounds reached $36bn, up 5.8% from end-2009 and up 38.6% year-on-year, while deposits in foreign currency reached $62.1bn, up 0.6% from the end of last year and up 13.9% from end-March 2009.

Non-resident foreign currency deposits increased in 2009 as expatriate and foreign inventors consider Lebanese banks safe for their capital, increasing by 22.8% year-on-year. In parallel, deposits of non-resident banks reached $5.5bn, up 19.8% from end-2009 and up 24.6% from end-March 2010. Further, the average deposit rate in Lebanese pounds reached 6.11% compared to 7.10% a year earlier, while the same rate in US dollars was 2.86% down from 3.26% in March 2009.

The above situation proves that the deposits in the Lebanese banks are increasing on a continuous basis despite the decrease in interest rates for the USD and the LBP currency proving the trust in the Lebanese economy in general and the Banking Sector in particular.

Moreover, the dollarization rate of deposits fell to 66% in August, its lowest level since 2000, from 72.9% a year ago because depositors continued to switch their savings to the local currency on higher yields.

4.3.7 Credit growth (growth of loans to the private sector)

Loans to the private sector amounted to $30.7bn, up 8.2% from end-2009 and up 20.7% year-on-year. The dollarization rate in private sector lending reached 83.5% compared to 84% at end-2009 and 85.9% a year earlier. The average lending rate in Lebanese pounds was 8.69% in March 2010 compared to 10.10% a year earlier, while the same average in US dollars was 7.01% compared to 7.32% in March 2009.

4.3.8 Mortgage Loans

As presented in figure 4.8, the loans granted by Lebanese banks to both the real estate sector and the home loan sector proving excess demand for financing to both sectors.

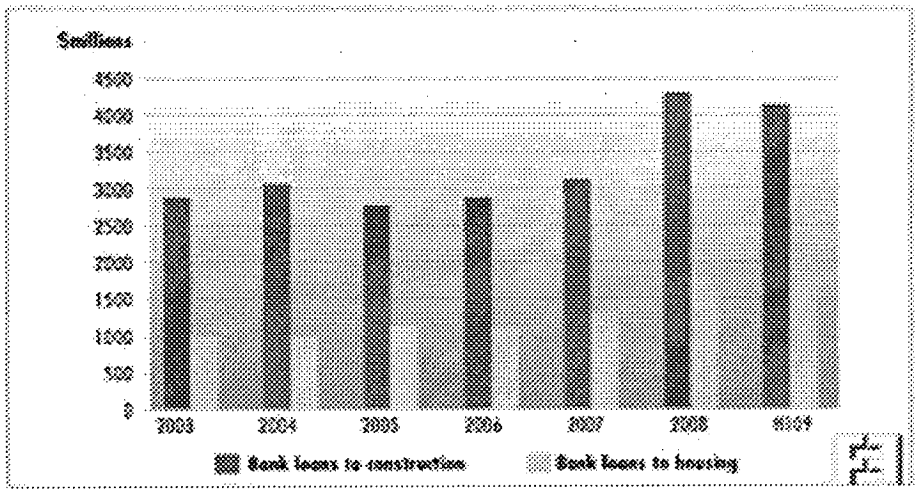

Figure 4.8: Mortgage Lending expansion in Lebanon 2003-2009
Source: Banque du Liban, Credit Suisse

A recent Central bank report presents the following figures regarding the growth of the home loan market. As shown in figure 4.9, in 2008, the Lebanese mortgage market grew to 6% of GDP, from an average of 4.9% in 2004.o 2007. Outstanding housing loans totaled LBP2.66 trillion (US$1.77 billion) in 2008, up 34% increase from a year earlier".

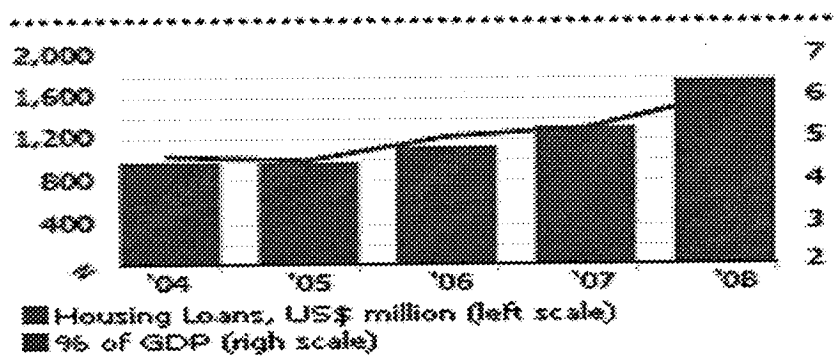

Figure 4.9: Housing Loans in Lebanon 2004-2008
Source: Banque Du Liban, Bank Audi

4.4 Why Lebanon was an exception

Lebanon economy is noted for its strong resilient power and stand alone trait. When the entire world collapsed in the recession in the last years, Lebanon's economy registered a surprising 9% growth rate. The growth was nurtured by controlled banking regulations that restricted credit and therefore, its impact during the recession.

Emigration has always helped the nation with a commercial network that is spread over the whole world. It has supported the country in Foreign Deposit Investments in banks strengthening their liquidity base, as well as providing the expertise and the technical know-how for many industries. The Non Resident Lebanese workman force contributes to huge remittances amounting to 20 % of GDP (Gross Domestic Product). Tourism is a major contributor to the economy in addition to the financial sector; therefore it is a service economy base which traditionally contributes to about 70% of GDP.

The economy growth rate remained on an increase and showed a good progress from 2007 – 2009. The main catalyst for the growth remained the strong regulating measures by the financial banking sector which remains the most thriving industry in the country and the major lever of the economy. It is worth mentioning that this is mostly credited to the banks' strong retail deposit base, which boosts their funding profile

The prime concern, however, remains the increasing public debt which is the result of slow privatization rate. Official statistics indicate that the public debt in 2009 was about 156 % of GDP. However, the public debt may increase if the private sector stays away from owning the key industries.

In the past two years, Lebanon witnessed a huge increase in the property prices resulting in a sharp increase in the housing market which has boomed recently. The economy has robustly grown and large inflows of foreign capital have poured in. Money had been pouring into the economy from the Gulf region either through Arabs who tend to buy real estate and spend money for tourism or other sorts of investments and from

Non Resident Lebanese who also buy homes and other forms of real estate and inject money in the circular flow of the economy to their families and relatives. As a result both housing investment demand and supply increased markedly. Figure 4.10 below shows that the volume of property sales is continuously increasing at an increasing rate from the years 2003 till 2008.

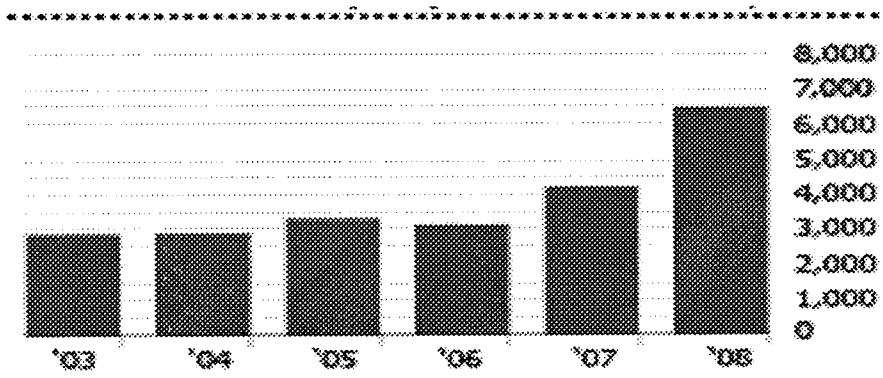

Figure 4.10: Total Value of Property Sales in Lebanon: 2003-2008
Source: Real Estate Registry, Bank Audi

4.4.1 Increase in the prices of housing market (The Bubble): Will it burst?

In order to study the situation and compare Lebanon to the United States situation, A special attention will be directed toward the Lebanese housing market to examine the exact reasons behind the increase in price and to see whether the house market bubble will burst As a matter of fact, the property market in Lebanon continued to perform well with an economy that is still growing. The demand for Lebanese residential properties remained relatively strong in 2009. Foreign investors as well as Lebanese expatriates continued to invest in residential properties despite the global economic turmoil. Real estate transactions in Lebanon in the 1st quarter of 2010 jumped by 41% compared to the same of 2009, reaching over USD 2 Billion dollars as released by the Directorate of Real Estate. Lebanon's Property sector flourished in the first quarter 2010 benefiting from strong economic growth, continued large remittances from Lebanese working abroad, large inflows of foreign capital, population growth and robust tourism.

