Universidade de Aveiro Departamento de Economia, Gestão e Engenharia Industrial
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JOSÉ ALEXANDRE DE MATOS CORREIA

COMPARAÇÃO ENTRE A CRISE ATUAL E A GRANDE DEPRESSÃO DE 1929

COMPARISON BETWEEN THE CURRENT CRISIS AND THE GREAT DEPRESSION OF 1929

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Dissertação apresentada à Universidade de Aveiro para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Economia, realizada sob a orientação científica do Doutor Joaquim da Costa Leite, Professor Associado com Agregação do Departamento de Economia, Gestão e Engenharia Industrial da Universidade de Aveiro

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Aos meus pais e à minha família por depositarem em mim toda a sua confiança e por nunca deixarem de acreditar no meu sucesso.

palavras-chave

Grande depressão, Grande Recessão, Crise Subprime, Padrão Ouro, Euro, Mercado Laboral, Bolhas, Mercado Imobiliário, Sistema Bancário, Mercados Monetários, Mercados Financeiros, Consumo.

resumo

É evidente que a crise financeira atual se parece com a Grande Depressão. Esta dissertação providencia uma comparação entra ambas as crises. Ainda nesta dissertação vão ser explicados os eventos que inicialmente a deflagraram bem como a explicação de como é que uma economia, com a expansão incrível como a Americana, pode entrar em recessão em 1929, e sofrer agora dos mesmos problemas. A falta de restrições tanto antes como agora causaram um "boom" de crédito que afetou o mercado imobiliário e o mercado bolsista criando assim uma bolha. Por último esta tese compara as diferenças entre os políticos de outrora e os atuais, ficando uma pergunta por responder até hoje: Será que os políticos atuais aprenderam a lição dos seus antecessores?

keywords

Great Depression, Great Recession, Subprime Crises, Gold Standard, Euro, Labor Market Bubbles, Real Estate, Banking System, Money Markets, Financial Markets, Shadow Banking System, Consumption.

abstract

It is a fact that the current world crisis resembles the Great Depression. This thesis provides a comparison between both crises. The events that originally deflagrated them will be explained, as well as how does an economy with an incredibly expansion such as the US' can fall in to a recession in 1929, and suffers now from the same problems. The lack of restrictions then and now caused a credit boom that affected the real estate market, and the stock market creating a bubble. And finally this thesis will compare the differences between the policy makers of then and now, and will answer to the question that still remains today which is: How well did policy makers have learned their lesson from their ancestors past mistakes?

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Acronyms

AAA	-Agricultural Adjustment Administration
ABCP	-Asset-backed Commercial Paper
ABS	-Asset Backed Securities
AIG	-American International Group
ARM’s	-Adjustable rate Mortages
BNP Paribas	-French Global Bank – Banque National de Paris
CDO’s	-Collateralized Debt Obligation
CDS	-Credit Default Swap
CLO’s	-Collateralized Loan Obligation
FDI	-Foreign Direct Investment
FDIC	-Federal Deposit Insurance Corporation
Fed	-Federal Reserve
FMR’s	-Fixed Rate Mortgages
G20	-Group of Twenty Leaders, Finance Ministers and Central Bank Governors
GDP	-Real Growth Domestic Product
GSE’s	-Government-sponsored Enterprises
HEL	-Home Equity Loan
HELOC	-Home Equity of Credit
IMF	-International Monetary Fund
LVT	-Loan-to Value
MBS	-Mortgage Backed Securities
MIT	-Massachusetts Institute of Technology
NRA	-National Recovery Administration
OECD	-Organization for Economic Co-operation and Development
PTI	-Payment-to-income
RFC	-Reconstruction Finance Corporation
SIV’s	-Structured Investment Vehicles
TAF	-Term Auction Facility
TARP	-Troubled Asset Relief Program
US	-United States
USD	-United States Dollar
WPA	-Work Projects Administration
WTO	-World Trade Organization

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CHAPTER I

1 Introduction

Every day, people are bombarded by the media with news about the actual conjuncture of the World, reminding them that we are living in a crisis. Some economists have compared it with “the mother of all crisis”, The Great Depression. The Great Depression has been the longest, deepest, broadest and most severe depression the world has ever seen. The Great Depression could be the most studied phenomenon of the economic world and if there are voices that compare the current crisis with the Great Depression, it means that this is a phenomenon that will need some attention by the economic scholars.

There are several similarities between these two crises that cannot be neglected.

The Great Depression started at a time of great development where the technological advances before The Great Depression were simply staggering. There were booms in almost every US (United States) market. No one would have thought that, in the 1920’s, a depression was lurking around the corner, and that its magnitude was simply impossible for the population to comprehend.

The epicenter of The Great Depression was, with no doubt, in the US but it soon spread to the rest of the World. The decade between 1929 and 1939 was a test for the worldwide population on how things could get increasingly difficult in a short period of time. In these 10 years the US has experienced, from its upper to its lowest point, several falls: 50% in its industrial production, 30% in its Real GDP (Growth Domestic Product) and 33% in its wholesale price. In 1933 unemployment reached its peak of 25%, and it maintained above 15% throughout The Great Depression (Kraner, 2010).

When comparing the two crises there is a similarity that sticks to the eye. Both of them were preceded by years of great development and great booms which eventually originated a bust. The 1920’s decade, also called the Roaring twenties, was characterized by its easy credit, housing boom, and excessive leverage while the current recession, also called The Great Recession, is characterized by the subprime bubble in the early 2000’s (Grossman & Meissner, 2010).

The comparison between the data of 1929 and the data of 2007 shows that the beginning of the current recession was not that severe as it did not hit industrial production as hard as it was thought, and even the stock market crash was not affected as much as during the Great Depression. There are other items that suggest that the Great Recession is a little more serious. For example, the unemployment, that increased up to 10%, according to The New

York Times of November 6 of 2009, is still far from the 25% in its peak during the Great Depression (Schlenkhoff, 2009).

Although the numbers were far greater and alarming in The Great Depression, one thing is certain, the problems the world is facing today are very similar to the ones of 1929. One thing still remains uncertain though… Have policymakers learned anything from the past?

At least today the Fed (Federal Reserve) is governed by a great scholar of the Great Depression, Bernanke who learned from it and is taking actions to solve it before it is too late. We cannot tell the same from the policymakers of The Great Depression. But is it enough?

1.1 Objectives and Aims

- Identification and explanation of the Causes that led to the Great Depression;
- Identification and explanation of the Causes that led to the Great Recession/Subprime crisis;
- Explanation on how The Great Depression went global;
- Explanation on how The Great Recession/Subprime crisis went global;
- Understanding of the Great Depression's lessons;
- Comparison between both crises;
- The role of fixed exchange rates during the two crises.

1.2 Methodology and structure of the Thesis

This thesis will discuss theory and practice, and an historical framework will be adopted. The method used will be descriptive and comparative. For a better understanding this thesis was divided by chapters as follows:

- In the 2nd Chapter the precedents of the Great Depression will be addressed as well as the causes of the crisis as well as its development from 1929 to 1930. The main areas that led to the Great Depression will be discussed in this chapter. These areas include the Money and Financial Markets, Labor Markets, Spending, Stock Market Crash, Real Estate, Banking System and the Gold Standard. In the last 4

subchapters, opinions from some of the greatest economists of our time will be discussed, about the end of The Great Depression, the lessons learned and if the lessons learned could avoid a similar crisis. The final subchapter contains a table with a summary of all these economists opinion over the Great Depression;

- The 3rd chapter contains an overview of the economy prior to The Great Recession, and the causes that ultimately led to the financial crisis. The main causes discussed in this chapter are: Real Estate, Spending, Financial Institutions, Banking System, the role of the Fed and International Labor Shocks;
- The 4th Chapter consists of a comparison between the two crises, the lessons learned from policy makers and how they are reacting to the problems that emerged. The last subchapter addresses the problems of the fixed exchange rate systems before and now;
- The 5th Chapter is composed by the conclusions of the thesis

CHAPTER II

2 Great Depression

To understand the nature and the context of the Great Depression, there are some factors that need to be explained. These factors are what differentiate it from a mild recession like the one in 1921 to the Great Depression.

The decade of 1920's was the basis for what was about to happen.

Before the Keynesian theory, classical economists believed that the markets would always follow an equilibrium path and that all the sellers would find their buyers. They consider deflation as a salutary force that permitted the reduction of relative wages, allowing entrepreneurs to employ an increased volume of laborers. Inflation was seen as an evil that should be purged from the economic system. Classical economists believed that if the inflation was to rise sharply, the risk of holding currency would increase dramatically which in turn could lead the currency to collapse, so inflation was to be avoided at all costs.

According to the classic theory the government needed only little intervention, save for the most minimal legal standards and property rights. The Government should only have 3 main functions: protection against foreign invaders, citizens' protection from wrongs committed against them by other citizens, and building and maintaining public institutions and public works that the private sector could not profitably provide. The government should not interfere in the market since it was thought that the market would be automatically adjusted according to Adam Smith theory of the invisible hand.

This framework only impeded the control of prices, and competition.

The 1920's was a decade of remarkable innovation, technological advance, and economic growth. It was the decade of the electricity, the telephone, indoor plumbing, and mass production of automobiles (Gwartney, Stroup, Sobel & Macpherson, 2010), and so it has become known has the "roaring twenties".

The standard of living was increasing mainly due to the increase in productivity and in the supply of goods, which in turn was lowering the costs and prices. This tendency was impeded by the monetary inflation which served to stabilize prices. This kind of stabilization was preventing an even higher standard of living and generated the boom and the depression of the business cycle (Rothbard, 2000).

The stock market was also affected by the phenomenon of great growth and development of the 1920's decade and so the prices of stock shares rose sharply. According to Romer, the stock prices increased more than four times from 1921 to its peak in 1929. The household market was also increasing at a very high rate and in the mid 1920's the household market had an excess of

supply. This tendency only changed by the end of the decade when there was a huge drop in prices of houses that were being built (Parker, 2007).

The US banking system was on the forefront of banking innovation, it created "tools" to expand even more the growth of that decade. Credit was easy to obtain and at low rates, and because banks needed few capital and reserve requirements there was an increase of the money supply. US' banking system had a very particular modus operandi comparing to other countries. It was composed by small, independent banks. There was also another major difference: the banks were regulated by different supervisors, which meant that there were different capital requirements, reserve requirements and branching laws for each type of bank.

The Labor Market was also suffering enormous changes during this time. Before the 1920's the labor market was characterized by long working hours with low productivity, but during that period it started to change to a labor market with fewer working hours and increased productivity.

The economy was at its best in the 1920's decade. No one thought a depression could be lurking around the corner, and much less with this extent, severity and duration.

2.1 Money and Financial Markets

For a better acknowledgement of what was about to happen to Money and Financial Markets, the pre-World War I markets need to be discussed.

Before the 1st World War, Britain was the US main lending country. When World War I began US was starting to reduce its international debt.

According to Temin (1994) the War led Britain to stop all exports of capital, and started importing capital mainly from US to fuel the fires of war. The US was Britain's main debtor. Its debts reached at least 3.5 billion dollars before the War, but during the War the roles reversed and the US passed to a creditor position of more than 7 billion dollars.

The War also led to the halt of the gold standard convertibility, and although in 1920 there were several countries that wanted to reinstate the gold standard, the feat was difficult to accomplish due to the lack of gold availability to satisfy world money demands without deflation (Bernanke, 2000).

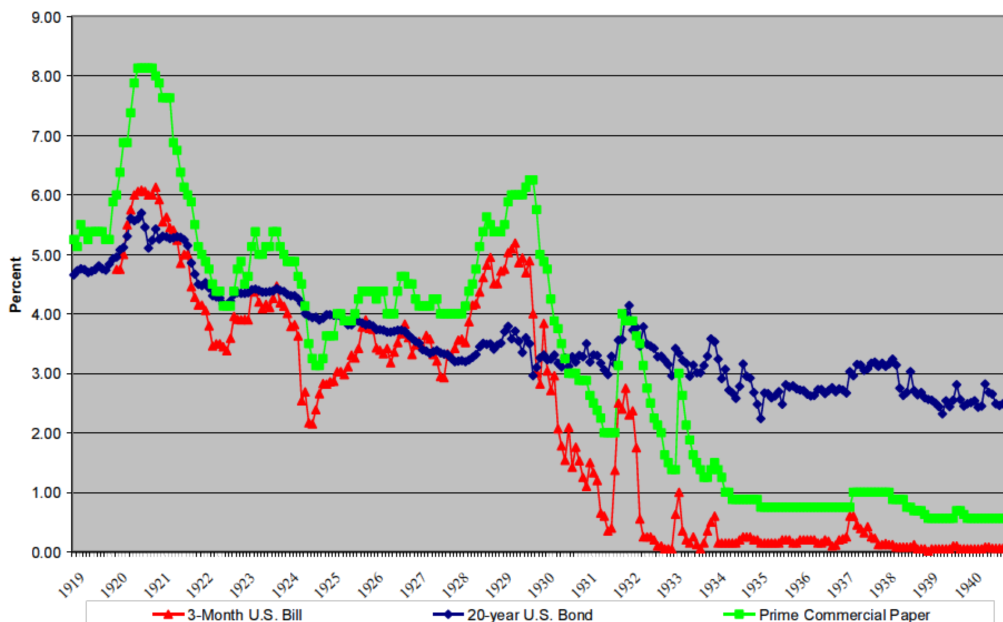
To quickly restore the gold standard, in 1922, the Economic and Monetary Conference at Genoa suggested the adoption of a gold exchange standard, in which convertible foreign exchange reserves (principally dollars and pounds), as well as gold, would be used to back up national money supplies. This measure allowed to "economize" gold. (Lindert, 1969; Eichengreen, 1995).

> Most of the countries managed to return to the gold standard in the 1920's decade, although there was a slight problem. The currencies returned at the same parity they had before the War. The pound was overvalued and the franc returned at an undervalued parity (Bernanke, 2000, pp.125).

Later, in this thesis this point will be addressed showing the effects of the gold outflows of Britain and gold inflows of both US and France due to the different parities.

In the financial markets there were also changes that led to a financial crisis. The financial crisis started in 1929, when the Fed was trying to prevent the speculative bubble on the stock market. To prevent the speculative bubble on the stock market the Fed chose to increase interest rates, that way it would discourage speculators on contracting loans to "play" on the stock market. It's true that the Fed managed to do what they wanted (the bubble bursted), what they didn't expect was that the rise in interest rates would affect the rest of the economy that were dependent on loans. The increase of interest rates led to a decrease of the velocity and thus the decrease in money supply. The US was at hand with a severe money contraction (Temin, 1994). The graph bellow gives us an overall view on the money contraction after 1929.

Illustration 1: Yields on 3-month U.S. Treasury Bills, 20-Year U.S. Government Bonds, and 4-6 month commercial paper, monthly, 1919-1940



Source: Retrieved from "Money and Interest Rates in The United States During the Great Depression" by P. Basile, J. Landon-Lane and H. Rockoff, 2010, *National Bureau of Economic Research*, [Working Paper Nº 16204], pp. 28. Copyright 2010 by Peter F. Basile, John Landon-Lane, and Hugh Rockoff.

2.2 Labor Market

According to Bernanke (2000), the Labor market prior to the 1920's decade was characterized by long working hours, low productivity and low wages. These characteristics can be explained if we know that prior 1920's Labor Market consisted mainly in Agriculture.

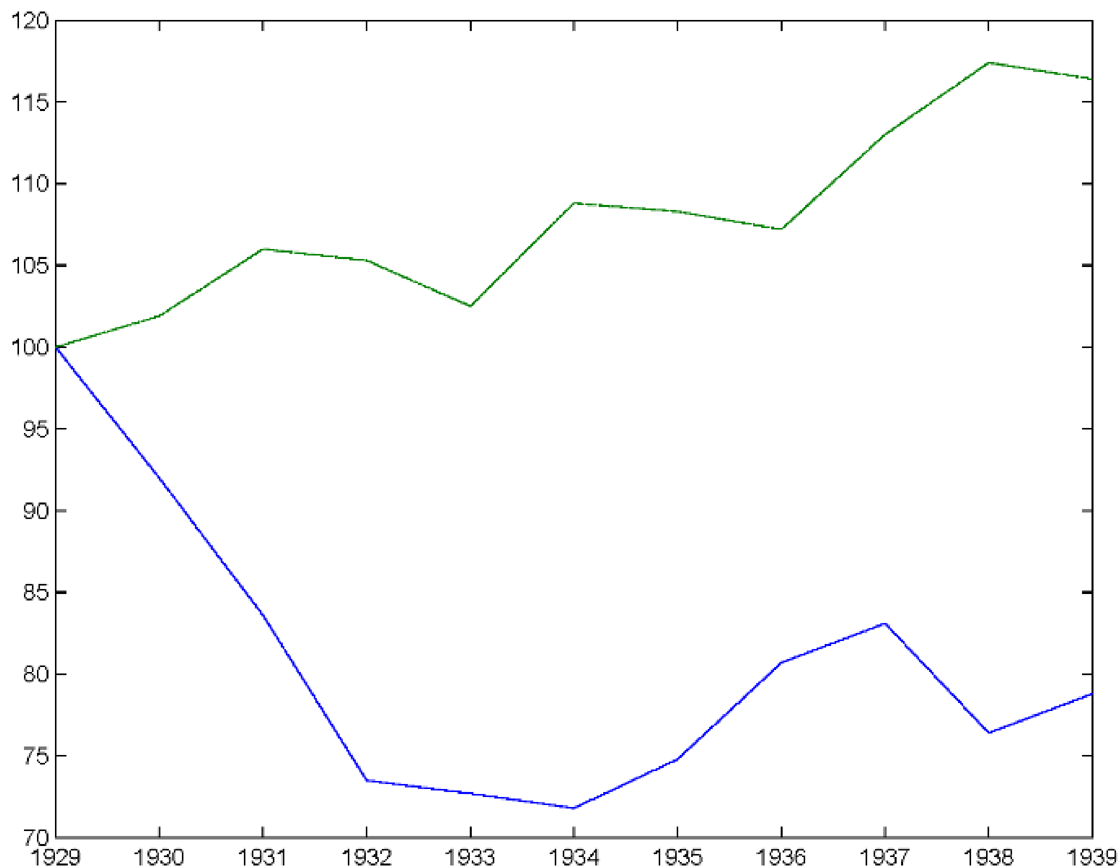
Before 1920's the Agricultural Sector was thriving since the Europeans were in dire need of food due to World War I.

During World War I, Europe was in need of food and fiber to feed the militaries. When the War was over, Europe started producing these products. The US and other Europe's food suppliers that expanded their productions to meet the demands were now facing an excessive output. Eventually, the prices fell and the farmers were facing debts they couldn't afford. They expanded and contracted loans expecting that the high prices would continue, but now with the decrease of prices that followed they couldn't afford those loans and there were a great number of insolvencies among the sector. This led to a restructure of the Agricultural sector in the early 1920's, with the low prices, the wages were falling, the working hours were diminishing, and so did the output (Temin, 1994).

The 1920's work organization started to change (due to the pressure of the public opinion, and Unions), the long working hours were reduced, there was a substantial increase in productivity, and the wages were rising. With all these changes in the 1920's decade, wages started to be less flexible (O'Brien, 1989).

Despite the raise in wages, that did not meant the real weekly wages were higher. Although the new wages were higher the working hours were lower, so this would mean that in real terms the gains that could be used for consumption were almost the same. In the graph bellow there is evidence that the hours worked per adult dropped abruptly after 1929, but there was only a shy increase of the detrended Mfg Wages.

Illustration 2: Total Hours Worked per Adult (blue), Detrended Mfg Wages (green), 1929=100



Source: Adapted from "New Deal Policies and the Persistence of the Great Depression: A General Equilibrium Analysis" by H. Cole and L. Ohanian, 2004, *Journal of Political Economy*, 112 (4). Copyright 2004 by the University of Chicago Press. Retrieved from Yglesias (2011).

In 1929, the output, and output prices were starting to decline due to the Depression, the lack of demand, and lack of money supply. While the prices of output got lower, the wages were rising in terms of real wages due to its rigidity. That only led to a decrease of labor demand (Bernanke, 2000).

According to Ohanian (2009) the main responsible for this incredible change in the labor market was Hoover himself. Employment was a serious factor for the government, so Hoover tried to correct the market the best way he could. Hoover believed that if the wages were kept high and there was job sharing instead of lay-offs the economy could recover, so his policies included increasing salaries and encouraged job-sharing. What Hoover didn't predict was that his policies would create deflation. Due to the inflation-adjusted value real wages rose, and productivity was decreasing, so companies were in no position to accommodate such increase in wages. According to the same author, the companies tried to maintain as long as possible the wages freeze, so instead of

lowering wages they preferred to reduce the workweek and to lay-off workers. That led to disaster since the Aggregate Demand dropped substantially.

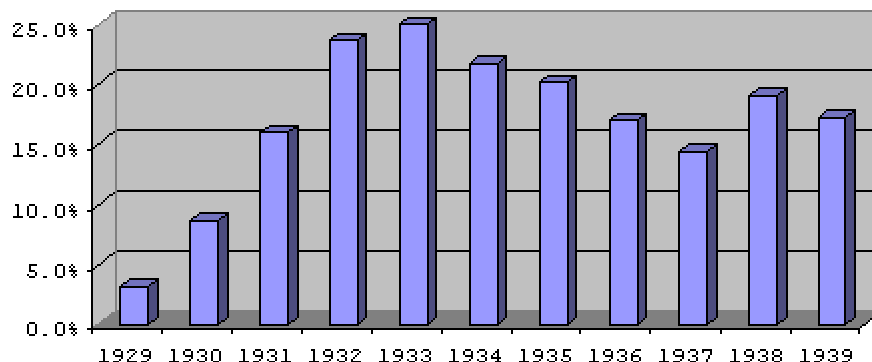
There was a huge difference between how Hoover's policies affected the Agricultural Sector and the Manufacturing Sector. The Agricultural Sector was still in a phase of restructuring due to the crisis of excess of supply after the World War I. The Agricultural Sector was readjusting from all their excesses and so Hoover's policies didn't apply to them as much as for the Manufacturing sector. The Agricultural sector was completely independent of what was being set for the manufacturing sector.

For the Manufacturing Sector, Hoover's intentions drove the industrial wages to increase, and employment sharply depressed to values that were never seen before. Hoover's policies led the overall gross national product, to decrease. As described in Anonymous (2009) Ohanian believes his policy was the most important factor that led in the precipitation of the Great Depression.

In the mid-1933 the nominal wages were on the rise again, even faster than prices. This was due to the legislative programs which thought the solution was to raise wages. The output was recovering well, but the working hours were recovering slowly (Bernanke, 2000).

From 1929 to mid-1933 Industrial Production declined by 37 percent, prices by 33 percent, and real GDP by 30 percent, nominal GDP fell by almost 50 percent. Unemployment reached a peak of 25 percent and it stayed above 15 percent for the rest of the 1930's decade (Temin, 1994). The graph bellow shows how unemployment reached its peak of 25% in 1933 and continued over 15% until 1937 but in the following year it increased again over the 15% barrier.

Illustration 3: Unemployment in the Great Depression



Source: Retrieved from "Graph: Unemployment in the Great Depression", by Awesome stories (n.d.)

In the beginning of the Great Depression there was no social security whatsoever and when there was a decline in spending, due to the lack of demand, the employment suffered. As the lack of demand increased unemployment, the lack of social security reduced even more the demand, and a vicious circle started (Leite, 2005).

2.3 Decline in Spending

Many economists believe the cause of the Great Depression was the fall in Aggregate Demand. In the description of the Labor Markets, there is evidence of the shock that slowed down the aggregate demand. The fall in output and the fall in prices that started in the 1920's decade is an irrefutable fact.

An Aggregate demand shock is generated when in the short run the economy moves away from full employment level of output but prices remain unchanged. The decline in Aggregate Demand causes a recession or, in more severe cases, a depression. Meanwhile in the long term the economy will try to adjust to a new point of equilibrium, the enterprises will want to produce their goods at their normal capacity and the increase in inventories will cause the prices to fall. The output will be at its full-employment level but the price level will fall (Kraner, 2010).

2.4 Stock Market Crash 1929

As it was said before the 1920's was a decade of great innovation, technological advance and economic growth. The stock market was accompanying the evolution.

The factors that led to the stock market crash of 1929 started in the 1920's. In the 1920's the ease on getting loans and low interest rates was leading the stock market to raise without precedents, people thought the tendency of the stock market was to always go up. Even people with only a small amount of money to invest were attracted to the stock market and its easy way to gain money. When stock markets fell, people thought it was a temporary setback and looked at it like an opportunity to buy stocks at a lower price (Granville, 1995).

People from very different backgrounds were attracted to the stock market. The euphoric run-up of stock prices was the recipe to disaster leading to the biggest market panic that the world has seen (Bordo & James, 2009).

According to Temin (1994) in 1928 and 1929, with the intention of stopping the stock market bubble that was being formed, the Fed adopted contractionary monetary policies. The Fed believed they could restrict the credit only for the stock market but they were dead wrong.

From their lowest point in 1921 to their peak in 1929 the stock prices increased more than four times their value. The New York stock market was living years of spectacular rises in stock prices, the Dow Jones industrial average in the early 1928 was at a low of 191, by December it reached 300, and by September of 1929 it reached 381, it doubled in two years (Romer, 2003; Kindleberger 1986).

Illustration 4: Dow Jones Industrial Average: 1925-1955

Source: Retrieved from “Dow Jones Industrial Average from 1925 to 1955” by J. Smithson, 2009, September 17 [Web log post]

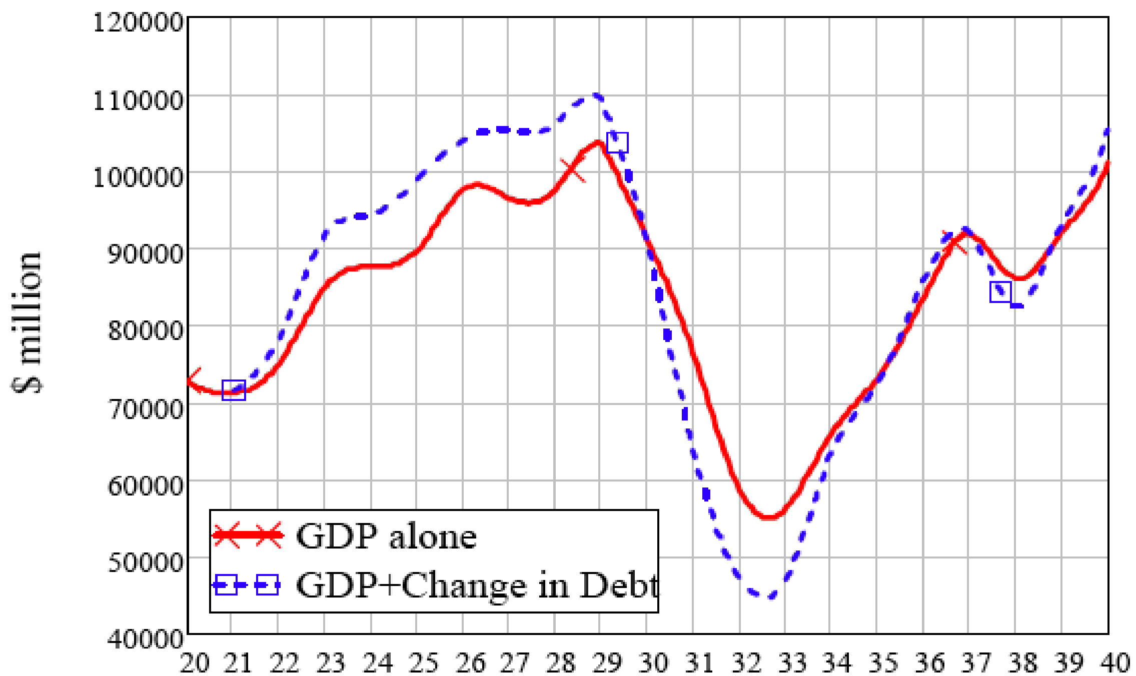
In October of 1929, the Fed managed to make the stock market bubble to burst. Even after the stock market crash the economy was having a modest recession, similar to the ones in 1924 and 1927, and so it was unpredictable at this time that the recession would continue and at a point it violently worsened (Galbraith 2009).

Bordo and James (2009) point out that “Stock Exchange collapses or the end of asset bubbles do not necessarily lead to prolonged recessions of deep depression” (p.4-5). That was indeed the case. The market crash created other effects, and those effects only worsened the expectations of the population on what was about to happen.

The stock market crash was responsible for reducing private wealth by about 10 percent, consumers' assets were reduced and their debts maintained.

The lack of confidence led the consumers to decrease their consumption, mainly the consumption of durable goods. In 1930 it was noticeable a fall in consumption (Temin, 1994). Romer (2003) described the same effect as Temin, she describes that "The stock market crash reduced American Aggregate Demand substantially. Consumer purchases of durable goods and business investment fell sharply after the crash. A likely explanation is that the financial crisis generated considerable uncertainty about future income, which in turn led consumers and firms to put off purchases of durable goods." (p. 3).

Illustration 5: US Aggregate Demand GDP 1920-1940



Source: Retrieved from "Steve Keen's Scary Model" by Y. Smith, 2010, July 4 [Web log post]

2.5 Real Estate Bubble

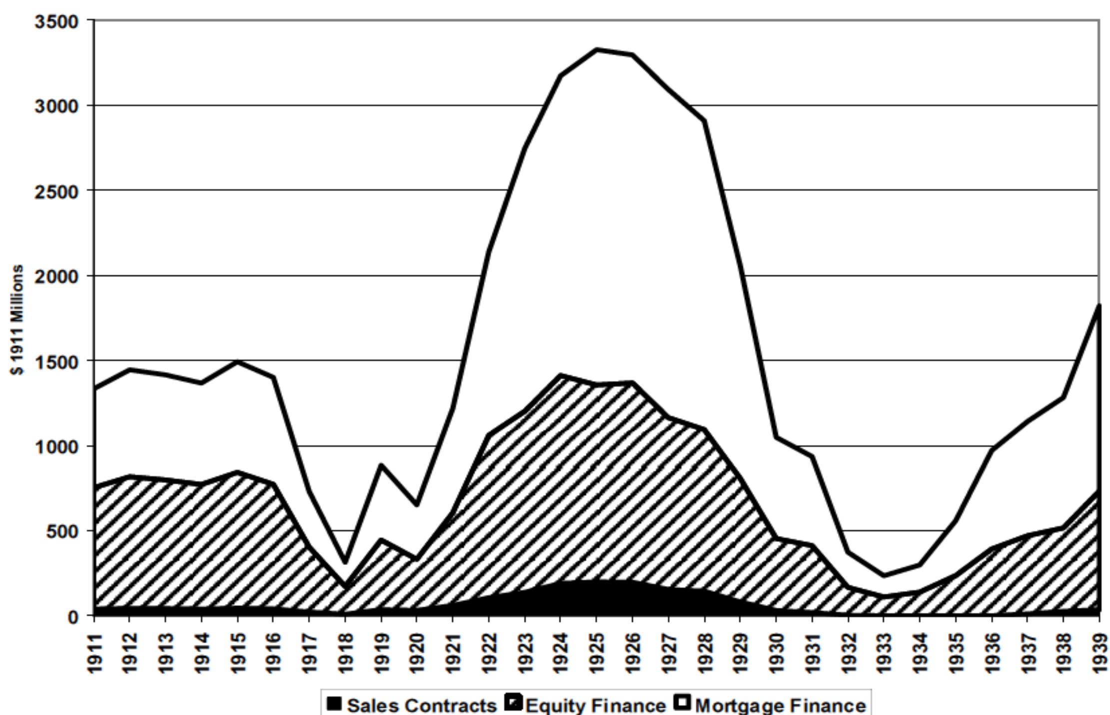
Many economists point out the stock market bubble as an important factor of the Great Depression, but there are also a few that defend the real estate bubble as an important factor as well.

The main reason to consider the real estate bubble even more important than the stock market bubble is the simple fact that the real estate bubble affected a greater part of the population.

During the 1920's decade due to the low interest rates and to the lack of restrictions over loans the real estate market was flourishing, and it did flourish until 1925. Among the real estate market, construction of residential housing was the one with greater increases. According to Meyer the real estate market was divided in 3 phases, from 1912 to 1922 there wasn't enough houses being built, in 1922 to 1926 the demand was being met, and after that the real estate market had become a speculative market (Butkiewicz, 2005).

Real estate markets have changed since the World War I, mortgage financing started to be more and more usual as new entrants would join the real estate business. Before the World War I mortgage funding accounted for less than 45 percent of residential construction finance. In 1926 mortgage funding reached 60 percent representing 3.3 billion dollars (White, 2009).

Illustration 6: Sources of Funding for residential construction, 1911 - 1929



Source: Retrieved from "Lessons From The Great American Real Estate Boom And Bust Of The 1920's" by E. White, 2009, *National Bureau of Economic Research*, [Working Paper Nº 15573], pp. 24. Copyright 2009 by Peter Eugene N. White.

The sources of finance were also changing. The increase of lending by more aggressive lenders, such as commercial banks and insurance companies, was allowing that more and more people could own a house.

There was a lack of liquidity among the household market, and so to ease up that lack of liquidity people would go for an equity loan or a refinance that they are going to cash out of their house. This generates a distortion. The main collaterals of mortgages are households and if there is a bubble on household prices, it creates a big distortion. Abramovitz explains the situation US was living with the reference of what happened in Chicago. Chicago was living years of great urbanization, the prices of houses and lands were increasing dramatically, so banks were willing to lend more money. As long as the prices kept increasing everything was going to be bailed out. That produced a real estate bubble, but when the supply caught up with the demand the bubble busted, and the banks realized they were full of illiquid assets which originated a banking panic (Parker, 2002).

This is an example of what happened all over America.

Due to the increase in banking loans, with the burst of the real estate bubble the banks were now facing major liquidity problems. The households given as collaterals lost their value, and with the excessive supply generated by frenetic construction were getting even harder to sell.

Banks everywhere were struggling to avoid insolvency.

2.6 Banking System and Monetary Contraction

The US banking system was different from any other banking systems in the world. It was composed by small independent banks. This was due to the fear US had of large banks and “trusts”, and so there were regulations made to avoid them from having a large size.

Even before the crisis US had realized that it needed an institution to prevent financial panics, and so the Fed was created in December 1913, with the particular mission of preventing further financial panics.

Since its creation the Fed has expanded and evolved, and became responsible of supervising the banking system. According to Bernanke, in 1921, already with the Fed in control there was serious deflation. The banking system was lacking rules. Banks were not properly capitalized, the reserves were low, and the anti-branching laws were causing local monopolies and creating more and more inefficient banks (Parker, 2007).

Still the confidence in US' banking system was high, they had recently managed to solve a crisis in the agricultural sector.

As it was explained before, the agriculture crisis started when food suppliers were producing excessive output due to the lack of consumption by the Europeans which led to lower prices. Farmers intended to pay the loans they contracted with the revenue from their crops and as the prices lowered they couldn't afford to pay their loans. The insolvencies that occurred during that time were mainly in the south and west, generated by the decline on agricultural prices and land values. According to Mitchener (1991), after 1920, financial economists were advocating an increase in capital requirements and reserve requirements. At least in the states that suffered the most by the agricultural crisis there was a change in capital requirements, reserve requirements, and branching laws. The deflation was controlled and mass insolvencies were avoided, although the effect only improved confidence over the banking system that was adopted (Parker, 2007). The agriculture crisis served to boost US' confidence on its banking system.

The US banking system has worked properly over the 1920's decade and the low interest rates that were being practiced pushed the development of the economy to a level that was never seen before. The real estate was in all times high until 1925 and the stock market was also at its best, but when the stock market crashed in 1929 together with the real estate, the confidence of the general population was shaken. The US' banking system was about to be tested, but at this time there was a major difference in the banking system safety net.

According to Bernanke before the Fed was created, there was the possibility of suspending convertibility of bank deposits into currency, so the danger of "runs" on banks was limited by the clearing houses that provided enough liquidity to avoid the depletion of deposits. The clearing houses were the lender of last resort. The clearing houses realized it wasn't their role anymore of being the lender of last resort, now it was the Fed's job (Parker, 2007).

There was another characteristic of the US Banking system that could lead to disaster, which was the lack of a central regulator for the banking institution instead there were different regulators for each type of bank.

> National banks were regulated and supervised by the Office of the Comptroller of the Currency. Fed member banks (which included all national banks and a minority of state-chartered banks) faced additional regulation and oversight. But the vast majority of banks were nonmember, state-chartered commercial banks, which were supervised by state banking departments and regulated by laws passed by state legislatures (Mitchener, 1991, p.5).

The differences between the supervisors provided different capital requirements, reserve requirements, and branching laws. The differences on the requirements of national banks and private banks were colossal, and as Mitchener (1991) shows**,** national banks were better prepared. The author found four reasons that led to the downward spiral of the banking system during the Great Depression:

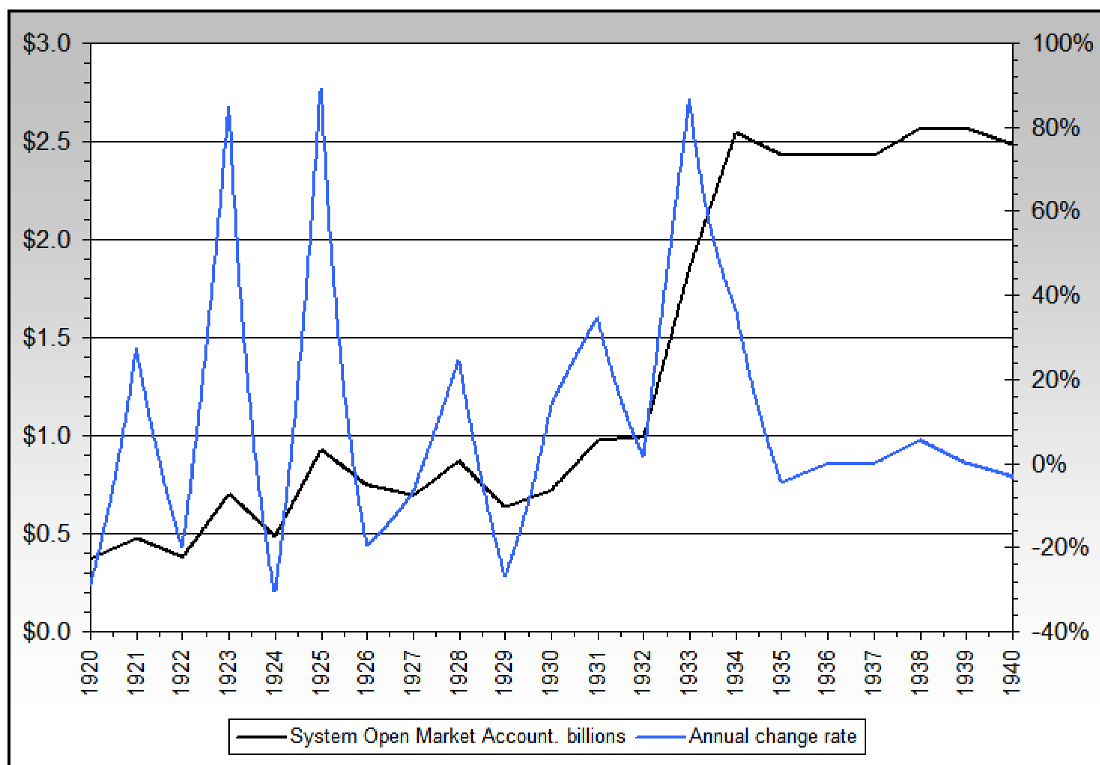
> First, politics can undermine the stability of banking systems. As a result of the privative motives of interest groups and the public response to previous banking crisis, some states adopted stricter reserve requirements and laws forbidding branch banking, which led to higher bank failure rates during the Depression. Second, designing supervisory structures to reduce the likelihood of banking crises requires taking into account the incentives of both interest groups and the regulators themselves. States that attempted to insulate their bank superintendents from political influence by lengthening the terms of their superintendents exposed themselves to greater influence from bankers who recognized that the incentives for influencing supervisory decisions were now higher; this had surprising and counterproductive consequences during the Depression. Third, giving sufficient powers to regulators to carry out their supervisory mandate can increase systemic safety. Failure rates, for example, were lower in states where bank supervisors had the authority to liquidate banks without the court first having to appoint a receiver. Finally, the initial regulatory design can induce the formation of interest groups and lock in a regulatory trajectory that can have lasting effects. The dual banking system that developed in the U.S. in the 19th century nurtured the formation of a set of interest groups, which in turn influenced state regulations in the 1920s. These regulations consequently help to explain the regional severity of the U.S. banking crisis during the Great Depression (Mitchener, 1991, p.66-67).

The failures of the banking system in the fall of 1930, led to the extinction of the few confidence the population had left on the banking system, so runs on the banks started. Four waves of banking panics strut all across US and major insolvencies began. The four waves of banking panics started in the fall of 1930, the spring of 1931, the fall of 1931, and the fall of 1932. The momentum was only stopped when on March 6, 1933 Roosevelt declared a national "bank holiday" (Romer, 2003).

Friedman and Schwartz (1963) believe the first wave started in December of 1930, with the failure of the Bank of the US. Friedman and Schwartz continued

by dividing the crisis in 6 moments: (1) The period prior to the first banking panic – That is, August 1929 to October 1930. This period encompassed the stock market crash in October 1929 to which the Fed responded by short-lived increase in the quantity of money. Subsequently, an earlier decline in the quantity of money was resumed, but there was no attempt by banks to liquidate loans or by depositors to shift from deposits to currency. During this interval, the contraction would have been defined as severe relative to earlier ones. (2) The first banking panic, covering the final quarter of 1930, when the real economy markedly worsened. (3) The first quarter of 1931, when signs of revival were nipped upon the onset of a second banking crisis in March 1931. (4) The last half of 1931, when the response of the Fed to Britain's departure from gold was accompanied by another outbreak of banking panic and a substantial deepening of the real decline that persisted through the first quarter of 1932. (5) The second quarter of 1932, when the Fed undertook open-market purchases, following which there was a widespread revival in the real economy in the summer and fall. (6) The final six months of the contraction, when the problems with the banks spread, the real economy turned downward again, and the contraction ended with a collapse of financial markets.

Illustration 7: Open Market Operations, 1920 - 1940

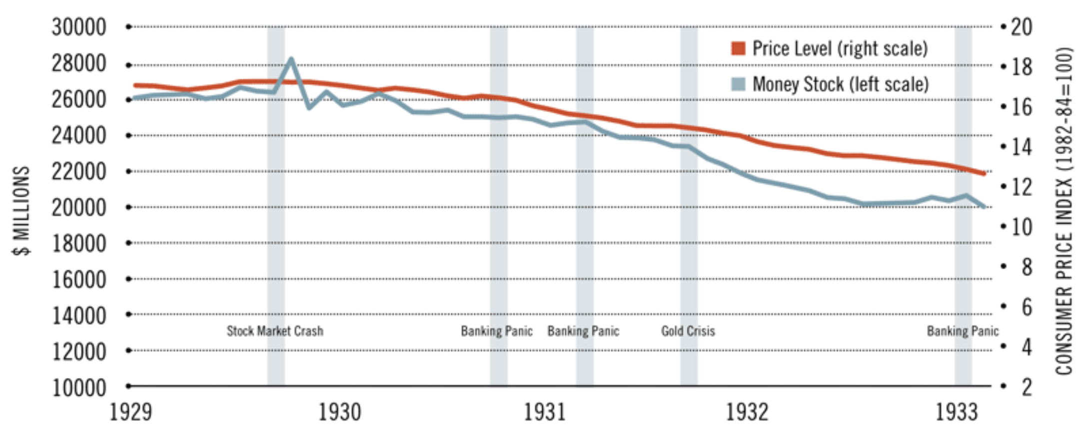


Source: Retrieved from "Monetary & fiscal stat comparisons 1929 and now", by A world of possible futures (n.d.)

According to Friedman and Schwartz (1963) the banking panics could be avoided by restricting payments, like they did in 1893 and 1907, which ended the bank suspensions and promoted economic recovery. When banks acted together to restrict payments, it devaluated deposits against currency. Deposit prices started being determined by supply and demand. In 1903 and 1907, the currency premium never passed from 4 percent.

The banking failures led to an increase in banking reserves and an increase demand of currency, which eventually contracted Aggregate Demand. The runs on the banks were affecting the aggregate demand even more which was already seriously affected. The Fed didn't realize it was its job to provide liquidity to these banks at least until the panics eased up. The lack of money supply was causing banks to decline credit they would otherwise grant (Friedman & Schwartz, 1963).

Illustration 8: Financial Shocks and inflation during the Great Depression



Source: Adapted from "*A Monetary History of the United States, 1867-1960*", by M. Friedman and A. Schwartz, 1963, Princeton, N.J.: Princeton University Press. Copyright 1963 by National Bureau of Economic Research

Friedman and Schwartz (1963) believe Fed's inaction is strongly correlated with the death of Benjamin Strong in 1928. Benjamin Strong was the president of the New York's Fed. He was a doer who believed the right way to go was to avoid panics at all costs. When he died, the leaders that took his place didn't follow his advice and through their policies seriously contracted the money supply, sending the US further into the Depression.

The stock market collapse made firms to shift their new offerings from stocks to bonds. From 1929 to 1930, net new stock offerings declined by 2.5 billion dollars, while on the other hand, new net bonds offerings have risen by 1.4 billion dollar, the financial markets were shifting. Although in the end of 1930,

with the increase in the number of bonds being traded, and with the perceived risk increasing due to businesses and banks failing, the price was getting lower (Temin, 1994).

2.7 The Gold Standard

The gold standard, as a fixed exchange rate that traded monetary units by a fixed weight of gold, was the instrument that allowed the flow of investments and persons all over the world. In the end of the 19th century many countries have adopted the gold standard. The gold standard permitted that saving and investing could be guaranteed by the stability of money values.

The classical gold standard started before World War I and at the time everything was working smoothly, without any major crisis. When the World War I started, the gold standard had to be suspended with the intention of bringing it back as soon as possible. There was no doubt between the population and governments that the gold standard was the right way to go.

To understand the importance of the gold standard at the time, it is important to go back to 1918 when the Cunliffe Committee reported to the British government regarding the gold standard. The Committee stated as follows: "In our opinion it is imperative that after the war the conditions necessary to the maintenance of an effective gold standard should be restored without delay." In the same report it is explicit the opinion of the gold standard as being the best way to avoid economic instability (Eichengreen & Flandreau, 1997).

The return of the gold standard was only possible in the mid-1920s, without ever realizing that the rules of the game had changed. The report didn't mention one slight problem that was the restoration that the committee expected was the free purchase and sale of gold at prewar parities. Prewar parities were completely outdated and the parities didn't bear in mind the existing levels of income and costs in terms of the national currency, (Eichengreen & Flandreau, 1997).

The parities needed to be changed dramatically because after the Great War and due to the increase of control in labor markets, unions, personnel departments and such, the wages began to lose the flexibility they once had, and so the mechanism adjustment of the gold standard was lost. The reluctance in reducing the wages led to the fragility and inflexibility of the gold standard which in turn led to the Great Depression (Eichegreen & Temin, 1997).