A report from Audi's weekly monitor reported that 19% of sales transactions are related to foreigners whose demand is even going on an upward trend, mostly Arabs who tend to invest in vacation homes.

The value of property transactions reached more than $4.3 billion in 2008 and this year is expected to be even higher. 'We expect this growth to continue,' said Bilal Abdallah Alayeli , the head of the Orders of Engineers in Lebanon.

Concurrently, housing demand from domestic buyers was elevated. Therefore, the whole situation had been transformed into two opposite views in describing the situation. Some analysts see the price increase module is just a temporary one due to special situation that Lebanon had passed through and this increase will then stop. On the other hand, others provide detailed explanations about the reasons for this boom and describe it as the equilibrium market.

4.4.1.1. Pessimistic View about the increase in Housing Prices

Pessimists explain that house prices in decent areas have increased so much that they're currently much more than in luxurious cities in countries enjoying political stability and higher GDP per capita. Although the governor of the Central Bank claims that the demand is 'real', there does not seem to be a real logic behind the continuous sharp increase in home prices.

This opinion contributes the housing bubble to the following key issues:

- The 2006 war which occurred between Israel and Hezbollah had shut down the whole country for over two months and had huge losses to major businesses; all of this had its direct effect on the Lebanese Resident who became jobless. Many in the Lebanese workforce left to rich Gulf countries to seek jobs in more stable environments. These jobs paid more. Additionally, the destruction of the houses of many Lebanese increased the price of cement and other raw construction materials in the rebuilding phase.

- The sharp increase of the price of oil worldwide had a positive effect on the salary of the many Lebanese working in Gulf countries, particularly in Saudi Arabia, Bahrain, Qatar and Abu-Dabi, which increased the demand for homes.

- The relative calm in Lebanon since 2008 allowed a lot of wealthy Arabs to purchase mutli-million dollar apartments.

- The very low Central Bank interest rates played a role as well. There are two public housing agencies in Lebanon – the Housing Bank, established in the 1970s, and the Public Housing Authority which both had given very low interest rates to low and medium sized income earners.

- They suggest that the lax bank rules in giving mortgage loans essentially depend on giving loans to acquaintances, rather than on relying solid credit data. Credit facilities are not being granted based on sound credit criteria but rather it is granted from bank mangers to their relatives, acquaintances defying the credit terms that they should abide by.

- The 2007 Nahr El Bared war forced around 40,000 Palestinians to flee the refugee camp and buy or rent real estate

- The 2008 - 2009 world financial crises forced many Lebanese living abroad to return to Lebanon seeking better opportunities.

Pessimistic groups see that the increase in the housing prices is only a temporary stage due to the aforementioned reasons and it will be followed by a sharp decrease. Therefore, investors should not capitalize much on the price increase. Pessimists also stress the discrepancy in price increase since the latter is concentrated in Beirut city. There exists a big variance between the prices inside Beirut and the suburbs. As an example, a decent housing can cost around USD 150,000 if it is far away from Beirut, cost four times that amount if it is in the Suburbs of Beirut, and millions of dollars if it is in the Beirut Central District.

It is noticeable that most people who buy in the Beirut Central District are Arab Investors. Since home prices are rising constantly, many Lebanese and other investors are buying (through a mortgage) houses in order to resell them later (to other potential investors) at inflated prices. This strategy, as well as other deceptive strategies by the real estate agents left many Lebanese, both inside and outside Lebanon, unable to buy property in Lebanon anymore.

Additionally, the inflated home prices are leading to an increase in rental prices, further increasing inflation and decreasing the real income of the Lebanese living in Lebanon. Other Lebanese who are end-buyers (e.g. not thinking of reselling their home) are committing to long term and risky loans in order to repay their mortgage. Since the banks only give 60% of the price of the house, the banking system in Lebanon can sustain a decrease of 40% of home prices in case of a bubble burst, this will increase the effect of the bubble burst on the buyer, as sometimes the 40% can constitute one's life savings (as well as his family's).

4.4.1.2 Optimistic View about the Increase in Housing Prices

On the other hand, there is the other party's optimistic opinion that counters the first one and argues that the situation is due to many permanent reasons:

- The housing price is driven by a real demand of real estate properties.

- The real estate prices in Lebanon were originally low during the past years because of wars and political instability. After the stability and promising economy of Lebanon, the demand for houses increases due to the huge interest of the gulf tourists in the Lebanese market and the Non Resident Lebanese flow of fund into the Lebanese

- The world financial crises directed huge foreign and local investors into the Lebanese Real Estate market as they see in Lebanon a huge room for growth since the neighboring countries had experienced a huge increase in their real estate prices during the past couple of years and which overcome Lebanon and especially Beirut by far. Therefore, Lebanon is catching up to meet the level it should be at in price equilibrium.

- Wealthy Lebanese expatriates and Arab property investors fed up with the slump in places like Dubai are among the heaviest investors in the country going up to about 20% as mentioned by Bank Audi weekly business monitor.

- According to real estate brokers, most of the apartments that are sold in Beirut and Mount Lebanon are small to medium in size and the property boom in Lebanon is only natural because the county's size is very small compared to the population.

- One reason that demands for apartments is likely to continue rising is that the Central Bank has given incentives to commercial banks to increase house loans at very competitive rates. Banks are offering 20 to 30 year housing loans at interest rates 5.9% and under.

- The news is encouraging to developers who are increasingly looking at Lebanon as a prime market in the gulf region. Major Real Estate Developers say they have attracted millions of dollars in off-plan sales in just very short periods of time of their operations with about 25% of investors coming from the Gulf States.

- Stimulated by attractive off-plan prices, which are significantly lower than those set for the construction period, the intense demand was unprecedented in Lebanon's real estate sector.

- Developers are delighted with such enthusiastic demand from investors and future residents which resulted in an exceptional volume of sales from the very

first day. It shows the high level of confidence in the future of Beirut and Lebanon. The aggressive developers approach consolidates the belief in the strength and stability of the real estate sector in Lebanon.

- Of equal weight to the above, the robust and the well studied Lebanese banking sector plays an important role.

- Since Lebanon had passed through several security turmoil's, the Lebanese banks had adopted a very conservative approach towards lending, with strict regulations imposed by the central bank to safeguard the depositor's money and protect the economy from political instability. These conservative approaches and the tight regulations have generally left Lebanese banks unscathed by the world financial crises from the years 2007 till 2010. Therefore Lebanese banks remained under all circumstances high on liquidity and highly reputed for their security.

All the above facts were proven by the below reports from the World ranking agencies, World Bank and others.

In late 2008, Moody's[7] shifted Lebanon's sovereign rankings from stable to positive, acknowledging its financial security, with an increase of 51% in the Beirut stock market.

The index provider MSCI[8] ranked Lebanon the world's best performer in 2008. Lebanon is one of the only seven countries in the world in which the value of the stock

[7] Moody's: Credit rating agency which performs international financial research and analysis on commercial and government agencies. The company also ranks the credit-worthiness of borrowers using a standardized ratings scale.

[8] MCSI (Morgan Stanley Capital International): Stock market index of 1500 world stocks. It is maintained by MCSI Inc. and it is often used as a common benchmark for global stock funds. It is designed to measure equity market performance in global emerging markets.

market increased in 2008. The Lebanese economy experienced continued resilience, growing 8.5 percent in 2008 and seven percent in 2009.

According to a report by the World Bank, GDP growth in 2010 should remain steady at seven percent. The report cited multiple factors for Lebanon's recent and predicted growth: less-than-expected declines in exports, steady remittances, increased foreign investment, strong domestic demand, booming tourism, and a thriving financial sector. Since Lebanon enjoyed solid economic performance despite a global recession, The World Bank expects continued growth as the global economy improves in 2010.

Also, the Daily Star stated that the central bank issued in 2009 circulations aimed at decreasing interest rates on housing loans and other environmental and educational project loans. Contrary to what some people may have thought, this hike in prices was not due to the drop in interest rates but to a real demand caused by several factors such as political stability and the increase in the number of people residing in Lebanon, in addition to improvement in the economic situation.

Given these two views, there are solid proofs supporting the optimistic view that the real demand exists in the real estate market. Therefore the price appreciation is not driven by fictitious demand but rather by real demand from various parties involved in the activity.

4.4.2 Buyers and their Incentives

In order to better understand the Lebanese situation, it is very important to know who the customers are and their intention when they are buying houses.

In Lebanon, home buyers fall into three major categories:

- *Local Lebanese salaried and self employed* who mostly buy houses on a mortgage loan basis. This sector needs homes for their personal use. About 95 % of this sector finances their purchasing activity from banks. Their purchasing

powers does not allow them to any kind of speculative trading and banks provide strict controlled rules which ensures that the house is only intended for personal use and not for any trading activity when issuing mortgages.

- *Non Resident Lebanese* who buy bigger houses and more luxurious ones due to their higher purchasing powers. Their purchases could be either cash or through housing loans towards which recently banks recently are directing a big attention

- *Arab investors* from our neighboring GCC counties: This segment buys top of the line apartments in Beirut Central District or Villas in the top end touristic areas especially the mountain sites. The housing market seems to benefit from its Arab neighbors troubles. Despite the crisis engulfing Dubai and other GCC countries, Arab investors and wealthy Lebanese expatriates have been moving money into Lebanon's property market.

It doesn't hurt that Lebanon's climate is great, the food wonderful, and Beirut society can be liberal – the heartland of pleasure and relaxation for the region.

Homebuyers purchase an apartment unit during the construction phase, put a down payment and make monthly installments until the project is completed. Some homebuyers pay cash, or benefit from pre-selling schemes. Some buy finished apartments, pay down payments and finance the rest through banks.

4.4.3 Role of the Lebanese banks

Housing loans have traditionally only been available to the developers of new properties. Yet today, several banks have begun offering mortgage loans directly to homebuyers. Banks had tailor-made several housing loans programs to fit all segments of the society from low income earners to high income earners. Moreover, special programs had been offered to non-resident Lebanese who normally tend to benefit from higher loan amounts. Normally banks had imposed higher down payments for non-resident Lebanese reaching sometimes 50 %. Normally no lending programs had been

established to Arab foreigners since they own the purchasing power allowing them to own properties in Lebanon for their personal use. As mentioned above, in 2008, the Lebanese mortgage market grew to 6% of GDP with a total outstanding housing loan of LBP2.66 trillion (US$1.77 billion).

Interest rates for housing loans were not issued on subprime basis. Therefore, they are usually tied to the US prime rate or *LIBOR, with a fixed percentage added*, and currently 5.9%. Loans are also issued in Lebanese currency mostly with dual programs between banks and the central bank and they normally link pricing to the T bills rates offered by the government which is regulated by the Beirut stock exchange. The loan-to-value (LTV) ratio ranges from 50% to 85% of the appraised value or actual purchase price of the property (whichever is lower). The term period is usually from 20 to 30 years. Lebanese banks require both life and house insurance from loan applicants and follow the strict rules of the central bank in funding their loan activity.

At the same level, the country's banking sector has been resilient. In September 2009, banking activity grew by an astonishing 20% from a year earlier, the highest in the region, according to Bank Audi, with assets at LBP23.4 trillion (US$15.6 billion) in September 2009. The sector's strength is attributable to:

- Conservative bank lending practices
- Excellent regulation and supervision by the Banque du Liban and the Banking Control Commission
- Limited exposure to derivatives and structured products. Prior to the eruption of the global crisis, the central bank issued a directive preventing banks from investing freely in structured financial products
- Banks cannot lend property investors more than 70% of the real estate project cost.

4.4.4 Role of the Central Bank of Lebanon

In order to enhance the Home Mortgage Market, the central bank allowed banks to lend their legal reserve -which is normally dead money placed in the central bank as percentage of deposits - to Secured lending mainly to Housing Loans. This fact had enhanced the competitiveness in the market as banks became able to offer lower interest rates in local currency.

The Central bank is taking severe measures to quantify the whole situation and not to create fictitious demand and over leveraging. Central bank Circular 177, issued on July 21 2009, called for Lebanese banks to give only loans which do not exceed 60 percent of a property or project's cost.

The new measures seek to restrain the market and keep supply and demand in balance. As demand picks up, construction and development are sure to follow, with the possibility of inflated property values totally out of control with the actual underlying assets not far behind. The bank is making it a little harder to invest and develop in order to avoid a massive wave of defaults if supply grows too fast, causing prices to drop.

The following section lists the set of circulars put into effect by the Lebanese Central Bank that mitigated the risk of the crisis seriously contaminating the Lebanese Banking Sector:

- Circular number 27 dated 28/6/1996: Lebanese banks are prohibited from dealing with derivative instruments except for hedging purposes.

- Circular number 171 dated 23/6/2008: Lebanese banks are permitted to trade with only BBB or higher rated bonds with the trading value capped at 50% of the Bank's capital. Furthermore, banks are allowed to participate only in capital guaranteed "A rated or higher" structured products up to 25% of the bank's capital.

- Circular number 170 dated 23/6/2008: Lebanese banks must obtain the prior consent of the Lebanese Central Bank before marketing any type of financial instruments.

- Circular number 177 dated 21/7/2008: Banks must not extend real estate loans whose values exceed 60% of the desired property or real estate project under construction. Concurrently, banks are prohibited from practicing real estate brokerage or real estate arbitrage activities.

- Memo 13/2007 in 21/7/2008: Banks are required to report the value of their foreign investment portfolios as well as evaluating the respective portfolio's profits or losses on a regular and consistent basis.

- Memo 22/2008 in 15/9/2008: Banks are asked to report the value of financial instruments' included on their books and those of their clients' accounts on a regular quarterly basis.

- Memo 23/2008 in 15/9/2008: Banks are also required to report the value of their investments in any Lehman Brothers' related products.

Figure 4.11 below shows a schematic drawing of the shields of defenses that the central bank imposed on the Lebanese banks in order to safe guard the customer's interests and impose a very regularized banking activity.

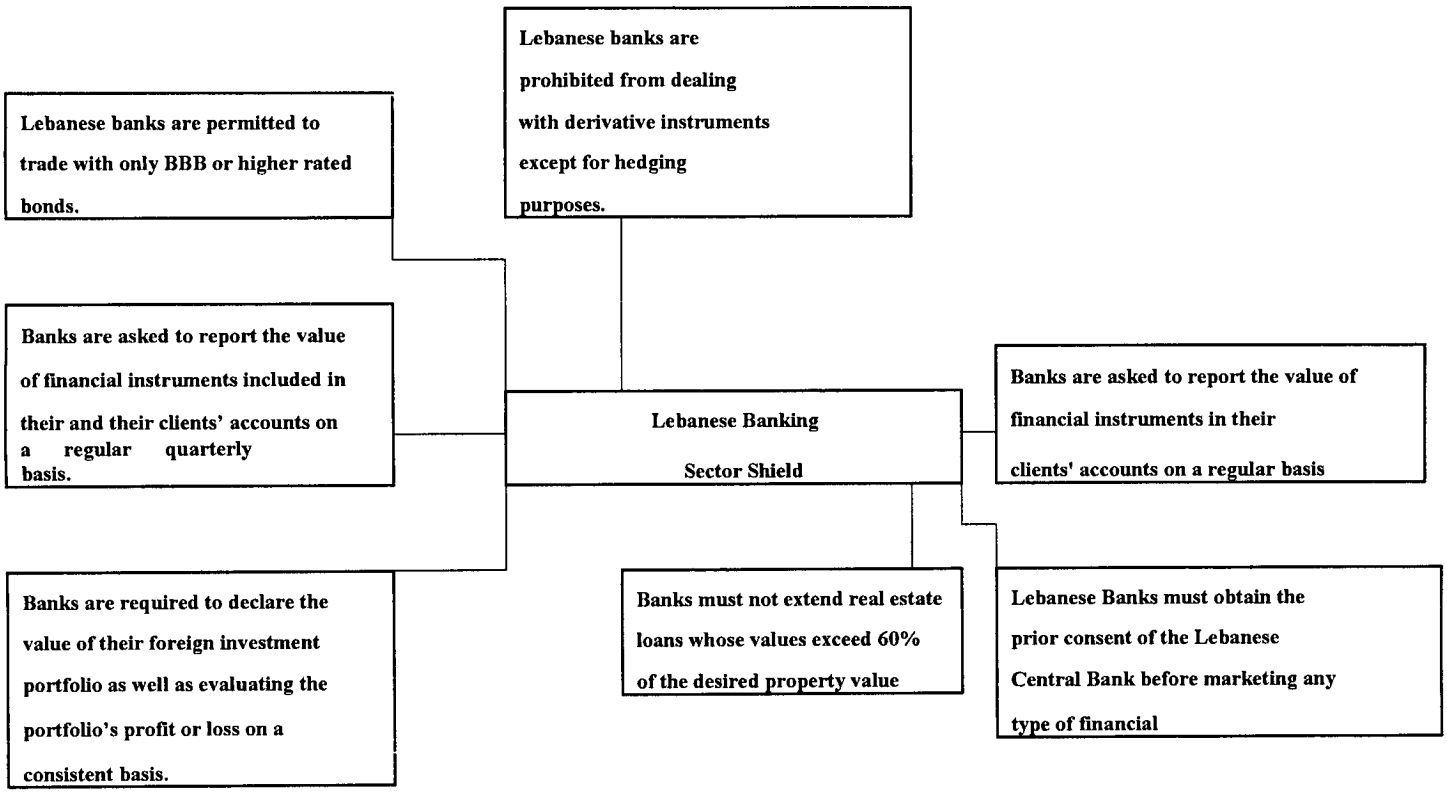

Table 4.8: Lebanese Banking Sector Shield
Source: Central Bank " Banque Du Liban "

4.4.5 Scarcity of land

As a matter of fact Beirut and the suburbs are almost fully packed with residential properties with very minor land left to sell or use. Therefore, it is a normal economic logic that the demand for scarce resource tends to increase, thus raising the prices of apartments. As described earlier, the demand is not fictitious and it arises from a real need of the three parties to buy houses in order to occupy and not use them for trading.