With the return of the Gold standard, the same was happening all over Europe, the currencies were misadjusted. The pound was overvalued, the franc and the marc were undervalued and so on.

The French realized that to maintain prosperity the French prices should be below world prices, this kind of egocentric behavior was putting the gold standard in jeopardy as it created huge discrepancies on the value of currencies.

The discrepancies on the value of currencies was creating huge outflows of gold on the countries with overvalued currencies (Britain) to the ones with undervalued currencies (France), which in time led to disaster (Eichegreen & Temin, 1997).

To decrease gold outflows Britain resorted to a significant increase in interest rates. The increase in interest rates decreased the aggregate demand, worsening even more the economic conditions in Britain. In September 1931, the British economy was decaying rapidly and the solution they encountered was to suspend the gold standard. After six months Britain was expanding (Kraner, 2010).

Some historians realized that if countries had resumed the gold standard with more realistic parities, there was limited need for the 1920's deflationary adjustments, although wages and prices needed a reduction. If the policy makers did that the gold standard could stand, at least for a few more years (Eichegreen & Temin, 1997).

According to Temin (1994) when Britain went off gold, attentions turned to US, and according to Temin it was at that stage that the growing depression was turned into the Great Depression by the Fed. The same author said the Fed's mistake started when investors thought the dollar was going to take the same path as the pound and so they rushed to sell dollars. The solution the Fed found to preserve the dollar was to increase interest rates which greatly accelerated the decline on money supply. Industrial production, which had stopped from falling in the spring of 1931, resumed to fall after the increase in interest rates.

Some economists, like Romer believe that the gold standard collapse was in part the cause of the inaction of the Fed, which aggravated and caused the Great Depression.

According to Romer (2003) if the Fed hadn't tightened the money supply by the fall of 1931, US could have experienced a speculative attack on the dollar which could have forced the US to abandon the gold standard, at that stage.

> The Fed System reacted vigorously and promptly to the external drain, has it had not to the previous internal drain. On October 9, the Reserve

> Bank of New York raised its rediscount rate to 2 ½ per cent and on October 16, to 3 ½ per cent the sharpest rise within so brief a period in the whole history of the system, before or since (Friedman & Schwartz, 1963, p.317).

> The US were on a gold standard throughout the Depression. Part of the explanation for why the Fed did so little to counter the financial panics and economic decline was that it was fighting to defend the gold standard and maintain the prevailing Fixed Exchange rate (Romer, 2009, p.6).

Benham describes the thoughts of most of the economists of that decade.

> The loss of gold or the higher bank rate, then, can restore international equilibrium only by reducing internal prices. Of these, the most important is the price of labour. Wages and other incomes from labour may be reduced. This will have double effect. On the one hand, wage earners and others will have less to spend on everything, including imports. On the other hand costs will be reduced in all industries, including export industries. Imports will be checked and exports stimulated until the two flows once more balance (Benham, 1932, p.250).

The Great Depression started as soon as the policies to preserve the gold standard were adopted. Policies were designed to preserve the gold standard and not employment. While bankers thought that the maintenance was going to save employment on the long run, when banks started to fail there were major output and price losses as well as saving losses. The huge increase on unemployment was making US more and more reluctant on keeping the gold standard.

According to Eichegreen & Temin (1997), the major mistake committed by the Fed and the Bank of England was that they didn’t follow the gold standard mentality. Instead, they sterilized gold inflows which prevented prices and costs from adjusting. Central banks panicked to the point of reducing the share of foreign exchange in global monetary reserves from 37 per cent in 1928 to 11 per cent in 1931. Central banks wanted to preserve their gold reserves at all cost.

The rush on the gold only made the banks to restrict the credit, which depressed prices, production and employment (Eichegreen & Temin, 1997).

Deflation led to a spiral which greatly reduced consumption due to the increase in the real debts of the population.

Despite the fact the economy was collapsing due to deflation, Hoover maintained deflation politics when he was in charge. When Roosevelt won elections, Hoover tried to convince him the best way he can that the gold standard was the salvation of the economy. Even two decades after US left gold standard, Hoover maintained his posture of assuming it was the right way to go (Eichengreen & Temin, 2000).

Fortunately, Hoover's warnings didn't reach Roosevelt and when he was elected in November 1932, it took him only 4 months to abandon the gold standard. In the same year Roosevelt participated in the World Economic Conference in July, in his words it is well documented what he thought of the gold standard:

> The world will not long be lulled by the specious fallacy of achieving a temporary and probably an artificial stability in foreign exchange on the part of a few large countries only" He continued "The sound internal economic situation of a nation is a greater factor in its well-being that the price of its currency (Nixon, 1969 apud Eichengreen & Temin, 1997, p.269).

2.8 What ended the Great Depression?

The end of the Great Depression was caused by a number of facts. It is impossible to specify a single act that led to the end of The Great Depression. Although the most important fact regarded by most economists is without a doubt World War II.

There are many economists like Lucas, Zarkowitz, Abramovitz, Adelman, that will simply put it that it was World War II that ended the Great Depression.

There are others that are more specific in describing the facts that ended the Great Depression. We have Samuelson's opinion, who believes the end of Great Depression was caused by the "Golden Avalanche". The "Golden Avalanche" started in 1933 when Franklin Roosevelt relinquished the gold standard. When US got off the gold standard it was freed from the deflationary vortex they were in. The World War II created an inflow of gold reserves, so there wouldn't be a shortage on gold (Parker, 2002).

In 1933 Keynes explained to Roosevelt with very precise figures that he needed to spend much more in deficit spending, and although Samuelson doesn't agree on how Keynes did it (with that amount of confidence with his

numbers), he agrees with the part that it was ideal and salutary to increase the total depression budget deficit (as cited in Parker, 2002, p.34).

Samuelson remembers that because USA "…was down so low, and once the recovery was pushed by this unorthodox spending (World War II), the annual increases in GDP in real terms and in the money supply, were colossal" (as cited in Parker, 2002, p.35).

Friedman believes the Great Depression has ended by a series of factors. First of all, the start of World War II and government spending for armament, that was financed by printing money which led to an increase of the money supply. Friedman also gives great importance to the measures that Roosevelt took. Among them, the bank holiday, the going off gold, the program to purchase gold and the silver purchase program (as cited in Parker, 2002).

Albert Hart believes the end of the Great Depression was mainly due to the start of World War II. The credibility of banks was restored once they started to guarantee their banking deposits which adverted the rush on banks. Hart also believes the New Deal improved the falling of the economy in a way, but not a significant one. Instead of having a recession US ended up with stagnation with the teachings of the new dealers (as cited in Parker, 2002).

Kindleberg also thinks that the War was the lifeboat of the Great Depression. Regarding the role that fiscal and monetary policy might have in the end of The Great Depression Kindleberg's opinion is that "Fiscal policy could do it but it is a hard policy to play", regarding the monetary policy he reminds that the short term of interest rate got down to negative values, but that wasn't the problem, the problem was the lack of a spending boom or durable goods production (as cited in Parker, 2002, p.101).

Schwartz believes it was Roosevelt's actions (closing the banks, devaluation of the dollar) that ended the Great Depression. Roosevelt's actions inspired people to react. In 1936, people realized that Roosevelt wasn't the savior they once thought because in 1934 US was in a liquidity trap. Schwartz also believes that Roosevelt should have done like the Japanese when they increased money supply, even though they had interest rates close to zero. Kindleberg isn't a big supporter of Roosevelt, in his opinion, Roosevelt was trying one thing after another till he got it right. Kindleberg characterizes Roosevelt attacks on the World Economic Conference of 1933 "…as an awkward economic analysis." He also thinks that NRA (National Recovery Administration) was a mistake (as cited in Parker, 2002).

Tobin considers there are two important moments which led to the end of the Great Depression. The first was until 1938 with the confidence restored, Roosevelt opening the banks, and the devaluation of the dollar. The second

moment he believes, like many other economists, that it was World War II that ultimately freed US from the Great Depression with the aid supplied to the allied forces. Tobin believes the New Deal didn't have that much influence in the recovery, although he supports their work on the relief programs like the WPA (Work Projects Administration) and the financial reforms. As for the NRA and the AAA (Agricultural Adjustment Administration) they were really bad ideas (as cited in Parker, 2002).

Stein believes the Great Depression ended when monetary stringency stopped, and when US abandoned the gold standard, in summary when the fiscal policy changed. Although, in the end he points out that the War had the biggest role on ending it (as cited in Parker, 2002).

Temin (apud Parker, 2007) points out two factors, first was going off the gold standard, and the second and more important one had to be the beginning of World War II. Temin thought the role of Roosevelt on the recuperation of the economy was a bright one. Roosevelt changed the expectations of the population, he left the gold standard and changed the regime drastically which led to an increase of confidence among the population. According to Temin abandoning the gold standard was one of the most important steps that Roosevelt took, because the problem of the gold standard was:

> Calling for lower wages is the discourse of the standard because this call follows from the mechanics of the monetary system. Countries on the gold standard cannot devalue their currencies and allow the demand for exports to determine their exchange rate. They cannot expand the money supply to stimulate domestic demand, for doing so would push up prices, provoke gold exports, and weaken the exchange rate. For them, the only way to reduce prices is to reduce costs of production, and the largest of these costs is labor (as cited in Parker, 2007, p.45).

The problem was that Unions were reluctant to lower wages, and ultimately this led to the instability of the gold standard.

The end of the Great Depression started when the gold standard was removed and the banking system was stabilized by the banking holiday, these were the two main impediments to the recovery according to Bernanke (as cited in Parker, 2007).

As cited in Parker (2007), when asked what got US out of the Great Depression Hamilton points out getting off the gold standard linked with the monetary and fiscal stimulus of World War II.

Regarding the end of the Great Depression, Ohanian attributes an enormous role to the reversal of Roosevelt’s labor and industrial policies. There was a decrease on the bargaining power of Unions as well. In summary what ended the Great Depression was the end of the New Deal policies and the World War II expansion (as cited in Parker, 2007).

In the end it was the monetary expansion that ended the Great Depression as Romer stresses out. “…people may have missed the crucial role of monetary expansion because the nominal interest rate was already near zero before the start of the recovery. In this situation, it looks as though further monetary expansion could not have done anything. But, expansionary monetary policy can cause expectations of inflation.” (as cited in Parker, 2007, p.136). It was an interest-sensitive spending, that led to the recovery. The consumption of services just continued to go down but the consumption of durables just rose.

Eichengreen reported that the Great Depression ended with the abandoning of the gold standard which led to a stabilization of prices and financial systems. The political change in the government solved the downward trend (as cited in Parker, 2007).

As cited in Parker (2007), Cecchetti said it was World War II that ended the Great Depression, and if it wasn’t for the War, the economy could have taken a better path if reserve requirements didn’t exist.

Butkiewicz believes that what ended the Great Depression was World War II, and in a minor extent the gold inflows and the monetary expansions. He also believes that the RFC (Reconstruction Finance Corporation) and the FDCI (Federal Deposit Insurance Corporation) were one of the causes for the slow pace of the recovery (as cited in Parker, 2007).

Bordo thinks there were a series of events that led to the end of the Great Depression. It started with the election of Roosevelt and the change in policies, the bank holiday, the devaluation of the dollar, the following of expansionary gold policy by the Treasury and the change in Fed’s policies regarding open market operations. World War II was important because it led to gold flows that allowed the expansionary gold policy of the Treasury (as cited in Parker, 2007).

As cited in Parker (2007), Calomiris reminds that there are at least two stages on the recovery of the Great Depression. The first one started in March 1933 when Roosevelt left the gold standard which led to an increase of the industrial production. The second one was in 1939 with the start of the World War II.

When asked what ended the Great Depression Meltzer points out the gold inflows and World War II. In 1936 the money growth was very high so the economy was almost at 1929’s level, but in 1937 the Treasury and the Fed

agreed to sterilize gold inflows slowing the recovery. In the end it was World War II that finished the cycle of recovery (as cited in Parker, 2007).

The most important and most regarded factor that led to the end of the Great Depression is in fact the start of World War II.

2.9 What are the lessons we should take from the Great Depression?

The lessons US has learned from the Great Depression should prevent it from taking the same path as before.

Every economist will explain that there are a series of lessons that we took and that we should take from the Great Depression.

A great example of that goes to Friedman. Friedman shows that the lesson we should take from the Great Depression, is that the government just failed with the mismanagement of the monetary system. The lesson people took from it was you couldn’t count on capitalism for itself, you need the intervention of the government to complete it (as cited in Parker, 2002).

Abramovitz thinks the lesson US should take is to be careful with bubble economies, while Kindleberger goes further naming the solution to try and avoid bubbles, that solution starts by a rationalization of loans to speculators(like margin requirements applied to futures) (as cited in Parker, 2002).

Hart remembers that the World is bigger than the US. Hart and Bordo also focus their opinions towards central banks. They believe that the lesson US should take is to keep an eye on banking regulations so banking panics could be avoided above all. Kindleberger also addresses the central banks question reminding that the role of the lender of last resort has to be accomplished (Parker, 2002).

Some economists emphasize the price stabilization question, among them we have Kindleberger, Calomiris and Bernanke. Although Kindleberger focus mainly on interest rates prices, and the mistake of trying to lower them in one country while other linked to it is trying to raise them. Regarding the last part, Kindleberg states “If you have one market, there can only be one price. But if you have two markets that are joined with a market in between, you only have one price. Try to make two prices and you get into trouble.” (as cited in Parker, 2002, p.102). As cited by the same author, Bernanke addresses to the stabilization of prizes in a different context. Bernanke remembers that if there was a price target of inflation/deflation, US would be obliged to abandon the

gold standard, and the Depression would be somewhat controlled. Calomiris believes the price stabilization is necessary, because after all it was government policies that were pushing the inflation higher.

On the other side of price stabilization we have Tobin. As cited in Parker (2002) Tobin defends people shouldn't give that much emphasis on prices. People should pay attention to quantities more than prices. In these matters Tobin states:

> The biggest thing then that I think is that instantaneous market clearing, continuous equilibrium in that sense, supply equals demand and prices move all the time to adapt to whatever shifts in the curves occur, that is not a good way of going about macroeconomics in my opinion (p.138).

There are others also that point to the inflation/deflation lesson in a more general way. We have Stein, Bordo and Meltzer to support this idea. Stein says that the lesson we should keep in mind is "We have serious depressions in this country only after serious inflation" (as cited in Parker, 2002, p. 178). Bordo on the other hand believes the deflation problem has been learned too well, he believes that now the Fed can't distinguish the deflations that are related to productivity advances to the ones that are not. Meltzer points in a different direction, he believes that because now the Fed has inflation targeting, they are obliged to have a medium term horizon, from 2 to 3 years, avoiding major discrepancies. (as cited in Parker, 2007). Meltzer makes this remark because he believes the Fed is dealing with problems in a day to day basis, while they should focus on a medium term strategy. A good way to show what he means by short term basis can be seen on the weight the Fed puts on short interest rate movements, although today it has nothing to do with 1929 (as cited in Parker, 2007).

The lessons learned by the government are well addressed by many economists. One of them is Romer who starts by saying that the government is not powerless to stop a major depression and Eichengreen that suggests that the fundamental lessons we should take from the Great Depression are: introducing a coherent policy framework, which requires the independence of the central bank, a clear objective and a clear identification of policy channels and how it affects the economy. On the same line of thought we have Adelman who remembers that accidents happen, and the government should be ready to stop them from propagating (as cited in Parker (2007a) e Parker (2002b)).

Schwartz thinks the government and the Fed realized that a contraction of money can't continue without taking measures, nor can they let an expansion of the money stock above the real growth rate of the economy. An overview of what Schwartz means can be observed during the Great Depression when

businessmen were trying to keep the wages, because they believed if wages got lower so would the purchasing power, what they didn't realize was that sales were still dropping (as cited in Parker, 2002).

Hamilton believes there are some answers that sill remain unsorted. The answer that Hamilton believes it still remains unsorted is what was exactly "… the nature of the transaction frictions or coordination frictions that are the core of what can go so spectacularly wrong" (as cited in Parker, 2007, p.84).

2.10 Could it happen again?

There is a consensus in the profession when this question is asked. The majority of economists will simply answer that it is very unlikely that it would happen again.

As cited in Parker (2002) the only differences are related on why they say it won't happen again. Samuelson believes US would act accordingly if something similar was about to happen: "If it is just shortage of purchasing power, our mores have changed, our knowledge has changed, and money would be printed and borrowings would take place…" (p.37). However Samuelson defends that an overstimulation could be possible, that would lead to inflation. There is no constancy of the velocity of circulation. Friedman also addresses to the inflation problem, "Another Depression like that will not happen until first we have a great inflation. We're always fighting the last war" (p.55).

US has learned its mistakes during the Great Depression, and today no central bank will let the money supply go down like it did, as long as that stands, we will not have another Great Depression. Friedman also writes: "But if you once have a great inflation, all bets are off and anything might happen." (as cited in Parker, 2002, p.55).

Abramovitz focus on the knowledge we have today to avoid something similar, as he says "My own sense of the matter is that the severity and length of the Great Depression of the 1930's could not happen again in the economy we know today" (as cited in Parker, 2002, p.71). The author also believes it is impossible to forecast the future, so we can become more vulnerable to great disasters without even knowing.

Kindleberg believes another Great Depression would be avoided because the role of the lender of last resort has been greatly improved. It is possible to have crashes, but not another Great Depression (as cited in Parker, 2002).

Tobin expresses that in US and in a capitalist democracy it is very unlikely it could happen again. Tobin is somewhat reluctant when he looks at Europe and

Japan who succeeded in having a depression. Lucas also stresses the same concern with Japan with its sophisticated economy that managed to plunge in to a decade of slow growth due to monetary reasons. Lucas believes it is not right to say it couldn't happen again (as cited in Parker (2002a) and Parker (2007b)).

Adelman, Zarkowitz and Cechetti think there is a possibility that the Great Depression can happen again. But while Adelman says that it's not likely that the same factors that propagated so fast then would propagate at the same rate now, and Zarkowitz adverts that downturns are most of the times unexpected, Cecchetti believes fiscal policy could take US back to another Great Depression. The risk of a high deflation together with a collapse of the economy could disrupt the economy. Although, Cecchetti thinks is improbable US could have again a 30 percent deflation together with a loss of 30 percent in output, now there are mechanisms to avoid that, that lesson has been learned (as cited in Parker (2002a, b) and Parker (2007c)).

Temin affirms that there will not be one Great Depression like the one in 1930, but economic collapses can always occur, and those collapses can be generated by people aiming for a different goal than economic stability. At this point Temin criticizes Bush's Administration as a perfect example of that (as cited in Parker, 2007).

Bernanke alerts that there are always risks that will affect the economy, should they be monetary, financial, or others, but he also doesn't believe it could happen (as cited in Parker, 2007).

The reason why Hamilton believes in the impossibility of another Great Depression is simply because he considers inconceivable that the Fed would allow that kind of deflation again as he states:

> The intellectual and academic tradition in the Fed is such that I can't conceive of them ever again allowing this magnitude of deflation, this magnitude of a drop in the monetary aggregates, and while all that is going on the economy crashes (as cited in Parker, 2007, p84).

Romer considers the Great Depression has a sequence of mistakes like "… contractionary aggregate demand shocks, first coming from the stock market crash, then from the financial panics, then we raised taxes, then we raised interest rates". According to the author, today there is a lot of consciousness about what and what can't be done to prevent a Depression like this (as cited in Parker, 2007, p.137).

Eichengreen believes US has learned with the Great Depression as he also points out that today US has a great scholar of the Great Depression as

chairman of the Fed, who will do the best he can to prevent another episode like that. Despite that, Eichengreen believes US still has to be cautious because there will always be instability episodes, the question is: Will the policy makers be able to detect them on time? (as cited in Parker, 2007).

Bordo and Butkiewicz believes the reason for the Great Depression not happening again is because the US is not committed to the gold standard like it was back then, nor do the US adopt the same monetary policy as before (as cited in Parker, 2007).

Hart, Leontief, Shwartz, Stein, Ohanian, Meltzer and Calomiris believes US has learned from its mistakes (as cited in Parker (2002a) and Parker (2007b)).

2.11 Conclusion

The tables below represent a short summary of the works of Randall E. Parker in the books "Reflections on the Great Depression" and "The Economics of The Great Depression" based on interviews of distinguished economists. The objective of these tables is to identify the mentalities of The Greatest minds in Economics of the century, in their own words.

Table 1: Opinions of the Greatest Economists over the Great Depression

	PAUL SAMUELSON	MILTON FRIEDMAN	MOSES ABRAMOVITZ	ALBERT HART	CHARLES KINDLEBERGER	ANNA SCHWARTZ
DATE AND PLACE OF BIRTH	1915 GARY, INDIANA	1912 BROOKLYN, NEW YORK	1912 BROOKLYN, NEW YORK	1909 OAKPARK, ILLINOIS	1919 NEW YORK	1915 NEW YORK
SCHOLARSHIP	CHICAGO	CHICAGO	HARVARD COLUMBIA	HARVARD CHICAGO	PENNSYLVANIA COLUMBIA	COLUMBIA

Causes and Start of the Depression	Hoover Inactivism. Monetary contraction.	Monetary contraction. Collapse in consumption.	Long swings.	Hoover's Policies.	Monetary contraction. Stock market. Banks' lending to speculators.	Real estate bubble. Price instability.
Why did it last so long?				People thought the Great Depression was similar to the 1921 deflation.		
Blame of the Fed	No, the increase in money supply wasn't on the agenda of discussion. It wasn't activist enough.	Yes, they should have a more expansionary monetary policy.	No, they didn't have a chance if they wanted to maintain the gold standard.	No, they didn't have enough instrumentalities.	Yes. Fed failed as the lender of last resort. Fed was responsible for the stock market bubble.	Yes. Fed failed as the lender of last resort. They let banks fail.
What ended the Great Depression?	The "Golden Avalanche", created by the end of the gold standard and the start of World War II.	The start of World War II. Roosevelt's policies.	The start of World War II.	The start of World War II.	The start of World War II. Fiscal and monetary policies changes.	Roosevelt's policies.
Lessons learned	The role of the lender of last resort. Beware of bubble economies.	The Government failed with the mismanagement of the monetary system.	We should be careful with bubble economies.	Keep an eye on banking regulations. The world is bigger than US.	The role of the lender of last resort. Rationalization of loans to speculators. Different interest rates between linked markets	Central Banks shouldn't be arbiters of security prices. Measures should be taken to prevent the contraction of money. It's wrong to let the expansion of

						MONEY STOCK ABOVE THE REAL GROWTH RATE OF THE ECONOMY.
COULD IT HAPPEN AGAIN?	NO. HOWEVER THERE COULD BE AN OVERSTIMULATION. THAT COULD LEAD TO INFLATION	IT CAN ONLY HAPPEN IF THERE IS A GREAT INFLATION.	IT'S UNLIKELY, BUT WE CAN'T FORECAST THE FUTURE.	NO, US HAS LEARNED FROM THEIR MISTAKES OF THE PAST.	CRASHES, YES. ANOTHER GREAT DEPRESSION, NO. THE ROLE OF THE LENDER OF LAST RESORT HAS BEEN GREATLY IMPROVED.	NO, US HAS LEARNED FROM THEIR MISTAKES OF THE PAST.

Source: Adapted from "*Reflections on the Great Depression*" by R..Parker,2002, Northampton, MA, USA : Copyright data by Edward Elgar Publishing Limited and "*The Economics of the Great Depression – A Twenty-First Century Look Back at the Economics of the Interwar Era*" by R..Parker,2007, Northampton, MA, USA : Editora. Copyright data by Edward Elgar Publishing Limited

Table 2: Opinions of the Greatest Economists over the Great Depression (cont.)