Central bank Governor Riad Salameh rules out any real estate bubble and says that he does not expect a real-estate bubble to take place in Lebanon, and that the surge in property prices in the country is due to a real increase in demand. He added that the

prices of real estate in Lebanon have readjusted according to the conditions of the market.

4.4.6 Registration and Mortgage Fees

The registration and Mortgage fees can range between 7 to 8 % of the value of the property. Therefore, the above situation hinders the investor's ability to make frequent speculations in the housing market thus decreasing the trading effect. Therefore, the investor will have an automatic 7 to 8 % mark up price over the price of the house purchased.

4.4.7 Role of Developers

Real Estate is shifting from a family owned business to a professionally run one. The best example is that Developers are now conducting surveys and market researches before they start building. This was not the case a few years ago. Another positive sign is the return of international investors to Beirut Central District. Virgin, Ericsson, and almost all the leading financial institutions of the country have established their Head or Regional offices in this area Therefore, the huge effort that has been consented by the country to re-attract investors is about to give its fruits. This success is not so surprising: Lebanon has many advantages for large corporations. The geographic situation makes it a privilege gateway to all the Arab countries, and the Lebanese way of life is more attractive for European than the one that can be enjoyed in other neighboring countries.

The future can be seen with optimism as many important projects are still on an ascendant phase. In Beirut Central District, a 'chain reaction' can be expected the more companies and governmental institution will be established there, the more attractive the district will be for the others. In addition, the dragging effect is not limited to the central district, the bordering areas such as Sodeco, Hamra, Verdun and Tabaris are also benefiting from the boost.

4.4.8 Low Interest Rates

Interest rate levels exhibit negative correlation with the growth in the real estate sector. Lower interest rate levels trigger lower financing cost for real estate developers and home owners. Interest Rates reached 4.75% in some loans issued in a dual program between banks and the Central bank of Lebanon. This was evidenced this year, putting the number of real estate transactions at much higher levels. These dual programs were enhanced by the healthy liquidity in the Lebanese banking sector and the efficient management implemented by Lebanese banks played a vital role in the development of the Lebanese real estate sector.

4.4.9 Laws on Foreign Ownership and Low Tax Rates

The new laws on foreign ownership lessened the stringent ownership rights of real estate properties in an attempt to revitalize real estate investments in Lebanon. Thus, recent modifications eradicated discrimination for property ownership between Arab and foreign nationals with lower real estate registration fees, from 6% for Lebanese and 16 percent for foreigners to 5 percent for both national and international investors.

According to the newly published report on Lebanon by the Institute of International Finance (IIF) in Washington "The financial system in Lebanon remains resilient to global shocks. Relative political stability, if maintained, will help to sustain growth of about 4 percent in 2009 as compared with an estimated 7 percent in 2008". The peg to the dollar has constituted the effective anchor for Lebanon's financial stability. The government's pressing fiscal and debt burdens remain Lebanon's paramount economic challenges. Lebanese banks will remain sound and profitable with adequate liquidity to expand credit to the private sector to support economic growth. Despite the large debt overhang and external vulnerabilities, investors and depositors are comforted by Lebanon's track record of zero default, the country's large liquidity cushion, and continued support by donors including international financial institutions, like the IMF. The downside risks to the outlook stem from deterioration in the political and security situation and a deeper global recession.

Growth was primarily driven by the real sector's construction and tourism activity. The former recorded a year on year increase of 47% to 12.4Msqm in 2008, whereas the latter went up by 35% to 1.32M visitors. In the external sector, the current account deficit is offset by foreign direct investments that reached $3.5B in 2008. Moreover, Banque du Liban's (BDL) foreign assets reached $19.7B, increasing by 58% from 2007 and representing 14.7 months of import cover. On the other hand, the government's fiscal and debt burdens remain Lebanon's main economic weaknesses. The fiscal deficit increased by an annual 14.7% to $2.9B and is aggravated by the growing debt financing repayments that reached $3.3B, amounting to 50% of government revenues. This is compounded by the treasury transfers to loss-making

Perhaps, the most promising sector of the economy lies within the banking sector where private sector deposits reached $77.8B by the end of 2008, surging by about $10B from 2007. The sector is well placed to sustain the financing of the country's growing debt.

As for the outlook and with the slowing down of the world economy, Lebanon is still likely to register a growth of 4% in 2009, affected by the drop in tourism receipts, remittances and FDI

However and maybe the most daunting risk is the possibility of a sudden deterioration in the security situation but with the current high level of bank deposits, Lebanon has enough caution to absorb similar worst case scenarios.

Chapter Five

Recommendations and Conclusion

5.1 Conclusions and Recommendation

As previously explained in the chapters of the thesis, the American housing market today is in disarray, with first quarter of 2010 seeing the lowest number of houses sold since the Sub Prime crisis commenced . For example, one year ago, the average time to sell a new house was about five months, but the average clearing time has since dropped to almost twelve months thus culminating the liquidity issue for the banks. Over and above, the effect of this downturn along with the declining values of the real estate has rippled through the economy and is leading some economists to predict a downturn across the board.

On the other hand, Lebanon real estate market has indicated a correction in an upward trend at the present time. Developers and Real Estate experts say that prices in Lebanese real-estate markets will double or triple in the coming years. (Nash, 2010).

Furthermore, Lebanon represents a market which is unlikely to face a direct crunch due to the capabilities of its Middle class income expatriates and Non Resident Lebanese plus the Arab investors who have a continuous apatite to invest in Lebanon. At the same time, scarcity of land, especially in Beirut city and the suburbs would always elevate the prices of real estate upwards.

The Lebanese Banking Sector on the other hand is supervising the lending activity and is applying strict measures and controls over Real Estate Lending in order not to have the Lebanese Banks be engaged in reckless activities in this sector.

This thesis has exhibited the market sector of Real Estate fluctuation and financing in both the U.S. market and the Lebanese market. This thesis has attempted to

show the various procedures of financing techniques in both markets in order to show the drawbacks of each market and the benefits generated from the different types of financing procedures.

The objective of this thesis has been oriented towards indicating the variations between both markets for the simple purpose of identifying whether Lebanon is apt to fall into the Subprime lending trap and or is able to adopt the various derivatives used in the U.S. which might lead the local banks to adopt. In other words, the objective again of this thesis is to figure out how much is the percentage possibility of the domestic Lebanese banks being lead into the same atmosphere and the exercise of securitizing the pool of the real estate lending and whether if it is able to market these products as the case in the U.S. which was done by their investment banks.

Accordingly, we have tested the two markets that operate differently due to the laws and regulations applied in both countries that are related to real estate financing.

In line to the above, the thesis has shown the differences between what happened in the United States and Lebanon and these issues are indicated below under the following points:

- **Investment Banks in the States VS the Role of commercial banks in Lebanon**

Many economists believe that the U.S housing bubble was caused in part by historically low interest rates, both short and long term. In 2007 the housing bubble was driven "by the decline in real long term interest rates". (Bianco, 2008) Moreover, The US government also forced interest rates down in order to cover for the trade deficit. Hence, the United States government borrowed money from abroad in order to inject cash in the economy, thus cash flowed into the USA to finance its Deficits. This created demand for various types of financial assets, raising the prices of those assets while lowering interest rates.

It would have been impossible for lending to increase at such a fast rate if the lenders were required to keep every loan on their books. In order to extend as many loans as possible, lenders would only hold loans temporarily before selling them to investment banks. The investment banks, or the issuers, would then package the loans together and sell them.

Investment banks on Wall Street issued huge amounts of MBS and CDO, which were assigned safe ratings by the credit rating agencies. In effect, Wall Street connected this pool of money to the mortgage market in the U.S., with enormous fees accruing to those throughout the mortgage supply chain, from the mortgage broker selling the loans, to small banks that funded the brokers, to the giant investment banks behind them.

On the other hand, in Lebanon, the Central Bank supervises and regulates the banking system. The lending activity has been quite controlled by commercial banks which have been required to meet a minimum Solvency Ratio of 12 % starting 31/12/2001 which is well controlled and reported. (Central Bank of Lebanon Circular number 44 and Decision number 6939).