	JAMES TOBIN	**WASSILY LEONTIEF**	**MORRIS ADELMAN**	**HERBERT STEIN**	**VICTOR ZARNOWITZ**	**PETER TEMIN**
DATE AND PLACE OF BIRTH	1918 CHAMPAIGN, ILLINOIS	1905 RUSSIA	1917 NEW YORK	1916 DETROIT, MICH.	1919 POLLAND	1937
SCHOLARSHIP	HARVARD	HARVARD	HARVARD	CHICAGO	CRACOW HEIDELBERG	MIT (MASSACHUSETTS INSTITUTE OF TECHNOLOGY)

Causes and Start of the Depression	Monetary contraction	Lags between production, demand and investment	Banks weaknesses.	Monetary policy mistakes.	Random Shocks	Monetary policy. Collapse of consumption. Lack of price flexibility.
Why did it last so long?	People thought the Great Depression was similar to the 1929 deflation.				Policy mistakes. Keeping the gold standard.	
Blame of the Fed	Yes. Fed failed as the lender of last resort. They let banks fail.			Yes, they were responsible for the speculative bubble of the stock market.	No, it is unfair and hindsight to tell that the FED should have increased the monetary base.	Yes, they were responsible for the stock market bubble, for not increasing the money supply, and for increasing interest rates. They should have left the gold standard. Fed thought they had to purge the system.
What ended the Great Depression?	The start of World War II. Roosevelt's policies.		The start of World War II.	The start of World War II. The change in Fiscal policies.	The start of World War II.	The start of World War II. The end of the gold standard. Roosevelt's policies.
Lessons learned	People should pay attention to quantities more than to prices.		Accidents happen, and we should avoid there propagation.	Beware of inflations.	Beware of restrictive monetary policies.	

Could it happen again?	Unlikely, but looking at Japan and Europe he is not so certain.	No, US has learned from their mistakes of the past.	It can happen, but not at the same speed as before.	No, US has learned from their mistakes of the past.	It can happen, downturns are most of the times unexpected.	No, not like the one in 1930. But economic collapses can always occur if the government goals are not economic stability.

Source: Adapted from "*Reflections on the Great Depression*" by R..Parker,2002, Northampton, MA, USA : Copyright data by Edward Elgar Publishing Limited and "*The Economics of the Great Depression – A Twenty-First Century Look Back at the Economics of the Interwar Era*" by R..Parker,2007, Northampton, MA, USA : Editora. Copyright data by Edward Elgar Publishing Limited

Table 3: Opinions of the Greatest Economists over the Great Depression (cont.)

	Ben Bernanke	James Hamilton	Robert Lucas	Lee Ohanian	Christina Romer	Barry Eichengreen
Date and Place of Birth	1953 Dillon, South Carolina	1954	1937 Washington	1957	1958 Illinois	1952
Scholarship	Harvard MIT	California	Chicago	Rochester California	MIT	Yale
Causes and Start of the Depression	Gold Standard. Financial crises. Banking crises. Exchange rate crises.	Gold Standard. Monetary contraction. Stock market crash.	Monetary contraction. Deflation. Production collapse. (which led to unemployment)	Productivity shocks. Monetary contraction.	Gold standard. Monetary contraction.	Monetary contraction. Gold standard. Financial structures. Policies adopted.
Why did it last so long?	Gold Standard. NIRA. Lack of confidence and slow recovery of the financial			Laws and regulations were slowing productivity. New Deal policies.	Some of Roosevelt policies, namely the NIRA.	

	SYSTEM.					
BLAME OF THE FED	NO, IT IS UNFAIR AND HINDSIGHT TO TELL THAT THE FED SHOULD HAVE INCREASED THE MONETARY BASE.	YES, THEY WERE RESPONSIBLE FOR NOT INCREASING THE MONEY SUPPLY.			YES. THEY ARE RESPONSIBLE FOR NOT INCREASING THE MONEY SUPPLY.	YES, THEY SHOULD ENSURE MORE CREDIT TO THE FINANCIAL INSTITUTIONS. THEY WERE RESPONSIBLE FOR THE BUBBLE TO BURST. THEIR INACTION CAUSED THE DEPRESSION.
WHAT ENDED THE GREAT DEPRESSION?	THE END OF THE GOLD STANDARD. THE STABILIZATION OF THE BANKING SYSTEM BY THE BANKING HOLIDAY.	THE END OF THE GOLD STANDARD. MONETARY AND FISCAL STIMULUS OF WORLD WAR II.	THE START OF WORLD WAR II.	ROOSEVELT'S POLICIES. THE END OF NEW DEAL POLICIES. THE WEAKENING OF UNION POWERS. THE START OF WORLD WAR II.	MONETARY EXPANSION. CONSUME OF DURABLE GOODS.	THE END OF THE GOLD STANDARD. ROOSEVELT'S POLICIES.
LESSONS LEARNED	STABILIZATION OF PRICES.	BEWARE OF THE NATURE OF THE TRANSACTION FRICTIONS OR COORDINATION FRICTIONS.			THE GOVERNMENT IS NOT POWERLESS TO PREVENT A MAJOR DEPRESSION.	A COHERENT POLICY FRAMEWORK, INDEPENDENT OF THE CENTRAL BANK, SHOULD BE INTRODUCED, AS WELL AS A CLEAR OBJECTIVE AND A CLEAR IDENTIFICATION OF POLICY CHANNELS AND HOW IT AFFECTS THE ECONOMY.
COULD IT HAPPEN AGAIN?	NO, BUT THERE ARE ALWAYS RISKS.	NO, BECAUSE THE FED WOULD NEVER ALLOW THAT KIND OF DEFLATION TO TAKE PLACE AGAIN.	UNLIKELY, BUT LOOKING AT JAPAN HE IS NOT SO CERTAIN.	NO, US HAS LEARNED FROM THEIR MISTAKES OF THE PAST.	NO, BECAUSE TODAY THERE ARE A LOT OF MEANS TO PREVENT IT.	NO, THE FED HAS A GREAT SCHOLAR OF THE DEPRESSION LEADING IT. THE ONLY QUESTION HE ASKS IS WILL THE POLICY

						MAKERS BE ABLE TO DETECT INSTABILITY EPISODES ON TIME?

Source: Adapted from "*Reflections on the Great Depression*" by R..Parker,2002, Northampton, MA, USA : Copyright data by Edward Elgar Publishing Limited and "*The Economics of the Great Depression – A Twenty-First Century Look Back at the Economics of the Interwar Era*" by R..Parker,2007, Northampton, MA, USA : Editora. Copyright data by Edward Elgar Publishing Limited

Table 4: Opinions of the Greatest Economists over the Great Depression (cont.)

	STEPHEN CECCHETTI	JAMES BUTKIEWICZ	MICHAEL BORDO	CHARLES CALOMIRIS	ALLAN MELTZER
DATE AND PLACE OF BIRTH	1956			1957	1928 MASSACHUSETTS
SCHOLARSHIP	CALIFORNIA	VIRGINIA	CHICAGO	STANFORD	CALIFORNIA
CAUSES AND START OF THE DEPRESSION	STOCK MARKET CRASH. REAL ESTATE MARKET CRASH.	REAL ESTATE BUBBLE.	MONETARY POLICIES.	MONETARY CONTRACTION. SHOCKS.	REAL BILLS DOCTRINE. MONETARY CONTRACTION.
WHY DID IT LAST SO LONG?	THEY THOUGHT THE GREAT DEPRESSION WAS SIMILAR TO THE 1921 DEFLATION.				
BLAME OF THE FED	YES, THEY WERE RESPONSIBLE FOR THE COLLAPSE OF THE FINANCIAL SYSTEM.	YES, THEY WERE RESPONSIBLE FOR THE COLLAPSE OF THE FINANCIAL SYSTEM.	YES, THEY WERE RESPONSIBLE FOR THE COLLAPSE OF THE FINANCIAL SYSTEM. THEY COULD HAVE SUSPENDED THE GOLD STANDARD.	YES, THEY WERE RESPONSIBLE FOR THE COLLAPSE OF THE FINANCIAL SYSTEM.	YES, THEY WERE RESPONSIBLE FOR THE COLLAPSE OF THE FINANCIAL SYSTEM.
WHAT ENDED THE GREAT DEPRESSION?	THE START OF WORLD WAR II. IF THERE WERE NO RESERVE REQUIREMENTS THE ECONOMY COULD HAVE DONE BETTER.	THE START OF WORLD WAR II. MONETARY EXPANSION AND GOLD INFLOWS.	ROOSEVELT'S POLICIES. THE CHANGE IN FED'S POLICIES. THE START OF WORLD WAR II.	THE END OF THE GOLD STANDARD. ROOSEVELT'S POLICIES. THE START OF WORLD WAR II.	GOLD INFLOWS. THE START OF WORLD WAR II.
LESSONS LEARNED			BANKING PANICS SHOULD BE AVOIDED ABOVE ALL. THE DEFLATION PROBLEM.	PRICE STABILITY.	THE FED DOESN'T PUT MUCH WEIGHT ON SHORT TERM INTEREST RATE MOVEMENTS,

					COMPARED WITH 1929. FED'S INFLATION TARGETING OBLIGES THEM TO HAVE A MEDIUM TERM HORIZON, FROM 2 TO 3 YEARS.
COULD IT HAPPEN AGAIN?	IT IS POSSIBLE. FISCAL POLICY COULD TAKE US BACK TO ANOTHER GREAT DEPRESSION	NO, BECAUSE US DOESN'T ADOPT THE SAME MONETARY POLICIES, AND IT IS NOT COMMITTED TO THE GOLD STANDARD LIKE IT WAS BACK THEN.	NO, BECAUSE US DOESN'T ADOPT THE SAME MONETARY POLICIES, AND IT IS NOT COMMITTED TO THE GOLD STANDARD LIKE IT WAS BACK THEN.	NO, US HAS LEARNED FROM THEIR MISTAKES OF THE PAST.	NO, US HAS LEARNED FROM THEIR MISTAKES OF THE PAST.

Source: Adapted from "*Reflections on the Great Depression*" by R..Parker,2002, Northampton, MA, USA : Copyright data by Edward Elgar Publishing Limited and "*The Economics of the Great Depression – A Twenty-First Century Look Back at the Economics of the Interwar Era*" by R..Parker,2007, Northampton, MA, USA : Editora. Copyright data by Edward Elgar Publishing Limited

The various economists analyzed above have very different backgrounds, their scholarship is very diverse, but there is a consensus in a various number of answers.

There are two types of schools roughly represented in the table, the "saltwater" economists and the "freshwater" economists. Economists call "saltwater economics" to the teachings of the Universities near the Ocean like Columbia, MIT(Massachusetts Institute of Technology), Harvard or Berkeley, the "freshwater economics" are represented by the teachings of the universities nearest to the big lakes like Carnegie Mellon, Chicago or Minnesota. The main difference in their ideologies regards the way the government should act in their economy (Scheplick, 2012).

The period right before the Great Depression was of great expansion. This great expansion was caused mainly by World War I, then US was the main supplier of the Allies, and because it didn't have an active role on the War it could save to expand and to develop. US passed from a large debtor to a situation where it was a large creditor.

There was a frenzy of new technologies that were securing a great improvement in the standard of living of all American families. The 1920's decade was so full of innovations and novelties that it was called the "Roaring

Twenties". Even US Labor Market was living great changes. Before, the Agriculture was predominant, but in the 1920's, it was becoming more industrial, more productive and more capital intensive.

These kinds of changes had to be supported by an increase in consumption, and in turn the consumption had to be financed somehow.

Families wanted the opportunity to live their "American Dream", to have a house, a car, and if they could they wanted to have access to all the new gadgets available. They wanted to "keep up with the Joneses".

Well, it was not so hard for them to reach their goals because banks had to keep up with the times and so they created the means for families to secure their dreams, even if that meant their financial effort would be over the top. There was easy credit, and there was almost no regulation. The credit granted could be used for whatever means necessary, even for speculation. That is how the bubbles started to emerge. Houses were appreciating at an incredible rate, and so the families would buy them for speculation because they knew they would appreciate in value each year that passed. Banks had the same feeling so the collaterals on mortgages were households which created a bigger distortion due to the speculative prices of this market.

Due to the increase in credit the stock market was also increasing spectacularly well, it was such an increase that a few families wanted also a piece of the stock market profits. Some families started investing on the stock market with money they borrowed from banks, for all they cared it was a sure investment. The bubble that was being formed on the stock market was increasing at a formidable speed.

The economy was expanding quickly, and there was a belief that it would never drop again.

It was only in 1928-1929 that the Fed realized that the expansion of the stock market was being created artificially by easy credit. To fight the expansion of the stock market even further the Fed has adopted contractionary policies. When the Fed adopted these policies it thought it was only affecting the stock market and it wouldn't create spillovers to the rest of the economy. They were wrong. Finally in October of 1929 the stock market bubble burst. The crash created a decrease on private wealth of about 10 percent.

The contractionary policies applied by the Fed together with the crash of the stock market decreased significantly the consumption, and the most affected goods were the durable goods. Durable goods such as houses, cars, and household appliances and so the bubble that was being created around the real estate market by years of easy credit burst as well.

While only a few were affected by the stock market crash, the crash of the real estate market affected almost all American families. Most banks wanted for mortgage collaterals households, when families couldn't afford their mortgages banks would keep their houses. The increase on defaults as led banks with a lot of houses on their hands. The decreasing demand of houses was lowering their prices abruptly and banks were now facing a huge amount of illiquid assets. Banks were struggling for liquidity, and so they tried to sell all the houses on their portfolios which caused a huge fall on housing prices. Houses were being sold at "fire sale" prices. Some of the banks didn't resist and started to collapse.

The stock market crash, the real estate market crash and now the collapse of the banking system has destroyed the confidence of US population.

Once again the Fed had its share of guilt. The Fed should have assumed the role of "Lender of Last Resort" and started to do some damage control. Instead it let some banks to file for bankruptcy obliterating the few confidence the population had left on the Banking System. When the first Banks went bankrupt the population in a desperate maneuver to prevent them from losing everything started to withdraw their deposits. Those bank runs only increased even more the number of banks that filed for bankruptcy, creating more panic and in turn even more banks went bankrupt.

US like many other countries had recently rejoined the Gold Standard. The Gold Standard as any fixed exchange rate has the ability to magnify things. When things work as intended the fixed exchange rate is perfect, but when things get sour the fixed exchange rate creates a multiplier effect. During the Great Depression it was no different.

The gold standard was suspended before the World War I, after the war there was a great rush to reinstate it again and a number of errors were committed. The most important error was to bring back the Gold Standard at pre-war parities which were severely misadjusted. With the franc and the marc undervalued and the pound overvalued. At this stage US was contracting and so it needed gold reserves, France and Germany had undervalued currencies and so their gold reserves were increasing and Britain with an overvalued pound was losing its gold reserves every day. To protect the outflow of gold reserves, Britain was obliged to increase interest rates aggravating even more its crisis. In the September 1931 Britain couldn't stand anymore and left the gold standard. When Britain left the gold standard the attentions turned to other countries' currencies. US was seriously affected with Britain's decisions.

All could have been prevented, at least for some time, if the currencies had returned at the correct parities. Also if countries had worked together, instead of acting for their own interests the Gold Standard could have been saved.

US commitment to the gold standard as obliged them to defend the currency at all cost and contracting even more the economy. The belief of Hoover in maintaining the gold standard was supreme, it was only when Roosevelt took charge that the gold standard was abandoned. The recovery started, even if it was at a slow place, when the gold standard was abolished. The deflationary vortex that US was living ended, but still the economy didn't recover as fast as it was expected.

The consistent deflation of the economy generated a liquidity trap. The interest rates were set low to stimulate the economy, but deflation increased savings since deflation increases real interest rates. And a vicious cycle started. The recession created deflation, deflation increased real interest rates, which increased savings and decreased investment which in turn lowered outputs, aggravating even more the recession. The monetary policy was now ineffective.

The real recovery started when World War II started, the production needed to fuel the fires of war as created the push US needed to get out of the Depression.

CHAPTER III

3 The Great Financial Crisis

The Great Depression is until now the longest, deepest, broadest and most severe depression the world has seen. Although the former is true, the Great Financial crisis, also called Subprime crisis, is starting to resemble a bit like the old days. The commonalities around the two crises are vast.

It is well known that there are several things to worry around the current crisis like: the biggest job loss since the Great Depression, the worst rise in home foreclosures since the Great Depression, the worst financial crisis since the Great Depression. The similarities can also be observed through the collapse of financial confidence, as well as the rapid decline of trade and industrial activity across the world. The Great Depression analogy simply refuses to go away. History more than economic theory is offering a guide on inherently unpredictable events, as we can verify in multiple investigations (Romer, 2009; Bordo & James, 2009).

Most economists thought we have learned enough from the Great Depression to avoid something similar. They believed the economic cycle was solved, but still demand disruption appeared for the first time since the Great Depression (Krugman, 2009). According to Romer (2009, p.1) since the rules of the "game" have changed the million dollar question now is "What can we learn from the 1930's that will help us to end the worst recession since the Great Depression?"

Temin (2010) believes Keynes overestimated the ability of people to learn from their mistakes, this is true for the Great Depression as well as for the Great Recession.

There are other topics that seriously resemble the Great Depression but now with different actors. After the World War I, with the destruction of the most powerful European countries US has become their lender. US has assumed the position of new world lender. Now, after the Cold War US not only lost is status of lender but developed the status of new world borrower, and its biggest lender is China a defeated country of the Cold War. Economists knew that this situation was unsustainable (Temin, 2010).

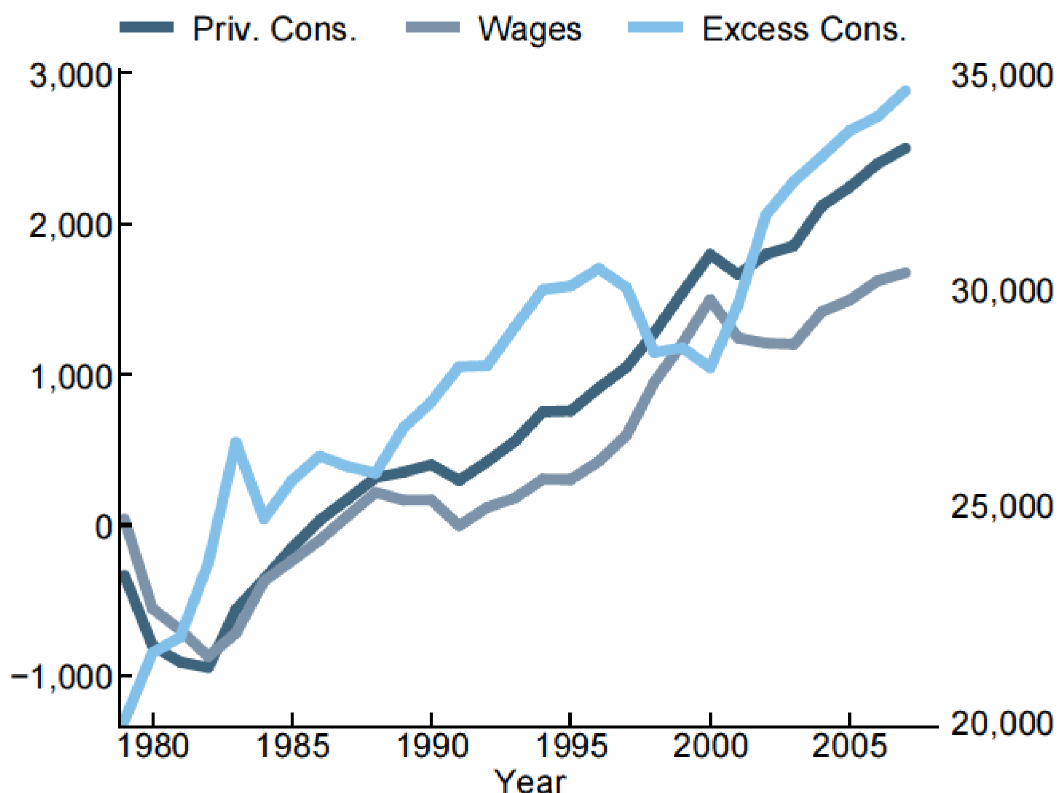
Kraner (2010) believes the financial crisis started in the first quarter of 2006, with the burst of the housing market bubble. The main reason for it to happen is linked with the easiness on borrowers to get credit even with low credit ratings. The subprime mortgages were the most appreciated by borrowers with low credit, but when the defaults started to increase abruptly the financial institution was shaken. Although there were attempts by several countries to stop its progress, the crisis was already set in motion.

3.1 Real Estate Bubble

In the beginning of this century the conditions have become exceptional for a real estate bubble to arise. Credit was extremely easy to obtain, the population had the impression the prices of houses would always rise, and houses were regarded has a great investment not by the families alone but also by banks. Families' consumption increased exponentially.

The per capita consumption of US had an average of 1,994 USD (United States Dollar) per year over the period of 1980 to 1999, but it suddenly raised to almost 2,849 USD per year from 2001 to 2007, now the question is how can this increase happen, and how was it financed? (Jagannathan, Kapoor & Schaumburg, 2009).

Illustration 9: Private Consumption in US (private consumption and total wages incl. benefits (right axis) along with excess consumption calculated as private consumption less total wages (left axis). All numbers are in 1980 $ per household).



Source: Retrieved from "Causes of The Great Recession of 2007-9: The Financial Crisis in The Symptom Not The Disease" by R. Jagannathan, M. Kapoor and E. Schaumburg, 2009, *National Bureau of Economic Research*, [Working Paper Nº 15404], pp. 14. Copyright 2009 by Ravi Jagannathan, Mudit Kapoor and Ernst Schaumburg.

What changed? How can the consumption increase if in March –November 2001 US was in a recession, the S&P 500 was performing badly, and still the US households were performing spectacularly well? Spectacularly well here means that the houses almost doubled their value from 2000 to 2007, houses started to appreciate 15% per year in 2006 against the 5 % from the 1990's (Jagannathan *et al*, 2009).

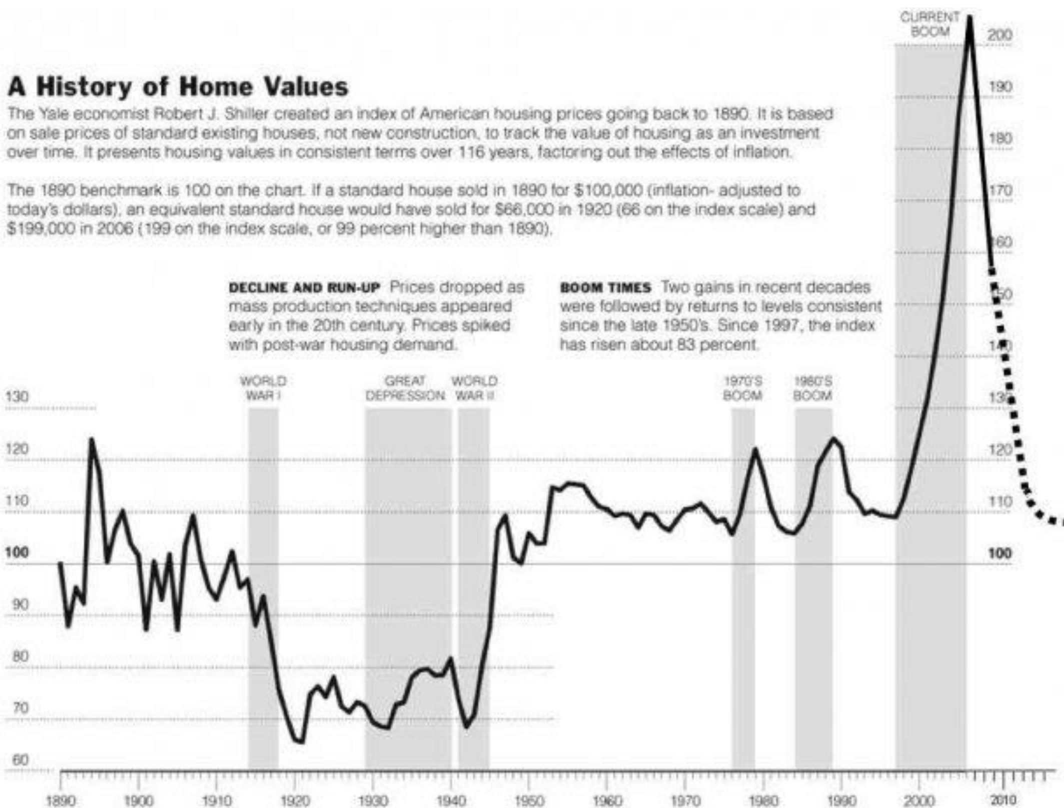
The housing price bubble allowed homebuyers to purchase a house they would otherwise consider too expensive, they thought the house prices would always go up and in that way they would be compensated by the price increases. They never thought the bubble was about to burst (Case & Shiller, 2004).

Many economists believed it was a transitory phase and it would all be over soon, like it did in the crisis of 1980. Bernanke was one of the economists that believed the problems on the subprime sector, mainly on the housing market, would be limited to that specific market and spillovers wouldn't emerge throughout the rest of the economy, or to the financial market (Hummel, 2011).

Case and Shiller (2004), show the real motives for families to buy a house and the onset of the bubble. The first motive was that families regarded housing as an investment, families regarded future prices instead of the pleasure of occupying the home, in this case if the investment motive weakens, the market has a tendency to crash. The second motive was related to exaggerated expectations, excitement and word of mouth. People thought the future prices of homes would increase by more than 10 percent in a year over ten years. The third motive was caused by popular theories or stories about speculative price movements, here what was worrying was that homeowners did not perceive they were in a bubble. The fourth motive was related with popular themes in interpreting recent price movements, the most important theme here was low interest rates that since 1995 were contributing to the increase in housing prices. The fifth motive was related with the stock market boom and bust of 2003, people thought the refuge for stock market investors would be real estate and in a way they were right, it increased even more the prices of houses. The sixth motive had to do with houses that were sold above the asked priced in some states, people thought they could only charge more than they initially asked. The last motive was people's perception on how to react if the house prices suddenly dropped, their initial answer was to wait until the demanded price was met, and only in a last resort they would lower the prices.

These motives were the perfect ingredient for the collapse of the real estate market.

Illustration 10: Home Values (1890 – nowadays)



Source: Adapted from "*Irrational Exuberance*" by R. Shiller, 2006, New York: Broadway Books. Copyright 2005 by Robert J. Shiller. Retrieved from Randolfe (2006, December 6)

To avoid the recession of 2001 the Fed believed that increasing liquidity was the answer, so still in 2000 Fed reduced interest rates, and federal funds effective rate were reduced by almost five percent from 2000 to 2004 reaching 1.35 percent. Federal funds were only adjusted in 2007 to 5.02 percent. The rate of mortgages were also adjusted, the 1st year adjustable rate mortgage fell from 6.93 percent in 2000 to 3.2 percent in 2003 and it similarly of what happened with federal funds, mortgage rates were only adjusted in 2007 to 5.51 percent. (Kraner, 2010).

These adjustments are linked with the nomination of Ben Bernanke as chairman of the Fed Board in 1 of February of 2006. It was right before the crisis began. In the fall of 2007 the subprime mortgages were already a serious problem to the economy, the defaults on mortgages were causing serious systemic effects. It took too long for the Fed to realize the economy needed an adjustment.

So, the rise in interest rates in 2007 was the cause of so many mortgage defaults. Mortgages with adjustable rates were seriously penalized, since there

was a huge rise in interest costs. Subprime borrowers were penalized just as much since the defaults caused illiquidity (Kraner, 2010).

3.2 Consumption Versus Debt

In the beginning of the 21st century the leverage of consumption was off the charts. This is well shown, if we compare wages with consumption, or else how could the large increase in consumption be explained if the wages in the last decade had only a slight increase? The ratio of debt to wages was in its all-time record when it doubled from 0.6 to 1.2 with most of its increase in the period of 2000 to 2007 (Jagannathan *et al*, 2009).

Even though wages/salaries were falling, that didn't stop families from increasing consumption. The consumption continued to increase since families felt wealthier, the increase in asset values, securities and real estate prices made them feel this way. The average US citizen only felt the actual drop in salaries and wages when the Dow Jones dropped in 2007 showing that there was a limit to the gains of the stock market. With the loss of the stock market, the asset prices also dropped, families felt for the first time in a decade that they had to moderate their consumption and increase their savings (Schlenkhoff, 2009).

To understand what led people to react like they did, Friedman developed his theory of consumption back in 1957. His theory studies the relationship between consumption and long-term income expectations. The theory rejects the hypothesis of changes in consumption patterns due to short term changes in income. On the other hand, the theory attributes great importance in the propensity to consume when there is a change in the value of consumer assets, it doesn't matter if they are physical such as securities or property and human such as education and experience (Schlenkhoff, 2009).

Jagannnathan *et al* (2009) used the income hypothesis to explain how the increase in real estate wealth would alter the consumption patterns. What he realized was that real estate was seriously leveraged and when there was an increase of 1 USD in the value of real estate the consumption would increase by 8.4 USD, while other financial assets would have no effect on consumption.

The overconfidence on highly appreciated home values increased substantially the consumption, which in turn increased the current account deficit. To even the account balance foreign capitals were being directly injected into home mortgages increasing even more house prices, this tendency took a

while until finally the market realized it wasn't a sustainable model (Jagannathan *et al*, 2009).

3.3 Financial Institutions and Financial Engineering

Although families have their share of guilt for being irresponsible to the point where they reached a level of debt they could never afford, other institutions also have their share of guilt. Financial institutions, rating agencies, government sponsored enterprises and such were equally or even more responsible for the crisis US and the rest of the world has been living. The easiness and complacency of these institutions have created an ambience were families have become irrational to the point where they didn't even bother thinking on how they were supposed to pay the debts they were contracting. Together with the government and the market regulators inaction, it was created the perfect set for another economic collapse (Kraner, 2010).

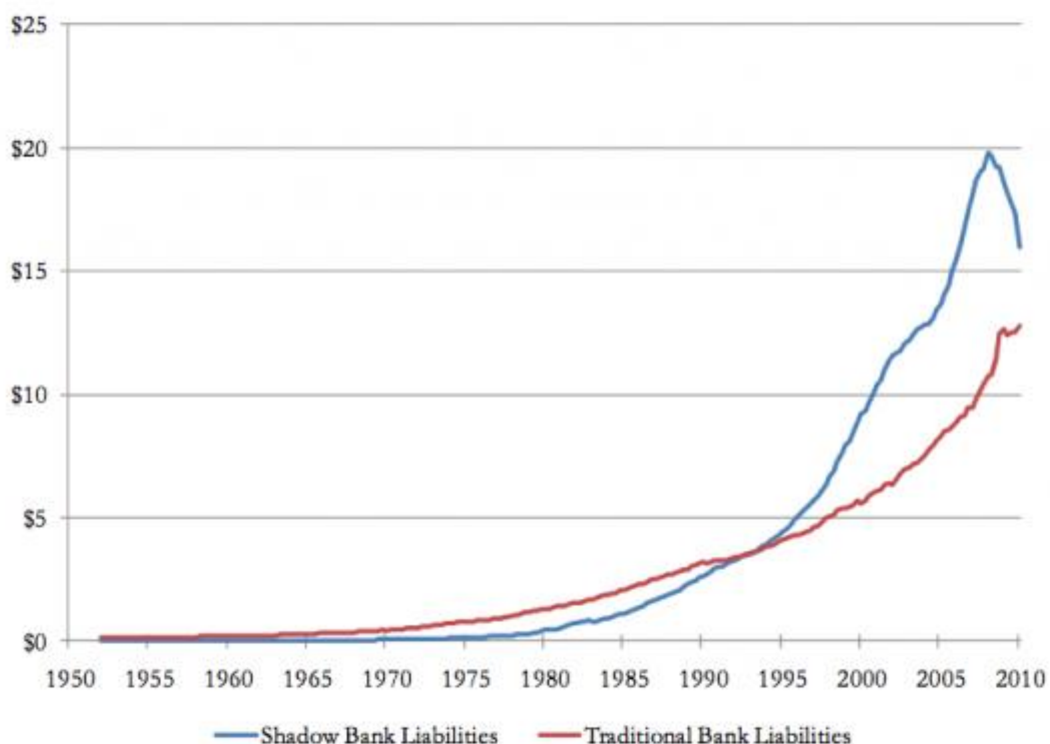
The first phase of the economic collapse was somewhat unpredictable since it started in a small segment of the U.S. financial system, that sector was the subprime residential mortgages. In this first phase, which lasted from August 2007 to August 2008, there was little change in financial markets, and although a mild recession was predicted real GDP continued to rise until the second quarter of 2008. The Congressional Budget Office in one of its budget and economic outlooks defined the recession as a previous mild recession and that unemployment would only rise modestly from 5.4 percent in 2008 to 6.2 percent in 2009, they also believed the GDP would continue to grow at a shy rate in 2008 and in 2009 things would go back to normal. The second phase started in September 2008, at this time the crisis was getting critical, the Lehman Brothers declared bankruptcy on September 15, the AIG (American International Group) insurance firm collapsed the day after, on the same day the Reserve Primary Fund monetary market was overrun, and alongside with what was happening still the government wanted to pass the TARP (Troubled Asset Relief Program) (Mishkin, 2010).

The crisis started in the subprime real estate residential mortgages because US current account deficits were reaching record levels, with more and more foreign savings willing to buy US's debt. The preferred type of financial instrument was fixed income markets which lowered yields on Treasuries. With the lowering of Treasury yields, investors were looking for a more profitable instrument, so they focused on higher yields and lower risk alternatives, especially MBS (Mortgage Backed Securities). With the excess in demand of lower risk investments, financial innovation and regulatory arbitrage had to keep

up with the times, and so the securitized banking system (shadow banking system) was created (Jagannathan *et al*, 2009).

The Shadow Banking system included all sorts of financial institutions such as investment banks, insurance companies and managed funds which included hedge funds, SIV's (Structured Investment Vehicles), money market funds, ABCP (Asset-backed Commercial Paper) and others. This type of institutions operated in a way that seriously leveraged and brought even more risk to the economy. The way these institutions could get around regulatory requirements was by using credit risk transfer mechanisms (Kraner, 2010).

Illustration 11: Shadow Bank Liabilities vs. Traditional Bank Liabilities, $ trillion



Source: Retrieved from "*What Has – and Has Not – Been Learned about Monetary Policy in a Low Inflation Environment? A Review of the 2000s*." by R. Carida, 2010, Paper presented at the Boston Federal Reserve Bank

The most common set of tools these institutions used were mortgages. This type of tool aided them to create diversified pools of assets, because mortgages could be financed by short term debt and sold to investors. Although the speculation derived by those institutions was destroying the economy there was one factor that would help them leverage even more the economy. Assets with high demand could be rehypothecated with low margin requirements due to the

low risk of the underlying assets. This kind of behavior was fueling even more the real estate market prices (Jagannathan *et al*, 2009).

3.4 Securitization of mortage backed up by Rating Agencies

The overconfidence lived by the housing market was very present at the time, since US didn't have a nationwide collapse off the housing prices since the Great Depression. That feeling and the diversification logic of rating agencies permitted the creation of risk-free assets which were generated by tranching pools of risky individual mortgages creating "private label" ABS (Asset Backed Securities) (Jagannathan *et al*, 2009).

According to Kraner (2010) this type of security changed completely how the system operated. Before this change in housing markets, a person who wanted to buy a house would usually recur to a mortgage originator to apply for a loan.

The mortgage originator would ask for the person to provide financial information and to pay an application fee. With the information of the costumer the mortgage originator extracts two variables which will allow him to check the risk of the applicant. These two variables are the PTI (Payment-to-income) ratio and the LTV (Loan-to value) ratio. Once the loan is approved by the mortgage originator, he sends a letter of commitment to the applicant showing the various types of mortgages the applicant could choose:

- Prime
  - FMR's (Fixed rate mortgages) – the borrower repays interest and principal in equal installments;
  - ARM's (Adjustable rate mortgages) – interest rate is linked to an index that reflects short-term market rates;
  - Hybrids – combination of the previous two. (Most Common type of mortgages and they present this kind of configuration 2/28 or 3/27 with the first indicating the years the mortgage rate remains fixed, and the second number indicates the years were the mortgage interest rate will be floating.)

- Non-Prime
  - Subprime Loans – the credit score of the borrower is low and so the rate is much higher than for prime loans;

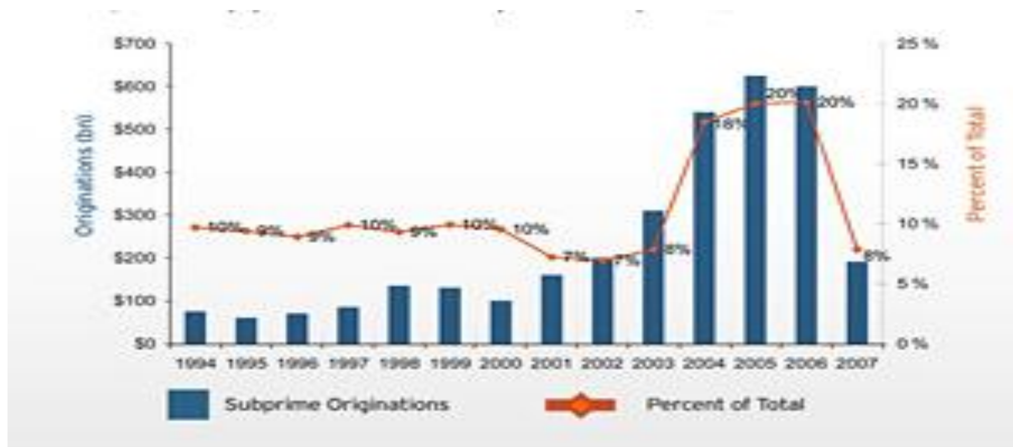
- Alt-A loans – riskier than prime loans but less risky than subprime loans, they are mortgages who lack the criteria to be qualified by government sponsored enterprises;
- HEL (Home equity loan) or HELOC (Home equity of credit) – second-lien loan.

Before the mortgages could be transformed in ABS, the mortgage originator had two options: hold the mortgage in his portfolio or sell the mortgage to an investor. With the ABS the mortgage originator faced two other options: keep the mortgages as collateral for the issuance of a security or sell the mortgage to an investor that will place the mortgage in a pool of mortgages that in turn could be used as collateral for the issuance of a security. Washington thought that the junction of mortgages creating derivatives was a way to reduce the risk, since there was a perception that homeowners would default on mortgages randomly and independently (Kraner, 2010; Temin, 2010).

> Combining mortgages into tranches, banks could separate the safe part of mortgages from the risky parts without knowing which mortgages would be defaulted – just as banks do not know which deposits will be withdrawn but can safely assume that only a fraction will be withdrawn at any given time (Temin, 2010, p.6).

Because housing prices were rising throughout the 1990’s and early 2000’s ABS markets had steadily increased, and in the end of 2001 until 2006 this market reached a share of around 50%. With the increase in demand of these securities the market couldn’t keep up producing the AAA rated securities (highest possible rating assigned to the bonds of an issuer by credit rating agencies), and so it turned to the more risky mortgages (non-prime) like the subprime mortgages, Alt-A and home equity mortgages. The market started to erode its standards creating risky securities. Subprime mortgages began to flood the market. Most subprime mortgages were hybrid and the fixed interest rate was intended to function like a “teaser”, when the fixed exchange rate reseted, the rate would go up by a significant amount which would give borrowers an incentive to refinance. All was going well as long as houses would keep appreciating in value (Jagannathan *et al*, 2009).

Illustration 12: Subprime Mortgage Origination – Subprime mortgage volume and % of total originations 1994-2007



Source: Retrieved from “By the Numbers”, by CNCB – Boom, Bust & Blame, The Inside Story of America’s Economic Crisis (n.d.)

As it is well shown in the upper figure, the housing boom burst in 2007 which led to a great extent of mortgage defaults. The idea that defaults would only occur randomly and independently has turned out to be false. Has the perception of the risk of derivatives invaded investors’ minds, the buying of derivatives halted, and credit markets seized up. This was the start of the financial crisis (Temin, 2010).

3.5 The Beginning of the Financial Crisis

The beginning of the financial crisis is often dated to August 7, 2007, it was the day when the BNP Paribas (French Global Bank – Banque National de Paris) suspended redemption of shares in some of its money market funds. This situation was forced by the decline in housing prices, which in turn caused mortgage-backed financial securities to start having huge losses. In 2008, these losses were of about 500 billion dollars. (Over the cliff) Shadow banking system was the “core of what happened” according to Krugman. At one point, the shadow banking system expanded in such a way that managed to rival or even surpass the conventional banking in importance but nothing was done to avoid the financial vulnerability that was emerging (Schlenkhoff, 2009).

Risk aversion started to spread first within banks and then to the general population. The subprime crisis turned investors more wary about their decisions and the lack of detailed information on the risks of bank portfolios turned the investors to treat all banks as riskier instead of discriminating

between banks. A run on the banks started, although this wasn't a normal run, this time the target was the shadow banking system. The shadow banking system recurs to short term liabilities, like repurchase agreements (or repos), which in turn are indexed to longer-term assets like mortgage backed securities that function as collaterals. The borrower usually asks for collateral bigger than the loan on what is called a "haircut". When mortgage backed securities began to fall, there was a climate of uncertainty on how they would evolve, borrowers started to take cautions by increasing the so called "haircut", sometimes they could reach 50% or more as it is shown in the table below. The behavior led to a deleveraging which in turn led financial institutions to sell off their assets. While financial institutions were obliged to sell their assets a loop was created, the decline in asset values due to the "fire sale" lowered the collateral's values increasing uncertainty which led to larger increase on "haircuts", and the loop started all over again (Eichengreen, Mody, Nedeljkovic & Sarno, 2009; Schlenkhoff, 2009; Mishkin, 2009).

Table 5: Increase in "haircuts" 2007-2008

Type	Guess at Share of collateral	Rough haircut April '07	Rough haircut August '08	Contribution to liquidity hit
US Treasury	24.0%	0.25%	3.0%	5.96%
Investment grade bonds	17.1%	1.5%	10.0%	**12.38%**
High Yield	4.1%	12.5%	32.5%	5.37%
Investment grade CDS (Credit Default Swap)	3.4%	1.0%	5.0%	1.21%
Senior leveraged loans	3.4%	11.0%	17.5%	1.66%
Mezzanine leveraged loans	0.7%	21.5%	35.0%	0.55%
AAA CDOs (Collateralized Debt Obligation)	2.7%	3.0%	95.0%	**11.14%**
AA CDOs	0.2%	5.5%	95.0%	0.66%
A CDOs	0.2%	11.5%	95.0%	0.69%

BBB (etc) CDOs	0.2%	15.0%	95.0%	0.53%
CDO Equity	0.1%	50.0%	95.0%	0.16%
AAA CLO	4.5%	4.0%	15.0%	3.94%
Prime MBS	30.8%	3.0%	15.0%	**29.96%**
ABS	8.6%	4.0%	55.0%	**25.79%**
Totals	100.0%			100%

Source: Retrieved from "Revisiting Rehypothecation: JP Morgan Markets Its Latest Doomsday Machine (or Why Repo May Blow Up the Financial System Again" by Y. Smith, 2011, December 15 [Web log post]

Some financial institutions were not prepared for what was happening, and the mentality of the expression "too big to fail" was about to be tested. In March 2008 it was Bearn Sterns the first to succumb to the runs on the shadow banking system. Bear Sterns reached a point where the only assets that remained were the long-term assets and those would take time to be turned to cash at a fair price, Bear Stearns couldn't stand by itself any longer. Securities that were once thought to be risk free were now toxic assets as they became harder to sell. The Fed in a desperate measure to avoid panic brokered a deal for J.P. Morgan/Chase to purchase Bear Sterns, the deal was concluded but the Fed had to take Bear Sterns toxic assets that amounted to 30 billion dollars. This rapid action from the Fed permitted investors to soothe their expectations. Doing so, the Fed thought the crisis was contained and that they should be aware of inflation any time soon (Mishhkin, 2009; Temin, 2010).

They were wrong.

According to Temin (2010), in August of 2008, the Fed realized the crisis wasn't over as they also had to take over the two quasi-governmental mortgage brokers, Fannie Mae and Freddie Mac. Even at this moment public figures were declaring that the problem was the housing sector.

Again in September 2008 the Fed was called to act, now it was Lehman Brothers turn to be experiencing major difficulties, but this time the Fed wasn't there to help. Lehman Brothers failure was a mark for the population which indicated that banks were taking more risks than they used to. The risk aversion started to increase exponentially, the Fed couldn't help the panic. Lehman Brothers was US's fourth largest investment Bank by asset size with over 600 billion dollars in assets and 25 000 employees. This was the biggest bankruptcy that US experienced and the mentality of "too big to fail" fell to the ground. The Fed couldn't find a buyer for Lehman Brothers, and so their explanation for Lehman's collapse was that it had taken large risks and it had to pay the price

for its choices. The downward movement had started, the uncertainty led to a mass selling of securities, which led to a drop in asset prices and led banks to struggle for liquidity. What happened next was somewhat inevitable, AIG collapsed on the same month, and the only way the Fed found to revert the situation was to nationalize the insurance company. The crisis had infected all the financial market, and the nationalization of AIG only confused the market. In the same day of AIG nationalization, the Reserve Primary fund was overrun and the TARP was set in motion (Mishhkin, 2009; Eichengreen *et al*, 2010; Temin, 2010).

TARP was set in motion to avoid financial institutions to file for bankruptcy, taxpayers money was avoiding a collapse of the financial system. The banks that were saved were once again deemed “too big to fail”. The TARP also intended to protect home values and homeownership. These goals were a wreck, 700 billion dollars have been gathered to buy mortgages, those mortgages were to be modified to help homeowners avoiding foreclosures. Instead the money was infused into the nation’s largest financial institutions, with no policy, no requirements nor a bank report whatsoever that obliged those institutions to compel the extension of credit. Therefore it was no surprise that lending continued to decline (Barofsky, 2011).

The Home Affordable Modification Program included in the TARP was a greater disappointment. The program consisted in modifying existing mortgages to help four million families. The rush to get the program started, has created innumerous flaws and foreclosures continued to pile up. Another measure of the TARP was to assure that large banks would be regulated to diminish their threat to US financial system, and like Sheila Bair advocated the objective was to simplify or shrink the most complex financial institutions, instead the biggest banks grew larger 20% than they were before the crisis (Barofsky, 2011).

Barofsky (2011), being the special inspector general for the TARP from 2008 until now, expresses his analysis of the TARP as follows: “In the final analysis, it has been Treasury’s broken promises that have turned TARP — which was instrumental in saving the financial system at a relatively modest cost to taxpayers — into a program commonly viewed as little more than a giveaway to Wall Street executives.”

TARP’s main goals were not obtained due to mismanagement and disregard of its primary goals. The government lost is credibility and it will be extremely hard for future policymakers to regain that credibility again and to do what they must to avoid another crisis. Barofsky (2011) believes that “This avoidable political reality might just be TARP’s most lasting, and unfortunate, legacy.”

3.6 Banking System Versus Shadow Banking System

Policy makers are the main responsible for the banking fragility, the encouraging of the housing boom, the excessive leverage, and the collapse of the subprime bubble. This was only possible through loose monetary policy, fiscal and the lack of regulatory policies (Grossman & Meissner, 2010).