Central Bank of Lebanon, circulation number 119 and Basic Decision number 9957 of July 21, 2008, relating to the assessment of bank capital adequacy is a witness to such a tight control. It states that Lebanese Banks are required to keep 15 per cent of their deposits with the central bank. The central bank freezes up this on the merit of the lending activity. The rising liquidity levels in the banking system have been the main reason for the surge in the lending activity.

The circular narrates; in addition in compliance to the Minimum Capital Requirement, and Supervisory review Process of the Basel (II) accord, the following risk mitigations which should be established:

Establish a documented mechanism to assess capital adequacy, according to:

1- The nature and size of the bank, and the variety and sophistication of its banking operations and service

2- The type and size of risks to which the bank is exposed.

3- The bank's future plans.

In a resume form, this thesis has accumulated a number of various data from different sources to show and prove that Lebanon is immune to the Subprime lending crises. Accordingly, we have started by indicating the position of the Lebanese banks structure on different dates in order not to be influenced by the latest adjustments that were done by the central bank. For example,

- The consolidated balance sheet of the Lebanese commercial banks reached $121.7 billion of total Assets in June 2010, up by 5.6% from end-2009 and by 17.4% from the same month last year.

- Deposits with the Central Bank increased by 17% year-on-year to reach $37.9 billion.

- Loans to the private sector reached $31.4 billion, up by 13% from end-2009 and by 22% from end-June 2009.

On the other hand, the liabilities' section indicate that the total private sector deposits increased by 16.7% to reach $100.1 billion at end-June 2010 from $85.8 billion at end-June 2009. Over and above, the dollarization rate of deposits fell from 64.5% at end-2009 to 62.5% at end-June 2010. (Central Bank of Lebanon Report, Consolidated Balance Sheet, June 2010)

The analysis of customer deposits by type shows that the increase during the first five months of this year is attributed to Lebanese residents, whose deposits at Lebanese banks rose by $3.6 billion. In 2007, the percentage of deposits denominated in foreign currency was more than 77 per cent, and the total deposits accounted for about $60 billion. Currently the share of total foreign currency deposits is down to 60 per cent.

Another relevant issue that affects the thesis decision is the rate of Interest. Hence, statistics show that Lebanese Banks kept interest rates on deposits in Lebanese Pounds at about 7 percent, while rates elsewhere in the world tumbled.

Below grid shows the average deposit interest rates for BLC Bank (rated among the best 10 Lebanese local banks) in the past two years which tallies with what is offered in the Lebanese market. It reveals Lebanese banks appetite to attract foreign deposits by granting high interest rates in addition to security of a well structured and controlled banking system.

Currency	1 month	3 months	6 months	1 year
LBP	6.50%	6.75%	7.00%	7.25%
USD	4.00%	4.50%	4.75%	5.00%
EUR	1.50%	1.50%	1.60%	1.70%
CHF	0.10%	0.30%	0.35%	0.20%
CAD	0.50%	0.70%	1.20%	1.50%
GBP	1.00%	1.25%	1.40%	1.60%
JPY	0.00%	0.00%	0.00%	0.00%
AUD	3.25%	3.50%	3.75%	3.75%

Figure 5.1: Average deposit interest rates offered to customers for the year 2009 and second half of the year 2010 by BLC bank Lebanon.

Source: Banque Lebanaise pour Le Commerse Internal circular ,June 2010

- **Financial innovation in the United States VS Normal lending of investment banks in Lebanon**

The commercial banking business in the States has changed dramatically over the past 25 years, due largely to technological changes. The various innovations in banking and financial sector in the States are

- CDO (Collateralized Debt Obligations)
- MBS (Mortgaged Backed Securities)
- ARM (Adjustable Rate Mortgages)
- Securitization
- Sub Prime Lending
- ATM (Automated Teller Machines)

- Retail Banking
- Debit & Credit cards
- Free advisory services
- Implementation of standing instructions of customers
- Payments of utility bills
- Fund transfers
- Internet banking
- telephone banking
- Mobile Banking
- Selling insurance products
- Issue of free check books
- Travel check and many more value added services

The primary function of a financial system is to facilitate the allocation and deployment of economic resources, both spatially and across time, in an uncertain environment. All the above mentioned innovations, services and facilities contributed to the financial crisis in the United States.

On the other hand, the Lebanese banking sector has played a major role in fueling the economic growth of Lebanon and ensuring the relative stability of the financial sector as a whole. This was achieved by sustaining a major growth in earnings amid high liquidity levels while operating in a weak domestic environment characterized by political instability and high fiscal deficits. The sector has steadily grown over the years driven by several comparative advantages specific to it, namely:

- Banking secrecy law
- Skillful workforce
- Relatively stable currency and, more importantly,
- Strict regulatory framework and conservative policies set by the Central Bank.

- **The US deregulation of banking industry VS The role of Central Bank**

Another central cause of the U.S. crisis was the making of:

- Too many mortgages to too many borrowers based on flawed credit underwriting standards
- Unrealistic assumptions about the likelihood of repayment and
- Declining home values.

At one time, virtually all loans were 15-30 year fixed rate with level of payments constituting approximately 35% of the borrowers' verifiable income. Unconventional mortgage products appeared in the market place to accommodate a wide range of borrowers. In addition, many loans permitted borrowers to purchase home with little or no money upfront, and increasingly borrowers have extracted their equity gains from their homes.

Throughout the whole course preceding the financial crises, governments and the regulatory framework did not keep pace with:

- Financial innovation such as the increasing importance of the shadow banking system,
- Derivatives and
- Off-balance sheet financing.

On the other hand, "Financial institutions" in the system were not subject to the same regulation as depository banks, allowing them to assume additional debt obligations relative to their financial cushion or capital base.

It is interesting to the thesis content to indicate the volume of the liquidated banks and the outcome of the major prime banks that defaulted during this period due to the Subprime crises. It is worth noting that more than 250 banks were liquidated in 2007-2010 namely the following:

- Bank of America acquired Merrill Lynch

- JP Morgan Chase acquired Bear Stearns
- Bank of America acquired Countrywide Financial
- Wells Fargo acquired Wachovia

The dramatic increase in bank failures over the past few years were a prime witness to the above situation. These bank failures were due to inadequate capital and mounting loan losses primarily from residential mortgages and, more recently, from commercial loans.

In conformity to the causes of the thesis indicated above, these prime banks defaulted in chapter three due to the major items to be noted are:

Subprime lending, Deregulations, Hap Hazard Lending, Securitization, Reckless lending activities, low rate of interest, Financial innovations, Granting of loans to less qualified credit worthy borrowers.

The number of FDIC Problem Banks and financial institutions on the FDIC's watch List rose to 775 at the end of the first quarter 2010.

FDIC Bank Failures			
Year	No. of Failed Banks	Total Assets of Failed Banks	Loss to FDIC's DIF
2007	3	$2,602,500,000	$113,000,000
2008	25	$373,588,780,000	$15,708,200,000
2009	140	$170,867,000,000	$36,432,500,000
2010	109	$80,438,500,000	$19,118,900,000
Total	277	$627,496,780,000	$71,372,600,000

Figure 5.2: FDIC Bank Failures List June 2010

Source: FDIC quarterly report, June 2010

Having stated the above, the Lebanese banks do not fall in the same category of the various activities in the states. However, In Lebanon, the Central Bank was and is still supervising and regulating the banking system very tightly. For example, the central bank requires that borrowers and investors to deposit the equivalent of 40 percent of the value of their approved property loans in a bid to prevent a real estate bubble; hence the

loans given for any real-estate project do not exceed 60 percent of the amount of a project.

Moreover, the prices of assets in general were undervalued until August 2007, but since that date Lebanon has realized an increases in the price of real estate and property shares traded by an approximate increase of 80 to 90 % between the years 2005 till 2010. (Byblos Bank: Report, July 2010).

The Central bank of Lebanon began stressing the idea of investors providing 40 percent of their equity up front on any deals to counter any possible creation of a bubble.

Central Bank of Lebanon Circular number 177 dated 21/7/2008 is a witness to these close controls and measures: "Banks must not extend real estate loans whose values exceed 60% of the desired property or real estate project under construction. Concurrently, banks are prohibited from practicing real estate brokerage or real estate arbitrage activities".

The new measures seek to restrain the market and keep supply and demand in balance. As demand picks up, construction and development are sure to follow, with the possibility of inflated property values. The Central Bank is making it more difficult to invest and develop in order to avoid a massive wave of defaults if supply grows too fast, causing prices to plummet.