According to Schlenkhoff (2009, p.37) the first mistake that ultimately led to the Financial Crisis was the lack of regulation on the shadow banking system. Krugman believed the way to prevent this situation was to create a simple rule which was "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", but what could be done now to remedy what was already done?

This time it didn't matter if the institutions were "too big to fail", if they were heavily branched, or highly concentrated banks, the crisis didn't spare even those. The banking system was severely unregulated (Grossman & Meissner, 2010).

Instead of creating regulations and rules for the banking system, what actually happened was quite the opposite. In 1999, instead of limiting the operation of the shadow banking system, the banking legislation was changed. Even legislation that came since the Great Depression had changed. The Glass Steagal Act was abolished due to the Congress debate of 1987 where it was argued that commercial banks would seek low risk opportunities, they were dead wrong. The separation between the roles of commercial banks and investment banks was dimmed in a way that permitted commercial banks to participate in operations that were exclusive for investment banks that were riskier. Investment banks felt they had to differentiate from commercial banks and the best way for them to differentiate was to take even more leverage and risk on their investments (Kraner, 2010; Schlenkhoff, 2009).

The creation of the shadow banking system permitted a great financial innovation. The system included investment banks, insurance companies, but the innovation was created especially around managed funds. These funds included hedge funds, money market funds, SIV's, ABCP and more. The most common way for the shadow bank to operate was to remove some of their investments from the balance sheets by using ABCP or SIV's conduits, this way banks would provide liquidity and credit enhancements to these conduits. Banks would have capital relief by switching from loans into investments in the form of AAA-rated tranches of CDO's and CLO's (Collateralized Loan Obligation). The AAA securities would stay on the banking system (Kraner, 2010; Schlenkhoff, 2009).

The innovation could be salutary to the economy, but the lack of understanding, regulation, in summary, the lack of control of the financial sector has permitted the financial innovation to become a way to conceal the risk. Instruments like SIV's were removed from the balance sheet, but the liabilities stayed within the bank. Without the understanding of the systemic risk embedded in financial operations, the financial system had become seriously weakened in such a way that a simple blow would evolve and reveal its fragilities (Mishkin, 2010; Schlenkhoff, 2009).

To increase even more its fragilities it has to be said that the shadow banking system only had access to safety nets like deposit insurance back in 2008 (Kraner, 2010).

3.7 The Federal Reserve and Government Role

Although the government shouldn't be blamed by the choices of homeowners and investors that ultimately led to the subprime crisis, they should be blamed for creating ways that guaranteed financing to families with high risk of default. The way for the government to guarantee the access to finance for those families was through Government-sponsored enterprises. The three GSE's (Government-sponsored enterprises) were: The Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac); and the Federal Home Loan Bank (FHLB) which was composed by 12 regional banks (Jagannathan *et al*, 2009; Kraner, 2010).

The role of Freddie Mae and Freddie Mac consisted in two lines of business:

> The first, was the securitization and guaranteeing of conforming prime mortgages which required a relatively low level of capital reserves (2,5% was mandated) given the high quality of collateral (the federal government providing the ultimate tail risk insurance). The second line of business was the retained portfolio of investments in MBS which was allowed under the charter as long as the tranches purchased satisfied the 80% LTV requirement (Jagannathan *et al*, 2009, p. 26).

To continue lending these GSEs have bought a high amount of Alt-A subprime mortgages. In 2007 the GSEs investments in subprime markets totaled 10% of the entire non-prime market. This attitude had no appropriate regulation from the government and therefore has contributed for the systemic risk of the system which in turn contributed to the financial crisis (Kraner, 2010).

Table 6: Prime VS Nonprime Mortgages, 2001-2006 (in Billion $)

Year	Nonprime	Prime	Total	Nonprime	ARMs
2001	310	1905	2215	14%	355
2002	422	2463	2885	15%	679
2003	615	3330	3945	16%	1034
2004	1070	1850	2920	37%	1464
2005	1370	1750	3120	44%	1490
2006	1430	1550	2980	48%	1340

Source: Adapted from "*Causes of The Great Depression and the Great Financial Crisis*" by S. Kraner, 2010, pp. 36. Diploma Thesis Unpublished, Fakulteta Za Management Koper of Univerza Na Primorskem, Koper

GSE's could lever up to 40 times, which allowed them to take gigantic proportions and on the brink of the crisis in 2007, their portfolios amounted to a trillion dollars. GSE's were the largest subprime investors (Jagannathan *et al*, 2009).

Ben Bernanke has become chairman of the Fed Board on February 1, of 2006, a year before the start of the financial crisis. Bernanke being a scholar of the Great Depression took immediate measures to prevent the crisis from reaching a point of no return (Hummel, 2011).

One of the lessons learned from the Great Depression was that the Fed has the tools to reflate the economy and prevent inflation. Until 2008, the Fed was worried about inflation and so its policies consisted in sterilizing the effects on the monetary base of its diverse liquidity operations, this kind of behavior made monetary policy tighter and increased the effect of the recession which started in December 2007. In October 2008, the Fed's monetary policy changed. (Bordo & James, 2009).

Bernanke was focused on avoiding another Great Depression at any cost, he was taking experimental measures to find which ones would work for the current crisis (Mishkin, 2010).

The first measure was using plain and simple monetary policy, in September 2007 meeting, the Fed lowered its federal funds rate target from 5,25 percent to 4,75 percent. In April 2008 the rate was down to 2 percent, the downward movement led the rate to fall even further and by December 2008 the target range of federal funds rate reached 0 to 0,25 percent. In mid-August 2007 the Fed has also lowered the discount rate to 0,5 percent but this measure would only improve liquidity to banks since by tradition only banks would use discount lending. Recurring to discount lending would raise questions to the bank's health since it was regarded as a sign of lack of liquidity (when banks don't have anywhere else to turn). To avoid this kind of thought the Fed created the

TAF (Term Auction Facility), this would allow banks to borrow anonymously (Bordo & James, 2009).

The TAF now offered additional funds to banks for periods up to 84 days, when at first was only for a few days. The TAF worked as an auction. The Fed sets the amount to be lent and the banks would bid for the interest rate. These actions would greatly improve liquidity, if there was nothing else to it. With these kind of policies Bernanke was giving with one hand and taking with the other by selling Treasury securities, in the end of August 2008, the monetary base increased only by 2.24 percent against 7.54 percent average annual growth during Greenspan's mandate (Hummel, 2011).

The TAF was working as intended since it helped to lower interest rates, improve the performance of the dollar swap markets and to lower interbank risk premiums (Mishkin, 2010).

Even before the federal funds rate reached 0, the Fed tried nonconventional methods to loosen up the monetary tightening. They achieved that by purchasing long-term Treasuries and mortgage backed securities. This measure provided liquidity for banks and financial institutions alike. The Fed also expanded the types of securities that served as collaterals (Bordo & James, 2009; Mishkin, 2010).

One of the problems the Fed faces will be when the incentives to increase the liquidity need to be tightened, if the unemployment is still high there will be political pressure to stop the tightening. In this case the Fed will have 2 options, if the Fed will fall under the pressure and stop the tightening the unemployment could fall but the belief in its policies will be shaken which would result in inflationary pressures. On the other hand if it continues its policies of tightening, unemployment will naturally rise (Bordo & James, 2009).

According to Bordo this wasn't the best way to solve the situation at hand. With the uncertainty shock generated by the bankruptcy of Lehman Brothers (uncertainty increased by 0.94 percent from September 2009 to October 2009, it was the largest increase since April 1934), the reaction of monetary and fiscal policies reduced by more than half. So the Fed:

> Emphasized on providing liquidity to the market when that is not the answer to the problem of the market's uncertainty about solvency of individual or sectoral firms. No financial market can function normally when basic information about the solvency of the market participants is lacking (Schlenkhoff, 2009, p. 46).

Bordo also disagrees with the method Bernanke used, he considers the method complicated when a different and uncomplicated model was available,

which was open market operations. Open market operations would leave "the distribution of liquidity to individual firms to the market". While with the model that was adopted the Fed could select the credit recipients (Hummel, 2011, p.502).

Romer (2009) doesn't share the same opinion as Bordo, she believes that the experience of the 1930's proved that monetary policy has an important role in recovery even when interest are close to zero. Monetary policy can prevent expectations of deflation as it was done during the Great Depression recovery. Monetary expansion has revived the economy by stabilizing American beliefs on price stability or even inflation in a period that was overrun by rapid deflation.

Although in the Great Depression US had its monetary policy restrained by the obligation of defending the gold standard, in this financial crisis US lives by the Bretton Woods II system. The Bretton Woods II surged when Bretton Woods collapsed in 1971. Like the gold standard the Bretton Woods pegged their currency to gold, but this time in Bretton Woods II it is the dollar that has become the reserve currency for international transactions (Schlenkhoff, 2009).

With the dollar functioning as a reserve currency it has become more and more attractive, so other countries could borrow US without any affrays. So when the "Cold War" ended US lost its position as the world lender, and China who ended being a loser in the cold war has become the primary lender of US propping its consumption (Temin, 2010).

The Asian crisis in 1997, made the emerging Asian economies extremely averse to the risk. The way they used to reduce the risk was to amass large sums of reserve currencies and to conduct a tight fiscal policy to avoid heavy fluctuations. With the dollar functioning as a reserve currency it has become more and more attractive, so other countries could easily borrow US dollars. (Schlenkhoff, 2009).

The lending US was receiving has influenced the current account deficits that ultimately brought the housing price bubbles and the unprecedented expenditure on financial instruments. (Jagannathan *et al*, 2009).

3.8 International Labor Shocks

According to Ohanian (2011) the Great Financial crisis suffers from exactly the same as the Great Depression which is the labor market dysfunction, leaving to second plan the role of the financial panics. Ohanian (2011) recognizes that capital market imperfections led to broader economic problems,

but capital deviations were too small (0,1 to 0,3 in US and high income countries) to suggest this was the main problem.

Ohanian's opinion is shared by other economists who believe that the fundamental cause of the crisis was the huge labor supply shock which led people to thrive for liquidity and money supply. The main cause for this shock had its origin outside US when a number of countries adopted policies that permitted them to enter the global markets, this created a surplus of labor force. The surplus of labor force coming from those countries caused the distortions US is experiencing today (Jagannathan *et al*, 2009).

Ohanian studied the variation of the labor markets, capital and productivity during the current recession and compared it with post World War II recessions variations. In his study he has figured that (has shown in the table below) although there was only a small deviation among the capital and productivity factors in US there was a huge deviation among the labor factor. The most noticeable way of showing that the main problem was the labor factor is by observing the reactions of the financial markets with the news of AIG and Lehman Brothers. Although the financial markets adjusted to these news by increasing 2,5 percent in Baa Bonds in late 2008, they readjusted again by dropping 3 percent. The labor hours worked in US didn't have the same faith and even in mid-2010 the recovery was somewhat short (Ohanian, 2011).

Table 7: Recessions Deviations in the US and Other Nations

	LABOR DEVIATION %	CAPITAL DEVIATION %	PRODUCTIVITY DEVIATION %
AVERAGE, OTHER POSTWAR RECESSIONS (US)	-2.4	1.8	-2.2
2007 – 2009 RECESSION (US)	12.9	0.3	-0.1
AVERAGE, OTHER HIGH-INCOME COUNTRIES	0.9	0.1	-7.1

Source: Adapted from "Accounting for the Great Recession" by L. Ohanian, 2011, *The Region*, 25 (2), pp. 47

In the table there is evidence of a large discrepancy of labor deviation between the countries with US being largely penalized with more than 12.9% compared with the 0.9% of the average of the other high income countries. In a well-functioning labor market the marginal product of labor should be the same rate at which the households are willing to trade their labor hours by leisure hours. The -12.9% meant that the population would rather work than to apply

their time in leisure activities. This created a surplus of work in the US (Ohanian, 2011).

According to Schlenkhoff (2009), the labor market dysfunction can be explained in part by the Bretton Woods II system. The periphery countries with an undervalued currency becomes export oriented and starts to accumulate a trade surplus, while the center country, in this case US, increases its trade deficit. China was one of the periphery countries that took advantage of its undervalued currency, the renminbi. The prices China was practicing has made some goods sectors unattractive in US, which led unemployment to increase in those sectors.

The peripheral countries such as China and India converted their massive population into a productive force the world has never seen in our modern days. This is still working brilliantly for those two countries. The World needs to adapt to this unexpected change in the World economy. When China opened to foreign investors in 1979, the huge overflow of underemployed labor to the manufacturing and industrial sectors changed entirely the world economy. In 1979, China had accounted for less than 2% of the world GDP and in 2007 that number has grown to a staggering 6%, becoming the third largest economy worldwide (Jagannathan *et al*, 2009).

China's transformations were only possible due to the changes in the costs of international trade, in an era for when a small disturbance in prices could increase/decrease cross-border transactions; the reduction on the prices of transportation costs, commercial policy variables, insurance costs, financing costs and more have completed the loop for China. China could now export all over the World maintaining the price attractiveness (Grossman & Meissner, 2010).

According to Jagannathan *et al* (2009), although China started without any technological know-how, the attractiveness of its economy brought a great number of foreign firms to install their plants there, which significantly boosted China's know-how. The final piece of the puzzle started in 1992, when the yuan was devalued by more than 30%. While the FDI (Foreign Direct Investment) was of about 1% of GDP before 1992, after 1992 it increased by more than 6%. All these measures had put China between the huge players of the World Economy, their net exports increased exponentially from 0% in the 1990's to around 15% of GDP in 2007.

In the U.S. we are stating the opposite the population is over-aging, mainly due to baby-boomers reaching their retirement age, creating a drop in labor input.

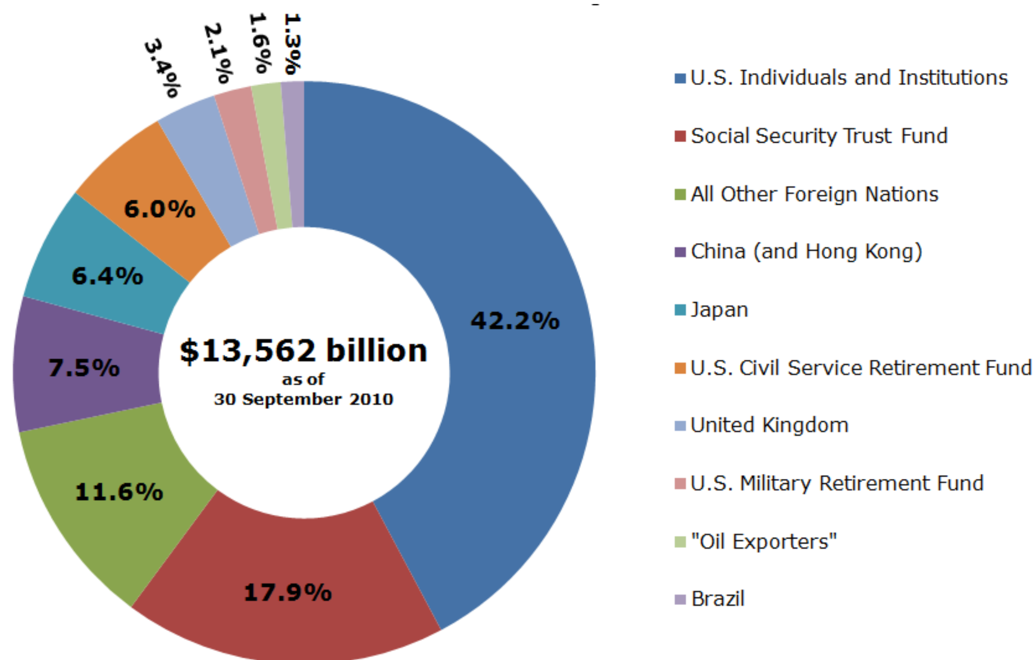
As Ohanian states "… the decline in economic output and income is due exclusively to a drop in labor input." (2011, p. 44). Also there was a decrease of

8.7 percent of per capita hours worked during this recession while in other postwar recessions the decline average was of only 3.2 percent. This led the labor input to be seriously compromised.

Another factor that makes China more attractive than the US is the fact that China doesn't have a Social Security System, reducing the costs of labor. Also, while US population has access to all sorts of credit, in China the population has to save for everything (cars, homes, retirement, etc). This system creates a surplus of money that in time is injected in the occidental countries that are avid for consumption (Jagannathan *et al*, 2009).

According to Schlenkhoff (2009), the pensions of the US retired population have to be financed by an increase in savings rate. It was in fact financed by an increase in savings, but in the place where it was the least expected. The increase in savings was made by the emerging Asian markets. It was expected that the drop in US GDP would push US households to increase their savings but US private consumption remained at 70% of GDP (Jagannathan *et al*, 2009).

Illustration 13: To Whom Does the U.S. Government Owe Money?



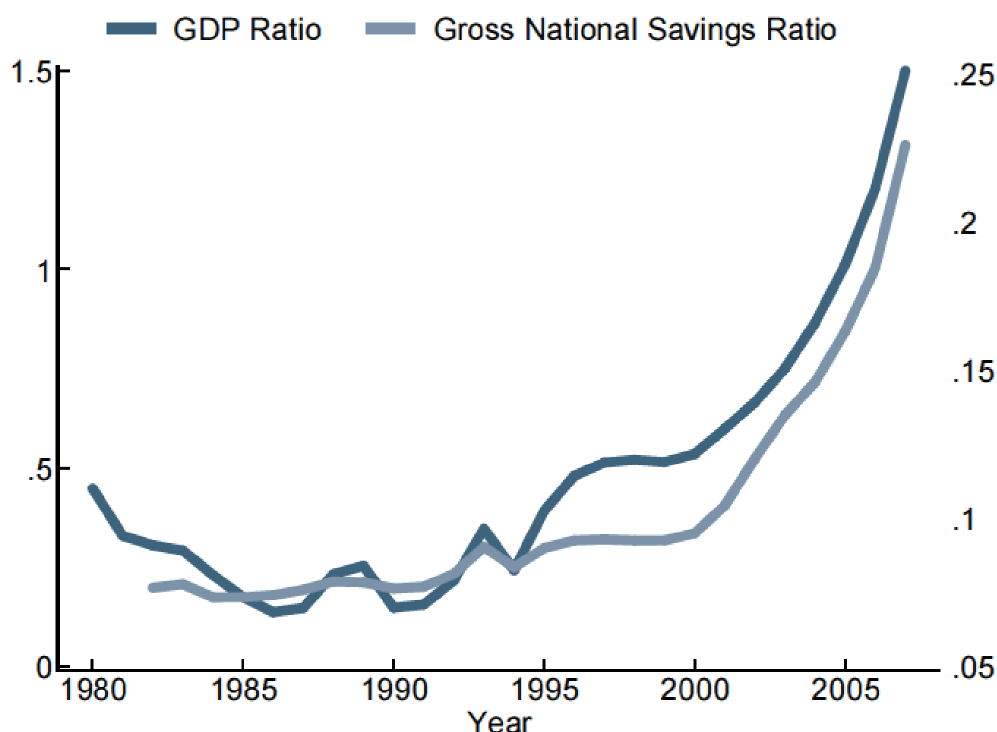
Source: Retrieved from "To Whom Does the U.S. Government Realyy Owe Money?" by C. Eyermann, 2011, March 11 [Web log post]

China is by far US biggest foreign lender, but the graph shows that US' public debt is mainly held by Americans through the Social Security Trust Fund, Pension Funds, US Fed and other US entities.

Like Bernanke states in 1997 the markets started a "global saving glut" with the growing scariness of the financial markets, but what finally destabilized the global markets was the Asian Financial crisis in 1997. The Asian markets with a huge surplus of incoming money started to conduct a policy of savings together with a fiscal policy in order to prevent heavy fluctuations from the currency markets (Schlenkhoff, 2009).

The Chinese intentionally devaluated their currency in order to maintain the competitiveness of their export sector, and thus constraining its domestic consumption. The consumption of China's households was somewhat limited, with consumer loans constituting less than 12.5% of all bank loans in 2007 with 80% of those 12.5% being for housing with an initial down payment of about 30%. With those policies China's savings increased to 130% of US savings in 2007 while a decade before they represented only a third (Jagannathan *et al*, 2009).

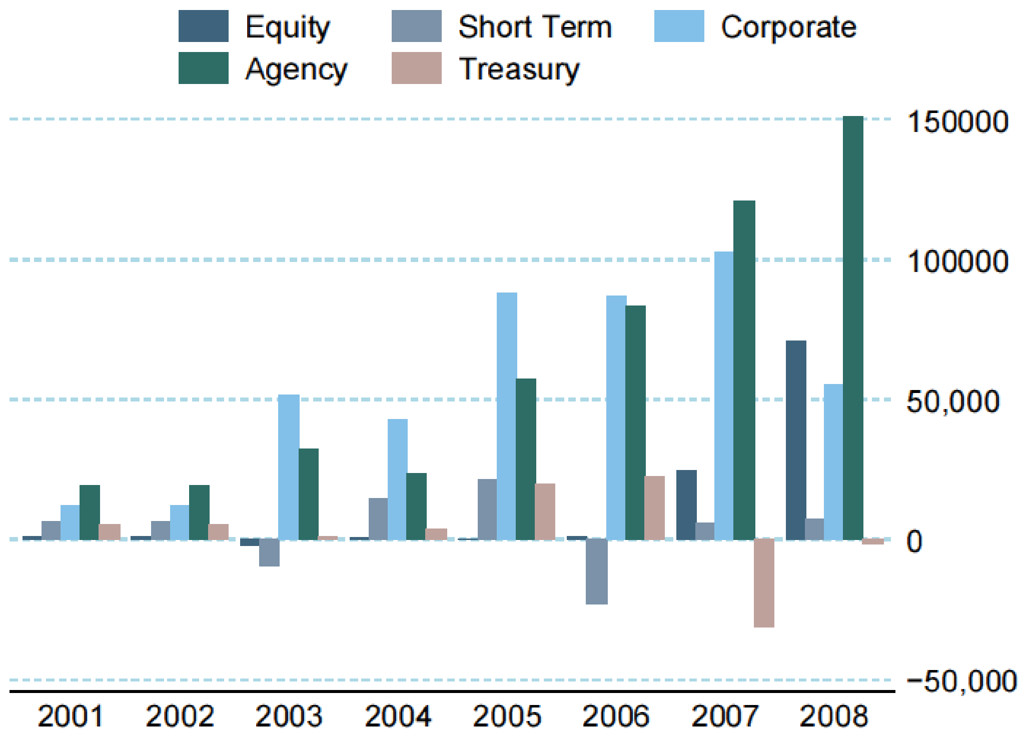
Illustration 14: The ratios of China and US Gross National Savings and Nominal GDP



Source: Retrieved from "Causes of The Great Recession of 2007-9: The Financial Crisis is The Symptom Not The Disease" by R. Jagannathan, M. Kapoor and E. Schaumburg, 2009, *National Bureau of Economic Research*, [Working Paper Nº 15404], pp. 9. Copyright 2009 by Ravi Jagannathan, Mudit Kapoor and Ernst Schaumburg.

According to Schlenkhoff (2009), China and other countries alike will continue to finance US economy, while it is still attractive. US economy continues to be a recipient of liquidity while the dollar continues to be the reserve currency of the world and while many commodities continue to be traded in dollars (Jagannathan *et al*, 2009).

Illustration 15: Change in Chinese holdings of US assets by asset class in US $M



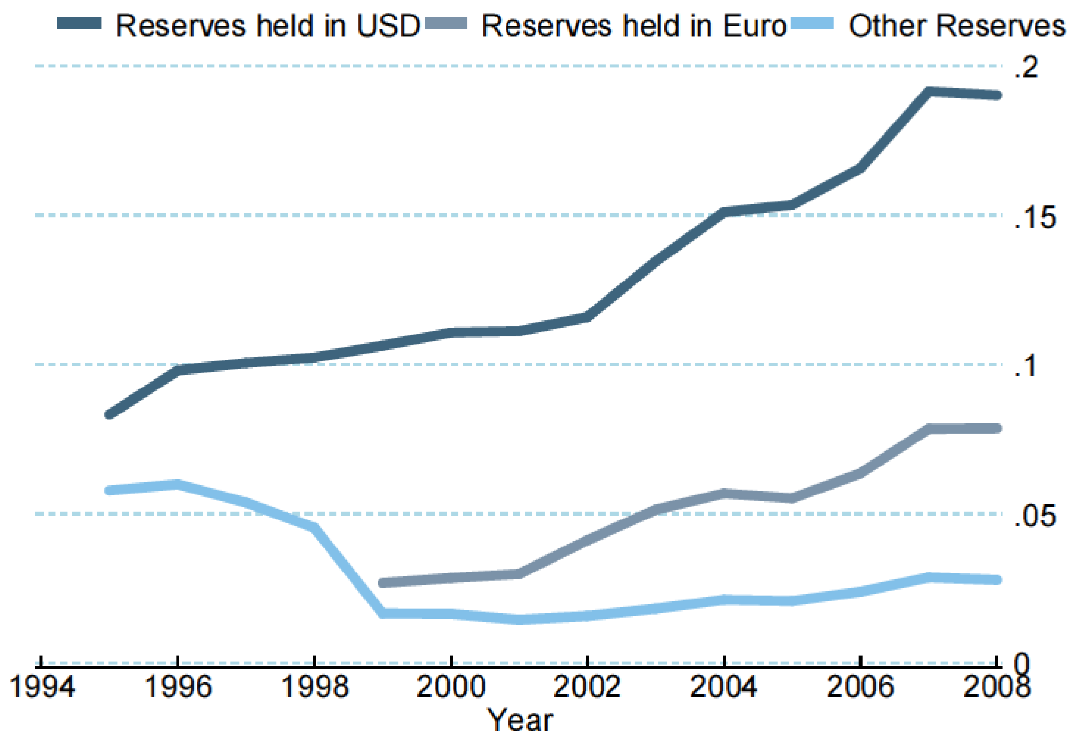
Source: Jagan Retrieved from "Causes of The Great Recession of 2007-9: The Financial Crisis in The Symptom Not The Disease" by R. Jagannathan, M. Kapoor and E. Schaumburg, 2009, *National Bureau of Economic Research*, [Working Paper Nº 15404], pp. 12. Copyright 2009 by Ravi Jagannathan, Mudit Kapoor and Ernst Schaumburg.nathan et al, 2009, p.12

Bear in mind that US economy is only attractive to a certain point and in time these countries will stop financing the high levels of US' consumption, but for now as the graphic above shows the financing continues to grow. (Schlenkhoff, 2009),

While the demand for reserves remains low relative to the size of the US economy this model will stand. The model will only loose its fiscal sustainability when the demand for reserves will grow to a point where it becomes too large and this will turn to a debt burden that would never stop increasing (Jagannathan *et al*, 2009). According to Schlenkhoff (2009), along with the

increase in savings in other countries, this will cause a reduction in trade which will cause a costly bill of shifting resources from export oriented sectors to sectors that produce goods for the domestic market and vice versa.

Illustration 16: Foreign holdings of Dollar as a fraction of US GDP



Source: Retrieved from "Causes of The Great Recession of 2007-9: The Financial Crisis in The Symptom Not The Disease" by R. Jagannathan, M. Kapoor and E. Schaumburg, 2009, *National Bureau of Economic Research*, [Working Paper Nº 15404], pp. 10. Copyright 2009 by Ravi Jagannathan, Mudit Kapoor and Ernst Schaumburg.

According to Jagannathan *et al* (2009), one of the ways to revert the situation is if the dollar declines substantially, or if the wages of Chinese workers that are related with export related activities will rise sharply. The other approach to stop the rising of capital flows to the US, is the rise in alternative currencies, with the Euro being the strongest candidate. The graphic above shows that since its creation the Euro has become more and more a currency of reference, and it will surely continue to increase in importance among the international markets.

3.9 Conclusion

Since the World War I the US was the World's main creditor and it has continued like that until the end of the Cold War. After the Cold War the US was greatly increasing its internal consumption. To keep the continuous increase in consumption the US had to be financed by other countries. The attractiveness of the American economy has guaranteed that the borrowing would continue. This way the US passed from the main creditor to a debtor position. The main creditor role has passed to China. That kind of consumption has led the US economy to develop at a staggering velocity.

The beginning of the 21st Century started with a mild recession caused by the exuberance of high tech purchases due to the beginning of the new millennium. When the year known as y2k passed, there was a massive sell off of high tech shares that were overpriced from the previous year. To stop the losses on the stock market, the Fed realized that the best way to do it was to lower interest rates.

The Fed didn't realize that by lowering interest rates, they would not only save the stock market from collapsing but they would also affect the population consumption in other areas.

The consumption of US families has increased at a very high rate even when the wages remained practically the same. From 2000 to the beginning of the Great Financial crisis in 2007 the ratio of debt to wages doubled.

The main responsible for this unmeasured increase in consumption were, without a doubt, the families that increased their debt more than they could bear, but the lack of regulation in the Financial System have created the tools for families to contract those amount of debts.

The lack of regulation has permitted financial institutions to create a significant amount of tools to guarantee liquidity.

The real estate market was regarded as a sure investment since there was no nationwide collapse of households since the Great Depression. Rating agencies had the same belief and so financial institutions could create the subprime market.

Before the mortgage market was rather simple, the homebuyer would just apply to a mortgage a rate was given by looking to its financial data, the more risky the homebuyer was the higher the interest. If the mortgage had low risk it would be classified as Prime and if the risk was high it was considered as non-prime. After the mortgage was secured the mortgage dealer had two options, keep it in his portfolio, or sell it to another investment. This way there was a share of the market that wasn't being fulfilled and for a good reason I might add,

that share was the non-prime market. Mortgage dealers thought they had created a way to dilute the risk of having non-prime investments in their portfolio. Now after securing the mortgage, the mortgage dealer had two more options: the mortgage could be kept as collateral for the issuance of a security or it could be sold as collateral for the same purpose. This type of operation was known as the ABS. To reach even more share of the market the securities started to become more and more riskier, since there was the perception that if one of the mortgages of that security went bust the others would compensate for that loss. The market was flooded by subprime mortgages. Mortgage dealers never thought the housing market could fail all together.

Ben Bernanke took charge of the Fed in February 2006, at this time his first objective was to control inflation at all cost, his policies were ineffective because financial institutions and government sponsored enterprises had all along the support of ratings agencies that masked what was really happening until it was too late. The real estate bubble had already been created.

In 2007, there was a considerable number of defaults in mortgages, but the Fed wanted to do some damage control. In a desperate manner the Fed wanted to prevent inflation, by increasing interest rates but defaults skyrocketed even more with Fed's decision.

The mortgages with adjustable rates were seriously affected by this measure.

The real estate bubble burst.

The decline on housing prices led the BNP Paribas to suspend redemption of shares in some of its money market funds, in 7 August of 2007.

The panic settled, and banks and families started to create a risk aversion especially towards the securitized markets known as the shadow banking system. The risk aversion has led the population to start runs on the shadow banking system, and the lack of information on the banks' portfolio has made everyone to consider them equal in terms of risk.

Bear Sterns was the first to experience difficulties but the Fed negotiated its purchase with JP Morgan, although it had to buy Bear Sterns toxic assets. The Fed thought they had contained the crisis when Fannie Mae and Freddie Mac, the two quasi-governmental mortgage brokers, showed their financial weaknesses in August 2008. The Fed took over these two institutions and the crisis was again contained.

In September 2008, the Fed blew all is efforts as it didn't find a solution for the bankruptcy of Lehman Brothers. The Lehman Brothers failure was Fed's message that banks were taking more risks than they should have. The lack of Fed's action in this situation has opened a Pandora's Box. Risk aversion

increased abruptly. The downward spiral was set in motion since it created a “fire sale” of securities that made financial institutions to struggle for liquidity.

A month later, Fed’s behavior was at least questionable when AIG Insurance Company was in financial distress by the same policy that was taken in the case of Lehman Brothers, it should suffer by its own mistakes. This time the Fed nationalized AIG which confused the markets.

In October 2008, Bernanke being a scholar of the Great Depression decided to prevent another Depression through sound monetary policy. He wanted to give liquidity back to the economy in a desperate maneuver to prevent the crisis. Lines of credit were open to banks to prevent other bankruptcies.

One thing that the US has on its side is that it isn’t linked to any fixed exchange rate and its currency works like the reserve currency of the world, as long as this stays the American economy will always be attractive.

CHAPTER IV

4 Great Depression versus Great Financial Crisis

The Great Depression is still the most severe, longest and broadest depression the World has ever seen, although there are events that can bring out the similarities between the Great Depression and the Great Financial Crisis.

The banking crises of the Great Depression and the Great Recession had similar beginnings. Both were originated by a boom-bust macroeconomic cycle. The Roaring twenties were followed by The Great Depression and the encouragement of the housing boom, excessive leverage and subprime bubble in the early 2000's created the Great Recession. The lax on regulatory structures of the 1920's and 2000's contributed to the magnitude of the Depression and the recent crisis (Grossman & Meissner, 2010).

There are at least four mistakes that originally created the Great Depression: Squeezing Liquidity, Wage inflexibility, Closing down trade and Radical ideologies, Government spending. In the Great Recession 3 out of 4 of these mistakes have been solved (McMahon, 2009).

4.1 Squeezing Liquidity

According to McMahon (2009), this mistake was the first to be interventioned during the recent Financial crisis, Bernanke has taken some serious efforts to inject liquidity into the economy. Some could say that the actions that were adopted were not perfect, but at least the Banking Panics of the Great Depression have been avoided.

The Banking Panics of the Great Depression still are the worst as well as the largest in economic history. Bear in mind that comparing the Great Depression policies to the ones adopted now it is not an easy task. In the recent recession, countries and central banks are more coordinated, there is no gold standard to restrict monetary policy. The figure of the lender of last resort did not exist in 1929 like it exists today (Aiginger, 2010). During the Great Depression there were no institutions to maintain financial stability and even where there was regulation and supervision, they were not effective. The deposit insurance did not exist (Grossman & Meissner, 2010).

According to Hummel (2011), Friedman and Schwartz the main problem of the US Banking system during the Great Depression started with the inept of Fed policy, with legal restrictions on the issue of money substitutes by private clearing houses. These policies have led the money stock to collapse. Between 1929 and 1933 the money stock collapsed to a staggering one third in M2 and

one-fourth in M1. Alongside with the fall in money stock there was also a downfall of the money's velocity. In summary, Friedman believes that the banking panics were generated by an enormous shock to aggregate demand (Hummel, 2011).

Bernanke shares a different opinion. In his article "Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression" he concludes that what caused the banking panics was a shock on aggregate supply, caused by the collapse of more than nine thousand banks. Banks were the main financial intermediaries and with their failure the credit flow collapsed with it (Hummel, 2011).

In 1927, the Fed decided to increase the discount rate from 3.8% to 5.3% in 1929 in order to reduce stock market speculation. The spread of the Great Depression has obliged the Fed to reduce the discount rate to values below the ones in 1927. In 1931 the discount rate was of 2.5%. Although it was too late, between 1929 and 1932 money supply has reduced by 21%, and the bank runs seriously affected the velocity of money. Money supply would only start growing again in 1933/1934 (Aiginger, 2010).

During the Great Depression the best way the Fed has encountered to fight financial panics was to create severely restrictive structural reforms which created a sort of financial lockdown. After 25 years of those reforms the system was crisis-free. It was only in the late 1960's and in the beginning of the 1970's that the regulatory system started to ease, and eventually the financial crisis reappeared. The current crisis was created by that ease on the lockdown (Grossman & Meissner, 2010).

According to Grossman and Meissner (2010), the lack of regulation of the risk management procedures and the regulatory system has created some banks that were considered too big to fail, and if a single large bank fails the panic can cause a monetary contraction. This is exactly what happened in December 1930 during the Great Depression when the Bank of US failed. Public's desire for currency-to-deposit ratio increased since depositors thrived to convert their deposits into cash (Grossman & Meissner, 2010).

The banking panic caused a decrease in M1 and M2 because the demand for currency and reserves increased. Friedman and Schwartz believe that if this bank could be saved the panic could somewhat be eased (Hummel, 2011). This time the Fed has taken serious measures to avoid a banking panic in some cases Governments have temporarily nationalized banks and manufacturing firms to prevent their collapse. These actions were only possible because monetary policy wasn't limited by the gold standard, and there was strong cooperation between countries, andno signs of hyperinflation in decades (Aiginger, 2010).

According to Hummel (2010), Friedman believes that in order to avoid financial panics there are two factors to consider: if the panic is originated by the money stock or if it is caused by the lack of financial intermediation. If the problem is caused by the collapse of money supply it can be solved by an injection of liquidity into the financial system avoiding a collapse on aggregate demand and price level. If the problem is caused by lack of credit then bailouts should be the answer. When conducting bailouts of financial institutions, there are some things to bear in mind for example, if the institutions are deemed insolvent by taking excessive risk, corrupt management or others reasons. If the institutions are deemed insolvent they should be permitted to go under that is as long as money and prices remain stable (Hummel, 2011).

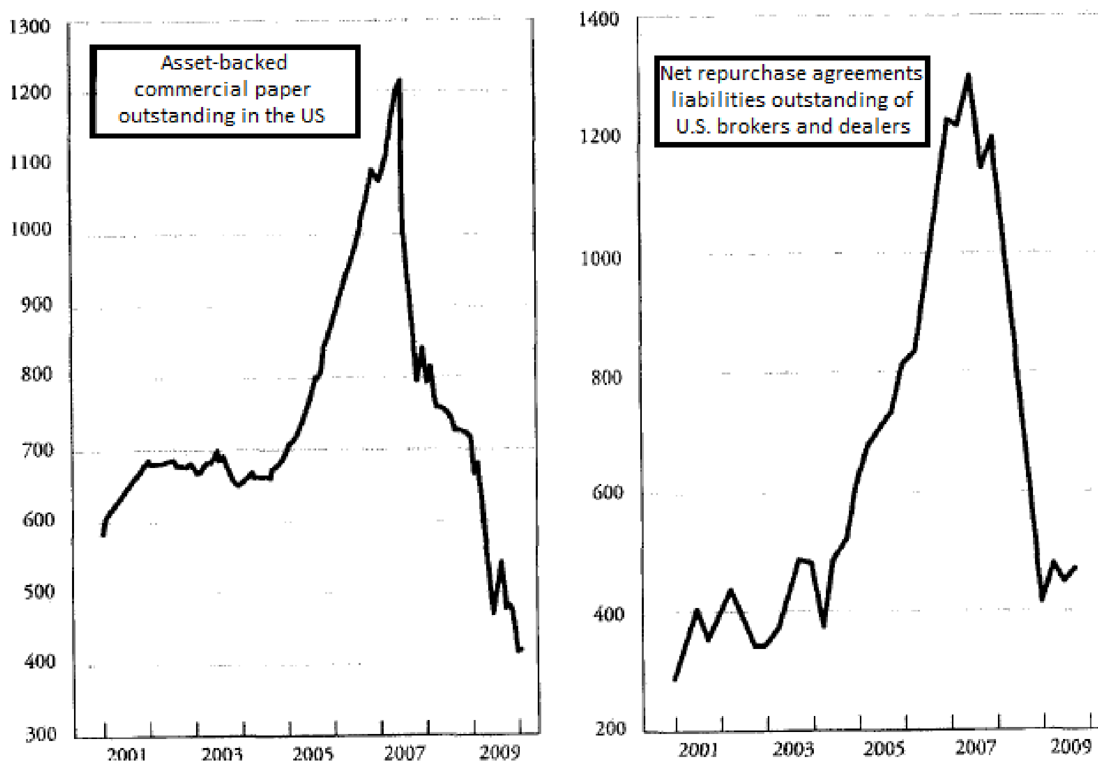
The financial panics of the Great Recession have brought back the reforms that followed the Great Depression. Secretary Timothy Geithner as revealed is thoughts saying that "the reforms that followed the Great Depression laid the foundation for decades of prosperity and led to one of the most-impressive records of investment"(Weidner, 2010, p.1).

The financial panics of the Great Recession started in August 2007 in the investment banking. Investment banks had changed abruptly in this century, while in the past they served as facilitators of financial securities' transfers, they can now own the securities themselves (Hummel, 2011). The financial reform of the 1990's has complicated the financial industry. The separation between commercial banks and investment banks simply disappeared. Investment banks could now merge with commercial banks (Weidner, 2010). The new rules have skyrocketed investment banks funds accounts from 500 billion dollars in 1994 to a staggering 3 trillion dollars while commercial banks had an increase of less than half from 4 trillion dollars back in 1994 to 11 trillion in 2007 (Hummel, 2011).

According to Hummel (2011), through repos investments banks were now extending its business to commercial banks and were buying short to lend long creating the "shadow banking system". What was even more troublesome was that the collaterals of the repos were usually treasury securities (safe collateral) but as the time passed by, the collaterals could be any marketable instruments, including complex securitized debt.

Commercial banks overnight repos were counted in M2 and later in M3, investment bank repos were never counted in monetary measures. When the Fed discontinued reporting M3 in March 2006, there was no way of knowing how big this market was. When mortgage market securities started to fall in late 2007 and in 2008, it led to a series of runs on financial institutions. These runs were different from the ones during The Great Depression. This time the runs were directed to the "shadow banking system". Repos fell abruptly and with them so did the money supply (Hummel, 2011; Mishkin, 2010).

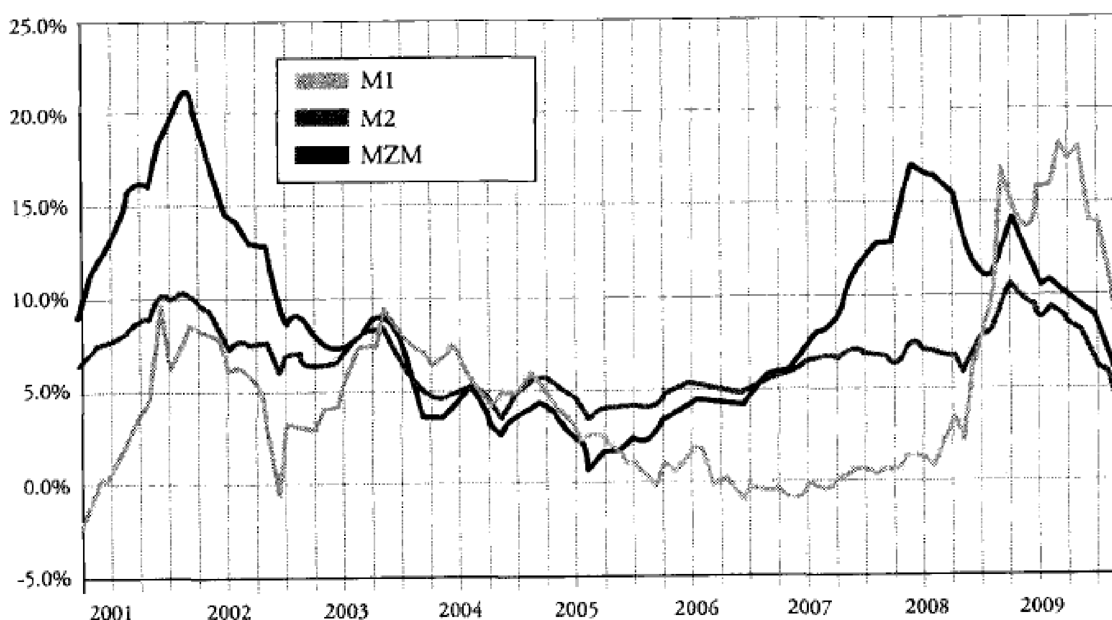
Illustration 17: Selected Short-Term Collateralized Debt Instruments, 2001-2010 (Billion $)



Source: Retrieved from "Ben Bernanke versus Milton Friedman: The Federal Reserve's Emergence as the U.S. Economy's Central Planner" by J. Hummel, 2011, *The Independent Review*, 15 (4), pp. 499.

Fed's response to this subprime financial crisis was swift and prevented a full-fledged financial panic. The Fed injected liquidity into the financial system and against what Bernanke usually suggested it has followed Friedman's suggestion, which was to inject liquidity and not only to insolvent institutions. Responding to the panic Bernanke as lowered discount rates and created the Term auction facility in December 2007, which allowed banks to determine the interest rate through auction. Although the main injection of liquidity came only in March 2008 when it was created, the Primary Lender extended the discount loans and the Term Lending Facility lengthened the time for dealers to swap their riskier assets into other securities. This last move has greatly increased the repo markets. Bordo seriously objected Bernanke's moves by explaining that the distribution of liquidity should not be focused by this but instead the liquidity should be provided by the market. To obtain that the Fed should use open market operations (Hummel, 2011).

Illustration 18: Monetary Growth (M1, M2, and MZM), 2000-2009



Notes: M1 is from the Board of Governors, monthly and not seasonally adjusted: MINS. M2 is from the Board of Governors, monthly and not seasonally adjusted:M2NS, MZM is from the St. Louis Fed. monthly and not seasonally adjusted: MZMNS. Annual year-on-year growth rates are author's calculations.

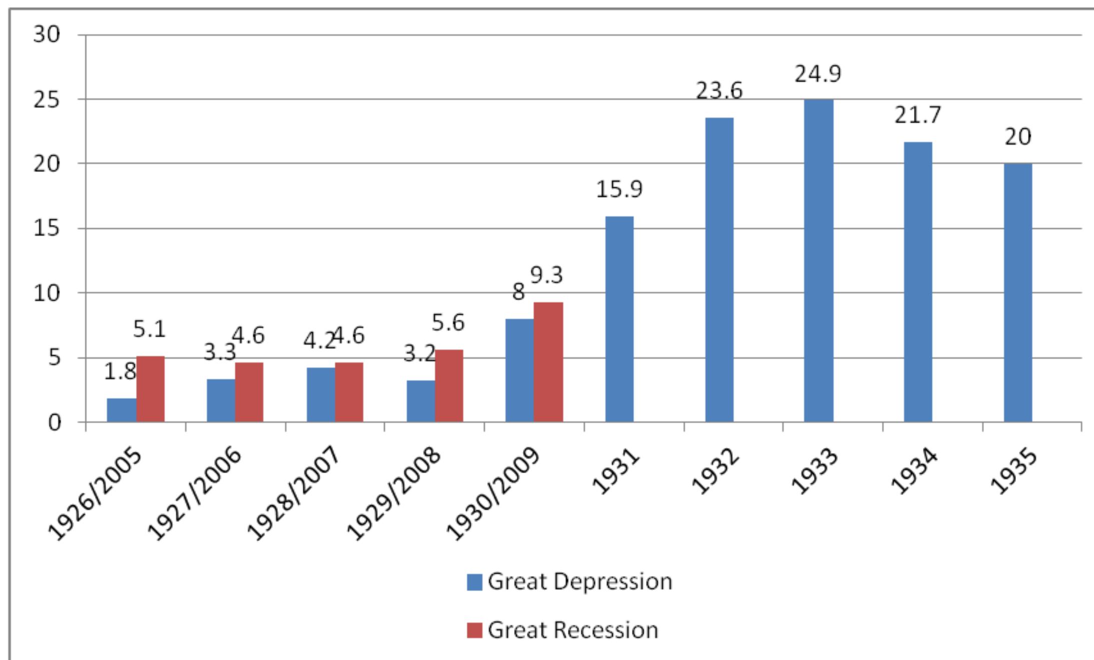
Source: Retrieved from "Ben Bernanke versus Milton Friedman: The Federal Reserve's Emergence as the U.S. Economy's Central Planner" by J. Hummel, 2011, *The Independent Review*, 15 (4), pp. 501.