The Lebanese Central Bank (BDL) has been operating efficiently for many decades. Lebanese laws granted the Central Bank independence within government, and not from it. Independence is strengthened in practice to minimize all external influence on its decisions. Central Banks, around the world, differ quite remarkably in functions, size, efficiency and status.

- **The US abundant lands Vs scarcity of land in Lebanon**

In the states, there are abandoned lands and places. The real cause of the house increase was not driven by the scarcity of land or by limited supply of apartments in the U.S. market, but rather by financial innovation, fictitious demand and speculation at all

different levels from original lenders, to semi government agencies like Freddie Mac and Fannie May who pooled Home loan portfolios from commercial banks and issued Bonds that were traded thereafter, to Investment banks like Goldman Sachs, Bank Of America, Royal Bank of Scotland and Wells Fargo etc...

On the other hand, Lebanon is a very small country with limited space available for housing. But with demand coming from resident Lebanese, wealthy expatriates and primarily Arabs foreigners, led to confident high prices and many constructions.

"Lebanon is a very small country with limited space available for housing," said Kamal Hamdan, head of the economic division of Beirut's Consultation and Research Institute. With demand coming from resident Lebanese, wealthy expatriates and – primarily Arab – foreigners, he said he is confident high prices are sustainable. (Nash, 2010).

Real estate advisers RAMCO indicated that the Lebanese residential real estate sector is a mature market that has demonstrated solid foundations over the past decade by maintaining a sustained pace of growth. According to RAMCO, prices in Beirut have increased by an annual average rate of 20% to 30% between 2005 and 2008, and that the market has somewhat stabilized since 2009. It noted the market's growth since 2005 despite the disruptive security and political events that shook the country since the start of that year, with demand for and prices of new apartments constantly on the rise. It added that demand would occasionally slow down as a result of political instability or deterioration in security, but without stopping altogether. (Byblos Bank: Report, July 2010).

- **The United States deficiency of control over banks VS tight control over banking activities in Lebanon**

The U.S. Banks are required to hold 15% of all their deposits denominated in foreign currencies (FC) with the Central Bank. These deposits are remunerated on the basis of prevailing market interest rates and according to their maturities. In addition,

banks must maintain at least 10% of their liabilities denominated in foreign currencies as net liquid assets, (Central Bank of Lebanon, Circulation number 119 and Basic Decision No 9957) i.e. investments in Money Market tools such as TB's, CD, NCD etc.....

The Lebanese banking sector on the other hand, has been regulated by the Central Bank. This was witnessed by the below circulars and memos.

Central Bank of Lebanon Circulars number 27 dated 28/6/1996, 171 dated 23/6/2008, 170 dated 23/6/2008, 177 dated 21/7/2008, and Memos 13/2007 in 21/7/2008, 23/2008 in 15/9/2008 and 22/2008 in 15/9/2008 which were extensively elaborated in Chapter 4 Lebanon Case.

- **Predatory lending in the States verses organized and safe lending from commercial banks in Lebanon**

Predatory lending relates to those unprincipled lenders who enter into unsafe lending procedures and use baits to misguide borrowers. In the States, they normally advertised low interest rate loans for home refinancing mean while the interest would be put into an Adjustable Rate Mortgage (ARM) that allowed home owners to make interest payments -only. When housing prices decreased, homeowners in ARMs had little incentive to pay their monthly payments, since their home equity had disappeared. This caused financial condition to deteriorate, ultimately resulting in a huge mess of loan delinquencies.

However in Lebanon the initiatives are intended to preserve stability, both for the individual corporation and for the entire system. Lending has been organized and well controlled from the central bank of Lebanon. Many circulars had been issued to govern the lending activities of banks. As an example loans to related parties (e.g. shareholders, chairman and members of the board of directors, top management and their families) may not exceed 5% of shareholders' equity and needs to be secured. Credits termed 'big risk' (credits exceeding 15% of shareholders' equity) should not exceed eight times a bank shareholders' equity. Moreover, banks can only lend up to 50% of the value of stocks and up to 60% of value of the real estate projects.

- **Securitization in the banking sector in the States VS Standard lending from commercial bank**

An additional change to the mortgage lending world in the United States is central to understanding the current crisis: namely the ever more complicated "securitization" of mortgage assets- a structured finance process in which assets, receivables or financial instruments are acquired, classified into pools and offered as collateral for third-party investment. Investment banks facilitated that demand with a number of instruments namely MBS and CDO which were assigned "safe ratings" by the Credit Rating Agencies such as Moody's , S&P , Fintch. The bundling of sub-prime mortgages into mortgage-backed securities (MBS) or collateralized debt obligations (CDO) for sale to investors is a type of securitization. The usage of these products expanded dramatically in the years leading up to the crisis.

In Lebanon, on the other hand, there exists no means and tools to exercise the securitization, mainly because there isn't enough liquidity by the banks to participate in these international instruments or to create their own derivate market. Hence, the commercial Deposits generated by the banks are mainly used to purchase domestic T Bills and Euro Bonds instead rather than expand into international derivates. However , it should be noted that the balance left in the Commercial banks in Lebanon that are unutilized were used to finance commercial and real estate activities and other forms of Retail Lending.

In Reality, there isn't the suitable domestic banking culture and the expertise to come up with complex financial instruments as in the United States.

- **Sub-prime lending in the United States VS no sub-prime lending in Lebanon**

Through the creation of secondary markets for mortgage loans in the States, banks were able to generate money by originating and servicing loans rather than retaining them on their books. This was a radical change in lending practices and incentives;

lending institutions stopped being concerned about the quality of loans because they didn't keep them and instead they became very concerned with the volume of loans originated and the fees generated. The number of sub-prime loans rose as rising real estate values led to lenders taking more risks.

At the crises peak time in the year 2007, the value of U.S. sub-prime mortgages was estimated at $1.3 trillion as of March 2007. The total value of Housing mortgages as of 2007 was estimated at $2.28 trillion. Subprime portfolio recently in the year 2010 reached about $13 billion which shows the real volume of the crises. (Federal Reserve Statistical Release, Jun., 10 2010).

Upon calculating the consolidated balance sheets of the US banks and comparing them to the total Home loans , the outcome shows (i.e. Subprime / Total Home Loans) equaled 57% which is extremely high for lending portfolios. It is worth mentioning that Subprime mortgage payment delinquency rates remained in the 10-15% range from 1998 to 2006 then began to increase rapidly, rising to 25% by early 2008. (Federal Reserve Statistical Release, Jun., 10 2010).

What added to the confusion is that a Federal Reserve study in 2007 reported that the average difference in mortgage interest rates between Subprime and prime mortgages declined from 2.8 percentage points in 2001 to 1.3 percentage points in 2007. This means that the risk premium required by lenders to offer a Subprime loan declined. This decline occurred even though Subprime borrower and loan characteristics declined overall during the 2001-2006 period, which should have had the opposite effect. Instead, the "decline of the risk premium" led to lenders considering higher-risk borrowers for loans.

In Lebanon, banks do not practice sub-prime lending system and other forms of financial sophistication. The whole banking activity was and is based on standard and pre arranged lending practices to individuals with Credit worthiness borrowing ability is acceptable and revised by the Central bank on continuous basis. Over and above, the

Central Bank has enforced a down payment starting with 20%, favorable DBR not exceeding 33% of borrower's monthly income and an upper ceiling for loans based on well balances LTV's (Loan to value of the Assets).

- **Mortgage Brokers and Underwriters VS standard and well documented Home Loan Lending in Lebanon**

Many delinquent loans arouse because "mortgage brokers" do not lend their own money, there is no direct correlation between loan performance and compensation for them. Brokers also have financial incentive for selling complex ARMs because they earn higher commissions on them.

One study has found that in 2004-2005, mortgage brokers originated 68 percent of all residential loans in the United States, with Subprime and Alt-A loans accounting for over 42 percent of the volume. The Mortgage Bankers Association has claimed that brokers profited from the home loan boom but didn't do enough to determine whether borrowers could repay the loans, leaving lenders and banks with resulting defaults.

"Mortgage underwriters" determine if the risk of lending to a borrower under certain parameters is acceptable. Most of the risks and terms considered by underwriters fall under three categories:

- Credit,
- Capacity and
- Collateral.

In 2007, 40 % of all Subprime loans were generated by "automated underwriting". Automated underwriting meant minimal documentation and much quicker decisions, sometimes as soon as within 30 seconds as opposed to the week it would take for an underwriter to generate a decision. An executive vice-president for Countrywide Home

Loans also noted in 2004 that "previously, every mortgage required a standard set of full documentation."

Lax controls and a willingness to rely on shortcuts led to the approval of buyers that under a less-automated system would not have been approved.

In Lebanon, on the other hand, the home loan lending activity was much more studied following strict underwriting which goes for an average of a month period to approve a Home Loan. Basic strict checks are applied on borrowers like "Central Des Risque" which reveals the customer's debts in all other banks, Black List Check for returned Checks, Juridical records to check for monetary law suits and crime convictions. Income is also well studied in addition to the employment stability of the applicant and his employer's financial position. Down payments are imperative starting with at least 20 to 25 % of house amount. DBR is kept between 30 to 40% as a maximum and LTV's (Loan to Value) of the property should be less than 0.8 at most of the times.

5.2 Key Lessons to be learned from the Banking Industry

- Sub-prime lending is very risky and dangerous and will not serve the issue of Retail Lending. It will rather complicate things and lead to over lending to unqualified borrowers. Therefore, at any time of financial uncertainty sub-prime borrowers had proven to be the first to topple because of their squeezed liquidity and narrow margins of maneuver in their limited low income.

- Complicated securitization of mortgage assets which was practiced in the form of bundling of sub-prime mortgages into mortgage-backed securities (MBS) or collateralized debt obligations (CDO) for sale to investors was quite dangerous. This type of securitization and the usage of these products expanded dramatically in the years leading up to the crisis. These products vary in complexity and the ease with which they can be valued on the books of financial institutions.

- Adjustable rate mortgages (ARMs) have proven to be very risky. As they are offered at relatively low initial (teaser) rate for 2-10 years, and then reset annually with an index. The most common index used is 6-month LIBOR. On the other hand, Interest Only loans (I/O) have initial period where only interest is paid on the outstanding balance at a low initial rate. These kind of financing should be very closely controlled and granted in very small amounts due to the risk nature of borrowers who are applying to these products. Each of these loans resulted in a lower initial payment, allowing borrowers to qualify for 'more' home. For example, the Interest Only Loans might lead approximately to 20% more homes. Also, when ARMs reset, monthly payments will also likely to increase.

- Retain the DBR as it is and be very wary of increasing DBR (or reducing other credit criteria) in an interest rate reducing environment (this will do nothing but attract low income highly indebted people), and certainly don't increase DBR if interest rates are going up. It is required to keep pressure on reducing DBR within our portfolio's

- Interest rate increases causes an increase in refinancing requests causing large burdens on the customers. Therefore, lending to low income earners is very risky as they are very much interest sensitive due to the impact on their monthly installments.

- Banks should watch for LTV's when granting Housing loans. Customers who pay better down payments are proven to be less exposed to risk.

- Credit principles should not be violated at all times. Government regulations should be respected and proper assessments should be given to each lending application in order to avoid future losses.

- Comprehensive studies should be implemented by lenders when the market witnesses unusual increase in the prices of real estate. Therefore when real estate

prices are growing very high, bankers should be aware of their LTV'S loan to value of the real estate property being financed in order to keep a cushion when prices tumble down and end up with homes being financed with loan amounts more than the house's real values

- Home buyers and borrowers should not treat their homes as piggybanks. At the height of the real estate market boom, borrowers should not refinance high-interest credit cards with a low-interest second mortgage on their homes.

- Home buyers can't time the market. When home prices were skyrocketing, many people bought homes they could barely afford -- or not afford at all -- thinking they'd ride the wave of rising equity since the market was on the upswing.

5.3 Summary

As presented in the thesis, Lebanon "Real Estate" and "Housing Market" has been performing differently from the trends of the U.S., Europe and the GCC markets. In time where the international housing markets were deteriorating and witnessing decrease in their values, Lebanon in contrary to the rest has witnessed a boom in the housing market with a strong demand. The thesis had proven that Lebanon is a different case due to the many different reasons that govern Lebanon. Many researchers discuss that the rise in prices will be followed by a steady flat momentum. The future will be the witness to the upcoming situation.

The banking, retail and wholesale trade, and telecommunications sectors were the main drivers of economic growth in Lebanon during the 1998-2009 periods. Also, the private sector was the main engine of growth during the covered period. Retail and wholesale trade and construction drove growth in 2007-09, reflecting the expansion in consumption, tourism and real-estate activity.

The sector displayed its resilience to global financial shocks and domestic political instability, and proved it can finance the private sector while supporting the public sector's needs, at a time when governments around the world have been forced to bail out their banking systems.

The Lebanese banking sector has steadily grown over the years relative to the size of the domestic economy remained the backbone of the Lebanese economy, having amassed assets in excess of 327% of Lebanon's GDP amidst ongoing deposit inflows equivalent to 274% of GDP, among the highest such ratios in the world. This was driven by several comparative advantages namely, a banking secrecy law, a skilful workforce, a relatively stable currency, high yields on local and foreign currency compared to peer countries as well as the strict regulatory framework and conservative policies set by the Central Bank that shielded Lebanese Banks from exposure to toxic assets and structured products. Over the past decade, the sector displayed its resilience to global financial shocks and domestic political instability, and proved it can finance the private sector while supporting the public sector's needs, at a time when governments around the world have been forced to bail out their banking systems.

The Lebanese banking landscape has changed significantly, moving from a highly competitive and fragmented environment to an asset consolidation environment and witnessed the expansion of Lebanese Banks on the regional scene.

Assets of commercial banks continued to increase as per the quarterly business report published by Audi Bank; an increase from $93.8 Billion in 2009 to $121.70 Billion in June 2010. At the same time Capital Base had risen to $8.95 Billion as at June 2010, rising by 12.6% since Dec.09. Also, Deposits grew from $77.8 Billion in 2009 to $100.01 billion in June 2010, up by 4.5% from end-2009. The weekly June 2010, business monitor of Byblos bank published that Loans have grown to $31.7 Billion in June 2010 up by 11.8% from Dec. 2009. Average Lending Rates had dropped on the Lebanese currency from 9.76% in the year 2009 to 8.37% as at end of June 2010. On the U.S. Dollar side, Average Lending Rates decreased from 7.24% in year 2009 to 7.03% as of June 2010.

The above situation proves that the deposits in the Lebanese banks are increasing on a continuous basis despite the decrease in interest rates for the USD and the LBP currency. At the same time Lending to individuals is growing due to the comfort commercial banks are experiencing in this sector. All the above figures prove the trust in the Lebanese economy in general and the Banking Sector in particular.

Moreover, the Dollarization rate of deposits fell to 63% in August, its lowest level since 2000, from 69.6% in Dec. 2008 because depositors continued to switch their savings to the local currency on higher yields.

Also, Lebanese banking sector has demonstrated a remarkable growth over the years despite the persistent political instability and the global financial crisis that surged in 2008, proving its resilience to external turmoil. Initially, customer deposits were bolstered by the inflow of wealth following the civil war and by the ample petrodollar liquidity in the region that flew into the sector in the aftermath of the September 2001 events. More recently, deposits growth was triggered by the Lebanese banking sector emerging as a safe haven for depositors in light of the prudent policies set by the Central bank and the attractive interest rates on deposits compared to regional peers.

The Lebanese banking sector has regular growth in profits in recent years; profitability was favored by an increasing contribution of regional entities to the sector's income, a recovery in lending activity and improving cost efficiency.

Nevertheless, the Lebanese banks are faced with two key risks: their high exposure to the sovereign debt in light of the fragile political environment as well as the highly uncertain political and security environment in which they operate. So, the immunity of the Lebanese banking sector is correlated to the consolidation of the recent domestic achievements; they include the economic growth recovery and the decline in government debt ratios.

Despite all the above positive indicators regarding the Banking sector in general the most important in our analysis is the percentage exposure of Lebanese banks in Real

Estate Lending to the total lending. Total Loans to the private sector as at Dec.09 reported $31.7 Billion of which $2.25 Billion was loaned to Real Estate and Housing. The percentage of Real estate lending exposure is quite low at 7 % of their lending budgets to the private sector and constitute a very limited exposure to the banking system in case real prices collapsed or defaults in the Housing Loans occurred which h is not likely to happen (Central Bank of Lebanon, Consolidated Balance Sheet June 2010).

According to figures released by the Directorate of Real Estate in mid-June 2010, there was a 41 per cent increase in property sales in the first quarter of the year 2010 compared to the opening three months of 2009. In total, the 22,000 property transactions conducted throughout the quarter had a value of $2.1 billion, a new record.

Lebanon's property sector flourished in the first quarter of 2010, benefiting from strong economic growth, continued large remittances from Lebanese working abroad, large inflows of foreign capital, population growth and robust tourism. Growth in Lebanon's real-estate market, which has helped to spur economic growth, is unlikely to create a housing bubble, the country's central bank Vice Governor Saad Andary said: "Out of each 100 dollars spent on property acquisition, not more than 16 to 18 dollars are financed by banks," Andary said in an interview in Istanbul today. "The rest is hard cash, mainly from Lebanese from abroad. We have no fear from a housing bubble." (Bank Audi: Weekly Monitor Report, July 2010).

Central Bank Governor Riad Salameh told a monthly meeting of the Lebanese Banking Association that the banks' housing loans do not pose any risk to the country's monetary stability. According to Salameh, the banks' housing loans are less than 3 percent of their budgets. He added that all of the banks' real estate loans do not exceed 6 or 7 percent of their budgets. (Kenner, 2008)

Therefore, as demonstrated above, prudential standards for housing and real estate lending is conservative and bank exposure to these sectors is limited and does not constitute any major threat to commercial banks financial positions being a limited part of the overall lending activity.

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Appendix A: Global Financial Crisis- A Timeline 2007-2009

GLOBAL FINANCIAL CRISIS - A TIMELINE (2007-2009)

Date	Event
7 February 2007	HSBC announces losses linked to U.S. sub prime mortgages.
17 May 2007	Federal Reserve Chairman Ben Bernanke said growing number of mortgage defaults will not seriously harm the U.S. economy.
17 August 2007	The Fed cuts the rate at which it lends to banks by half of a percentage point to 5.75%, warning the credit crunch could be a risk to economic growth.
5 September 2007	German corporate lender IKB announces a $1bn loss on investments linked to the US sub-prime market.
4 September 2007	The rate at which banks lend to each other rises to its highest level since December 1998. The so-called Libor rate is 6.7975%, way above the Bank of England's 5.75% base rate; banks either worry whether other banks will survive, or urgently need the money themselves.
18 September 2007	The US Federal Reserve cuts its main interest rate by half a percentage point to 4.75%.
1 October 2007	Swiss bank UBS is the world's first top-flight bank to announce losses $3.4bn - from sub-prime related investments. The chairman and chief executive of the bank step down. Later, banking giant Citigroup unveils a sub-prime related loss of $3.1bn. A fortnight on Citigroup is forced to write down a further $5.9bn. Within six months, its stated losses amount to $40bn.
30 October 2007	Merrill Lynch's chief resigns after the investment bank unveils a $7.9bn exposure to bad debt.
9 January 2008	The World Bank predicts that global economic growth will slow in 2008, as the credit crunch

	hits the richest nations.
21 January 2008	Global stock markets, including London's FTSE 100 index, suffer their biggest falls since 11 September 2001.
31 January 2008	A major bond insurer MBIA, announces a loss of $2.3bn – its biggest to date for a three-month period -blaming its exposure to the US sub-prime mortgage crisis.
10 February 2008	Leaders from the G7 group of industrialized nations say worldwide losses stemming from the collapse of the US sub-prime mortgage market could reach $400bn.
7 March 2008	In its biggest intervention yet, the Federal Reserve makes $200bn of funds available to banks and other institutions to try to improve liquidity in the markets.
8 April 2008	International Monetary Fund (IMF), which oversees the global economy, warns that potential losses from the credit crunch could reach $1 trillion and may be even higher. It says the effects are spreading from sub-prime mortgage assets to other sectors, such as commercial property, consumer credit, and company debt.
4 August 2008	Global banking giant HSBC warned that conditions in financial markets are at their toughest "for several decades" after suffering a 28% fall in half-year profits. Of Europe's top banks, HSBC has among the heaviest exposure to the troubled US housing and credit markets.
15 September 2008	Bank of America agrees to a $50 billion rescue package for Merril Lynch. Lehman files for bankruptcy and thousands of its employees are told it's all over. This is the largest bankruptcy filing in the history of the United States at $ 639 billion.
19 September 2008	Asia starts to recover with the Nikkei closing up 431 points at 11,920. Russian stock markets bounce back after the government pledges 500

	billion roubles to fight the crisis. The British government increases its guarantee for British banks deposits to £50,000 and the Bank of England announced it will auction £ 10 billion. On Wall Street, the Dow Jones Industrial closes at 11,388.44 points, up 368.75, despite employment data being worse than expected. Bush Administration announces Bailout Plan to Confront Crisis. Congress is asked to give the administration new powers to execute a plan that could cost taxpayers billions to buy toxic debt and bad mortgages.
2 October 2008	The U.S. Senate approves the bailout. Congress passes the $700 billion asset relief bailout. European leaders, lead by French president Nicolas Sarkozy, consider their own bailout, which would cost € 300 billion.
8 October 2008:	The IMF announces emergency plans to bailout governments affected by the financial crisis, after warning that no country would be immune from the ripple effects of the credit crunch. The Dow falls to a five-year low, ending the day at 8,579 points. The FTSE ends at 4,313.8 its lowest level since August 13, 2004.
8 November 2008	China announces a two-year $ 586 billion stimulus package to help boost the economy by investing in infrastructure and social projects and by cutting corporate taxes. Economic growth has slowed in China with sharp drops in property and stock values. The money from the stimulus package will be spent on upgrading infrastructure, particularly roads, railways, airports and the power grids throughout the country and raise rural incomes via land reform. Also spending will be made on social welfare projects such as affordable housing and environmental protection. Some Chinese factories engaged in low-end export

	manufacturing have gone out of business.
15 November 2008	International Summit in Washington to reinvent the international financial system. Leaders agreed to cooperate with respect to the global financial crisis and issued a statement regarding immediate and medium term goals and actions considered necessary to support and reform the international economy.
25 November 2008	The International Monetary Fund (IMF) approves a $7.6bn (£5.1bn) loan for Pakistan to shore up the country's economy. Pakistan needs the money in order to avoid defaulting on international debt.
12 December 2008	A $14bn (£9.4bn) bail-out deal for the US car industry has failed to get Senate support, raising fears of job cuts and a possible industry collapse.
15 January 2009	Asian Markets Fall Sharply: The Nikkei 225 index in Tokyo shed 4.9 per cent. By midafternoon the Hang Seng in Hong Kong was down 5 per cent the benchmark Kospi in South Korea 6 per cent. The key indexes in Singapore and Taiwan were 3.2 and 4.4 per cent lower.
22 January 2009	Microsoft has said it will cut up to 5,000 jobs over the next 18 months, including 1,400 immediately.
27 January 2009	Chancellor Angela Merkel's cabinet approved a €50bn (£46.7bn) stimulus package today, the biggest programme in Europe, to tackle overcome the country's deepest economic crisis since the second world war.
29 January 2009	President Barack Obama took the troubled Wall Street banks to task yesterday for paying out billions of dollars in bonuses to staff, accusing them of displaying "the height of irresponsibility" and of letting down the American people.
9 March 2009	The financial crisis wiped $50 trillion (£35tn) off the value of financial assets last year, the Asian

	Development Bank (ADB) said.
11 March 2009	Chinese exports plunged by more than a quarter in February from a year ago as the world's third-largest economy was hit by a drop in demand for its goods.
13 March 2009	The White House has sought to assure China that its $1 trillion (£0.7tn) in investments in the United States is safe despite the economic downturn.
14 March 2009	Finance ministers from the G20 group of rich and emerging nations have pledged to make a "sustained effort" to pull the world economy out of recession.
18 March 2009	World Bank has cut its prediction for China's economic growth in 2009 from 7.5% to 6.5%, saying it could not "escape the impact of global weakness".
25 March 2009	Barack Obama has told Americans he sees signs of economic recovery, but urged them to be patient and look beyond their "short-term interests".
31 March 2009	Germany's unemployment rate rose to 8.6% in March as the global economic downturn continued to tighten its grip on Europe's largest economy.
30 April 2009	Unemployment across the 27 EU member states reached 20 million in March 2009.
7 May 2009	President Barack Obama has said he aims to cut $17bn (£11bn) from next year's US government budget, saying he had found examples of "stunning" waste.
24 Sep 2009	Friends of Democratic Pakistan forum held its first Summit in New York under the co-chairmanship of President Barack Obama, President Asif Ali Zardari, and Prime Minister Gordon Brown. Also attending were twelve Heads of Government and senior representatives of nine countries and five multilateral institutions.

17 December 2009	American weekly news magazine, *Time*, has named Chairman of the U.S. Federal Reserve, Ben Bernanke as man of the year 2009. *Time* magazine's rationale for picking Bernanke: "The main reason Ben Shalom Bernanke is *Time*'s Person of the Year for 2009 is that he is the most important player guiding the world's most important economy. His creative leadership helped ensure that 2009 was a period of weak recovery rather than catastrophic depression, and he still wields unrivalled power over our money, our jobs, our savings and our national future. The decisions he has made, and those he has yet to make, will shape the path of our prosperity, the direction of our politics and our relationship to the world."

Source: Mauro F. Guilen, "The Global Economic & Financial Crisis: A Timeline", *The Lauder Institute*, University of Pennsylvania, May 15, 2009,