4.2 Wage Inflexibility

The second mistake that led to the Great Depression was the wage inflexibility. When the Great Depression was still in the beginning, the main actors of the economy (government, businesses, unions, and others) believed that the best way to avoid an economic collapse was to maintain the consumption high. To keep the consumption high the wages have been kept high. The main actors didn't realize that the deflationary economy have dropped the prices to a point were businesses couldn't keep their employers with the same wages they had before. To ensure the survival of the companies many had to resort to mass layoffs (McMahon, 2009).

Unemployment has increased to almost 25% in 1933, while in the recent recession the unemployment rate reached its peak in 2009 when it totaled 9.3%. There is huge evidence here that although the increase in unemployment in the recent recession was high it can't be compared with the numbers reached in the Great Depression. The expectation for 2010 is that the percentage of unemployment will remain similar to 2009 (Aiginger, 2010).

Illustration 19: Average Annual Unemployment Rate



Source: Adapted from "Average Annual Unemployment Rate", by Bureau of Labor Statistics (n.d.)

In this recession, there were some concessions between the main actors. For now, with the lowering of wages, the exponential increase of unemployment has been somewhat stopped. The question that still remains is that if with the brink of recovery the demands for those who had their wages adjusted to catch-up with their losses won't create an inflationary storm? (McMahon, 2009).

4.3 Closing down trade and radical ideologies

According to McMahon (2009), another big mistake that led to the Great Depression was the closing down of international trade. The adoption of policies such as the Smoot-Hawley Tariff Act in 1930 has created a full out war against imported goods worldwide, which have crippled many economies.

Although the effects of raising tariffs and import duties constituted a major source of revenue for government and a protection to domestic producers, the drop in World trade has reversed the situation (Aiginger, 2010). The Smoot-Hawley Act has raised the tariffs of imported goods to an average of 60% over 20 000 products and in reaction to this policy other countries have raised their barrier on US products. World trade dropped 66% between 1929 and 1934 (Ahearn, 2009).

Illustration 20: Exports as Share of G.D.P

Source: Retrieved from "Catalpa Research: First DIBs", by Catalpa Capital (2012).

The protectionism required to shield local companies may end up by aggravating an economic recession into a full economic depression (Aiginger, 2010).

In 1931, with sterling's departure from the gold and the reduction of exports due to the retaliation of the Smoot-Hawley Tariff Act devaluations on domestic products prices started. The lack of capital was leading commodity exporters to sell their outputs at low prices to avoid debt default, each time decreasing their products prices (Grossman & Meissner, 2010).

According to Grossman e Meissner (2010), although devaluation could bring benefits, foreign debt was limiting those benefits.

In 1929, the reduction of GDP has totaled -27% whereas the recent crisis had a reduction of -2.4% (estimate) from the peak in 2008 to the forecast of 2009. Comparing to the World GDP the US has suffered a worse fall in GDP especially during the Great Depression. World GDP lost only 9.8% during the Great Depression and during the recent financial crisis the fall was of 1.3% (real values). The development in China has lessened the fall of World GDP (Aiginger, 2010).

Table 8: Comparison of Two Crisis: Decline of Real GDP

	Great Depression			Recent Crisis				
	1929/1921	1929/1912	1932/1929	2008/2000	2008/1990	2009 forecast/ peak 2008	Trough 2009/ peak 2008	
	Annual Data			Annual Data			Quarterly Data	
US	45,4	69,4	-27,0	18,4	63,8	-2,4	-3,8	1)
World	44,7	38,8	-9,8	39,5	88,7	-1,1	-4,6	2)

Notes:1)2Q2009/2Q2008, 2) Weighted by GDP (Austria, Germany, Belgium, Spain, France, Finland, Sweden, United Kingdom, United States, Japan.

Source: Adapted from “The Great Recession vs. the Great Depression: Stylized Facts on Siblings That Were Given Different Foster Parents” by K. Aiginger, 2010, *Economics, The Open-Access, Open-Assessment E-Journal*, 4 (2010-18), pp. 8

According to IMF forecasts, the loss in World GDP in 2009 will be compensated by the expected growth in 2010. The estimated recovery for the Great Recession will take two years in terms of GDP while in 1929 it took six years (Aiginger, 2010).

The fall in exports was around 20 percent for both crisis, but the motives were different. During the Great Depression the fall in exports was mainly due to income declines, tariffs and other trade barriers, but in the recent crisis the motives are related to changes to the structure of trade and uncertainty. Since the Great Depression world trade has changed and as the share of trade of larger economies consists of consumer durables and investment goods, uncertainty will leave consumers and producers of those goods on hold (Grossman & Meissner, 2010).

In the recent recession there were no policies that prevented the international trade to flow. Although there are still some voices that pretend the adoption of those kinds of policies (McMahon, 2009). The protectionism can be much more harmful now than it was back in the 1930’s for two reasons. First, global economy is much more open than it was. In 1930 the average tariff was of 50%, but it was declining to 25%. Nowadays it is reduced to an average of less than 10%. Secondly, today manufactured products are created by parts assembled all over the world (Cerdikwan, 2010).

Table 9: Comparison of Two Crisis: Decline of Real GDP

	GREAT DEPRESSION			RECENT CRISIS		
	1929	**1932**	**DEVIATION**	**2008**	**2009**	**DEVIATION**
US	9.4	5.1	-4.3	24.3	18.4	-5.9
WORLD	23.2	14.7	-8.5	35.2	27.4	-7.8

Source: Adapted from "The Great Recession vs. the Great Depression: Stylized Facts on Siblings That Were Given Different Foster Parents" by K. Aiginger, 2010, *Economics, The Open-Access, Open-Assessment E-Journal*, 4 (2010-18), pp. 8

Considering relative changes, the US "openness" has fallen abruptly during the Great Depression, while in the recent crisis the changes were less significant. Comparing the US with the World "openness" the changes were similar. Protectionism measures are being counteracted by regular international coordination meetings such as G20 (Group of Twenty Leaders, Finance Ministers and Central Bank Governors), European Commission, IMF (International Monetary Fund), OECD (Organization for Economic Co-operation and Development) and WTO (World Trade Organization). Even "Buy National Clauses" have been vigorously fought being most of them softened or abandoned (Aiginger, 2010). In 2010, President Obama has promised to double American exportations creating 2 million jobs. Obama's Administration knows that the key for recovery is to grow exports and to do so they pressured China to value its currency and open its markets to the American businesses. Obama is also trying to work together with exporting companies to help them sell their goods and services all over the world. The result was that 2 years after, exports increased to 180 billion dollars a month from the original 140 billion dollars, which represents a 16% increase if the pace continues Obama will reach its goal. Although some economists believe that the increase is mainly due to economic trends like the end of the recession and increasing prices of commodities (Lowrey, 2012).

The idea of a product made in one country and sold in another country is somewhat extinct. The supply chain changed and now it's common for companies to use production sharing or vertical specialization. Each time a good crosses a border its cost will increase due to international trade costs which include transportation costs, commercial policies variables, insurance costs, finance costs and others. So if these costs increase there will be a decrease in cross-border transactions (Grossman & Meissner, 2010). Cooperations between foreign countries can turn national companies more able to deal with global competition. In summary, if trade barriers are set, everybody will worse off (Cerdikwan, 2010).

4.4 Government Spending

According to McMahon (2009), the fourth error of the Great Depression is being repeated once again, which is the government spending. Although there was and still is a belief that a stimulus spending would help to avoid a downturn, most stimulus spending are ineffective. The massive government spending that must be obtained to pump the economy will generate huge debts and deficits. In 2009, the US Government was predicting a deficit of 1.58 trillion dollars, which represents 11.2% of GDP. In 2010, it is predicted that public debt will rise close to 10 trillion dollars which represents about 70% of the US economy.

The government spending during the current crisis was set in motion much faster than during The Great Depression. The government spending of the Great Depression only took place when Roosevelt took charge. To face extreme poverty and such, the US government had to increase its role in social welfare. Hoover had only a shy increase in spending through the Reconstruction Finance Corporation in the latter part of 1932 which provided loans to state and local governments. Finally it was Roosevelt's New Deal Plan that revolutionized social welfare and increased significantly government spending. In 1935 Roosevelt established the Social Security Act that provided public assistance to people that were in dire need of assistance. Per capita relief expenditures reached 160 per cent from 1932 to 1933, and almost tripled from 1932 to 1940 (Fishback, Haines & Kantor, 2005).

The government spending of the 1920's and the spending of Obama's government are not comparable, at least not in figures. Since 1914, the government role has increased exponentially when compared to the GDP. As it is shown in the table below, the role of the government has greatly increased.

Table 10: Government spending as a percentage of GDP

	1890	1913	1929	1938	1973
Germany	13	18	31	42	42
France		9	12	23	39
Netherlands		8	11	22	46
United Kingdom	9	13	24	29	42
United States		8	10	20	31
Japan		14	19	30	23
Average		12	18	28	37

Source: Retrieved from "História Económica do Século XX – Relatório de Disciplina" by J. Leite, May 2005, *Lecture Notes: University of Aveiro*

The role of the government has increased not by choice, but because the society in a way forced governments to take measures to avoid a social collapse. Germany was the first government to create an obligatory insurance plan that covered work accidents, disease, disablement and illness this was back in the 1880's and in the table the weight of Germany government is revealing of that option.

The World Wars have made the governments to increase in size, since the joint effort required the mobilization of all resources the government was the only entity that could perform that job. The Wars have increased the level of tolerance to taxes and to the intervention of the government (Leite, 2005).

In the twenties, the US had surplus budget and it continued until 1929. In 1930 expenditure has increased, to aggravate the situation, tax revenues fell sharply. To counteract the decrease on tax revenues, major tax increases have been implemented. The deficit has reached 4.7% in 1932 and it continued to grow to 5.5% in 1934 and 7% in 1936 (Aiginger, 2010).

To mitigate the downturn the US Government adopted stimulus that were introduced in an early stage of the depression. It took only 6 months for the US Government to employ those stimulus,, this was a major difference compared with the late use of fiscal policy during the Great Depression. The kind of debt the US needs to employ the stimulus has to be financed from abroad. The US has to depend on the willingness of other economies to buy their debt. This kind of borrowing can lead to the collapse of the US Dollar, and because China is the biggest borrower it can create economic and political tensions between those two economies. As the US Government is predicting a double digit deficit it is a risk they have to take. The same tactic was used during the Great Depression to a certain point, Henry Morgenthau summarized this policy like this "Now, gentleman, we have tried spending money. We are spending more than we have ever spent before and it does not work… I say after eight years of this administration we have just as much unemployment as when we started… and an enormous debt, to boot." At the time, despite the fact that the Americans lost their confidence on the economic system, they believed in Roosevelt's Policies. Today, Obama's Government is failing in two fronts, the population doesn't believe in his policies, and the marketplace still resents it (Aiginger, 2010; McMahon, 2009; Gramm, 2010).

In the Great Depression, fiscal stimulus was adopted to mitigate or compensate the automatic stabilizers. In today's recession, the multipliers are amplified by stimulus packages. One part of the US stimulus goes to subsidies for home and auto-buyers in the US. These subsidies can have a double effect, as they can create an unexpected increase of sales caused by the persuasion of lower prices and when the subsidies are over sales will drop abruptly (Aiginger, 2010; McMahon, 2009).

According to McMahon (2009), a big part of the government spending will be through the printing of money leading to inflation. More, another big part of the spending will be financed by future taxes, so there will be a tendency of consuming before the increase in taxes.

Table 11: Comparison of two crises: budget deficit/surplus in % of GDP

	GREAT DEPRESSION													CURRENT CRISIS (FORECAST)				
	1920-1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1931-1929	1931-1936	1932-1929	2007	2008	2009	2010	2010-2008
	Average	Annual Data									Absolute change			Annual data				Absolute Change
USA	0,9	1,0	0,7	0,8	-0,6	-4,7	-4,6	-5,5	-3,8	-7,0	-1,3	-6,4	-5,4	-2,9	-5,9	-12,1	-14,2	-8,3
France	-5,5	1,2	1,4	-1,5	-1,8	-1,7	-4,6	-3,8	-5,1	-6,9	-3,3	-5,1	-3,2	-2,7	-3,4	-6,6	-7,0	-3,6
UK	1,8	1,8	0,8	1,0	0,8	-0,2	1,0	0,5	0,4	0,2	0,0	-0,6	-0,9	-2,7	-5,5	-12,8	-14,0	-8,5
“WORLD”	-0,5	0,8	0,6	0,1	-0,5	-2,5	-2,3	-2,7	-2,2	-3,5	-1,1	-3,0	-3,1	-1,9	-3,8	-8,7	-10,3	-6,5
Unweighted average over countries	-1,9	0,7	0,7	-0,5	-0,8	-1,8	-1,8	-2,2	-2,4	-2,8	-1,5	-1,9	-2,5	-0,1	-1,7	-6,4	-7,8	-6,2
Standard desviation	4,2	1,7	1,2	1,4	1,2	1,6	2,2	1,7	2,0	2,9	1,4	3,1	2,0	2,9	3,4	3,9	4,0	1,6
Coefficient of variation	-2,272	2,479	1,746	-2,744	-1,452	-0,875	-1,173	-0,797	0,844	-1,039	-0,934	-1,579	-0,835	-36,872	-2,085	-0,616	-0,509	-0,266

Source: Adapted from “The Great Recession vs. the Great Depression: Stylized Facts on Siblings That Were Given Different Foster Parents” by K. Aiginger, 2010, *Economics, The Open-Access, Open-Assessment E-Journal*, 4 (2010-18), pp. 22

4.5 Euro Versus Gold Standard

Since its creation the Euro has grown in respectability and it has become a backup reserve currency for the dollar. If the Euro can function as a support currency for the dollar, the capital flows to the US will diminish and the demand for reserves will stay low avoiding a meltdown of the American currency.

Although the importance of the Euro is undoubtable there are some voices among the economists that regard it as the new gold standard.

4.5.1 The Creation of the Euro

There was a general controversy when the idea of the Euro was raised.

The thought of a monetary union across the European countries was an old idea that went as far as the gold standard, but the idea died as soon as the gold standard failed. The main European countries were living decades of prosperity and a stable currency. Their values were savings and thrift, and so an

inflationary economy and a weak currency were incompatible. Some people adverted for the risks of a fixed exchange rate, one of them was Helmut Schmidt who categorically affirmed that Western Europeans already had a fixed exchange rate called the gold standard, and that there was a parallel to be drawn from the Euro to the Gold Standard (Cohen-Setton, 2012).

Despite their warnings the Euro was created anyway, and when in the gold standard there was a failsafe that permitted countries to abandon the gold standard during harsh times, the Euro had no such thing. The reason why the Euro didn't have a failsafe was to demonstrate that is was solid, progressive and irreversible (Eichengreen & Temin, 2010).

4.5.2 Similarities between the Euro and the Gold Standard

Fixed exchange rates facilitate communication and business in good times but when things get bad the problems are intensified. When the gold standard was created there was an understanding that a failsafe had to be created to avoid major crisis. Gold standard creators developed a rule that when things got really sour the exchange rate could become unfixed. In the Euro's case that doesn't apply since national currencies have been abandoned (Cohen-Setton, 2012).

Eichengreen (1995) shows in his book that a fixed exchange rate will only work as long as there is cooperation. This is well shown in the interwar era, to be more exact, until 1918. After 1918, countries started to act for their own interest, and so the collapse of the gold standard has become inevitable.

The end of the gold standard started in October 1929, when US increased the interest rates when trying to defend their gold parity. The increase in interest rates has dried up the gold reserves of the gold bloc, and so in 1933 to aggravate the deflationary pressure on the countries of the gold bloc France also increased their interest rates draining even more the world gold reserves. In the end, if there was a coordinated effort to establish interest rates across the countries committed to the gold standard things would have been different (Eichengreen & Temin, 2010).

According to Eichengreen and Temin (2010), another similarity between the Euro and the gold standard alongside with the lack of coordinating national macroeconomic policies was the lack of an emergency facility to provide assistance to countries in financial distress.

When the Euro was adopted there was awareness that the only way it could survive was if financial and fiscal policies were created for the common concern of Europe as a whole, and there had to be coordinated adjustments that guarantee that there would always be countries with chronic surplus that needed to expand and countries with chronic deficit that did the opposite. To

balance this equilibrium various mechanisms of coordination were created such as the Stability Growth Pact, the Excessive Deficit Procedure and the Broad Economic Policy Guidelines (Cohen-Setton, 2012).

According to Cohen-Setton (2012), the coordination procedures failed as Europe is riven by imbalances. The fiscal and monetary constraints applied to some of the countries that have chronic deficits left them no hope of escaping their financial burdens. It sounds a bit like the 1930's when there was the mentality that the economy should be purged from its rottenness.

Euro-zone members lost their monetary independence, but now they are losing their fiscal freedom of action to Germany's will. This is a really dangerous situation since fiscal policy was the only independent policy tool left to Eurozone members (Chancellor, 2010).

The only countries that maintained the gold standard for a longer period were the ones that used protectionism tariffs, but in the end even they eventually left the gold standard. As Europe abolished protectionist tariffs even that possibility has been denied for the Euro-zone Governments (Eichengreen, 1995; Buttonwood, 2010).

The gold standard as a fixed exchange rate was a key part of the problem during the Great Depression, and now we have the Euro as a fixed exchange rate. Actually there are two forms of fixed exchange rates active today, the Euro as a formal fixed exchange rate, and the dollar that represents an informal fixed exchange rate through much of the emerging world since the dollar is used by many of those countries to export/import (Bootle, 2012).

4.5.3 Debt - Then Versus Now

According to the table below, although the countries with the most debt are (by descending order): Ireland, Spain, Britain, Japan and the US, the countries that are at the heart of the current fiscal crisis are the Europe Southern region such as Greece, Italy, Spain and Portugal (Buttonwood, 2010).

Table 12: Debt and Primary Balances (In percent of GDP)

	Current WEO projections, 2010			Illustrative fiscal adjustment strategy to achieve debt target in 2030	
	Gross Debt	Primary Balance	Structural PB 1/	Structural PB in 2020-30 2/	Required adjustment between 2010 and 2020
Advanced economies					
Australia	22.7	-4.9	-3.4	0.3	3.7
Austria	74.9	-3.1	-2.1	3.1	5.1
Belgium	102.7	-2.3	-0.4	5.3	5.6
Canada	79.3	-3.5	-1.0	2.1	3.1
Denmark	26.9	-2.8	1.9	0.2	-1.7
Finland	48.1	-4.8	-2.3	0.5	2.8
France	85.4	-6.2	-2.1	4.0	6.1
Germany	84.5	-2.3	-0.4	3.0	3.4
Greece	115.0	-2.0	-2.2	6.8	9.0
Iceland	137.3	-2.3	0.4	4.8	4.4
Ireland	75.7	-11.1	-8.2	3.6	11.8
Italy	120.1	-0.7	1.0	5.8	4.8
Japan	227.0	-8.8	-6.9	6.5	13.4
Korea	39.4	-1.0	0.3	0.4	0.1
Netherlands	68.8	-3.6	-2.1	1.4	3.5
New Zealand	30.2	-3.2	-1.9	0.4	2.3
Norway	67.2	8.6	9.2	10.5	1.3
Portugal	81.9	-3.9	-2.9	3.6	6.5
Spain	69.6	-11.0	-5.8	4.9	10.7
Sweden	45.0	-4.5	-1.5	0.5	1.9
United Kingdom	81.7	-10.9	-7.8	5.0	12.8
United States	93.6	-8.1	-3.7	5.1	8.8
Average (PPP-weighted)	102.1	-6.5	-3.3	4.5	7.8
G-20 Advanced economies	106.7	-6.7	-3.4	4.6	8.1
Higher debt	108.2	-6.9	-3.5	4.9	8.4
Lower debt	34.9	-2.9	-0.5	0.4	1.4

Notes: 1/ Excludes losses from financial system support measures in Japan and the United States. Structural balances are reported in percent of nominal GDP - 2/ Primary balance is assumed to improve gradually during 2011-20; thereafter, It is maintained constant until 2030. The lasr column shows the primary balance improvement needed to stabilize debt at end-2011 level if the respective debt-to-GPD ratio is less than 60 percent (no shading, “lower debt”); or to bring debt ratio to 60 percent in 2030 (shaded entries, “higher debt”). Illustrative scenarios for Japan are based on its net debt, and assume a target of 80 percent of GPD. For Norway, maintenance of primary surpluses at their projected 2012 level is assumed. The analysis makes simplifying assumptions: in particular, beyond 2011, an interest rate-growth rate differential of 1 percent is assumed, regardless of country-specific circumstances.

Source: Retrieved from “*The State of Public Finances Cross-Country Fiscal Monitor: November 2009*”, by International Monetary Fund, Fiscal Affairs Department (2009, November 3)

There is a big difference between US, Japan, Britain and the rest of the European countries. That difference is called the fixed exchange rate, in other words the Euro. The former three can issue debt in their own currency, and so they can devalue their currency, the Euro countries are not so lucky. The only way Euro countries can devalue their currency is by leaving the Euro zone. Doesn’t it sound familiar? Doesn’t it feel like a recreation of the gold standard? (Buttonwood, 2010).

The Euro has increased the production costs of some countries like Italy and Ireland when compared to Germany. The Euro countries can’t devalue their currency and so the only way to gain competitiveness is to deflate (Chancellor, 2010).

4.5.4 Abandoning a fixed exchange rate

The gold standard and the Euro suffer from the same flaw, that is the lack of an exit contingency plan. In the Lisbon Treaty there is no provision to an incumbent member of the Euro area that opts to readopt its national currency (Cohen-Setton, 2012; Eichengreen & Temin, 2010).

Although the exit procedures today are not similar at all, the demands are totally different. Leaving the Euro-zone is much harder than it was for a country to leave the gold standard. Now countries that suggest abandoning the Euro could create a run on the banking system making it to collapse together with government lending. The risks are not only for the country that leave the Euro-zone but also for the entire Euro-zone financial system. As Edward Chancellor states in its intervention in the Financial Times: "Euro-fetters are proving scarcely less agonizing and certainly more binding than the golden variety" (Chancellor, 2010).

Even if the risks of leaving the Euro are great some members can choose to disregard its treaty obligations. To reintroduce a national currency, an extremely coordination had to be set in motion since all the financial assets and liabilities of residents has to be converted instantly. The conversion had to be immediate to avoid investors from withdrawing their money and that is the only way to avoid financial instability. Parliamentary democracies are not known to take overnight decisions, and so most probably this situation is unadoptable (Eichengreen & Temin, 2010).

4.6 Conclusion

The Great Recession as well as the Great Financial crisis started in a similar manner, they started in a period of great development. The 1920's was the decade of the "Roaring twenties" and the excessive laxity on regulatory measures regarding the real estate sector. In the 2000's it was the laxity on regulatory measures over the shadow banking system or subprime sector. Both events created a bubble on real estate.

The first reactions of those in charge were similar. When realizing that there was excess liquidity in the market, the first logic solution that appeared was to shrink the money supply.

However there is a great difference between what happened after. During the Great Depression the liquidity wasn't restored because the Gold Standard was restricting monetary policy. It was only in 1931 that the Fed realized it

needed to increase liquidity. During the Great Depression there was no lender of last resort and there were no institutions to maintain financial stability. In the recent crisis, there are all those kinds of mechanisms to prevent financial instability. During the recent crisis, the Fed didn't follow its job of lender of last resort to the fullest, or else Lehman Brothers would never be allowed to fail. This was a mistake by the Fed, as it created panic, but at least this time the panics and runs on banks were somewhat controlled, or at least they were less severe.

During the Great Depression there was a belief that if the wages continued high, this would help the economy to prosper, because consumption would be kept high. In a time where there were still a lot of sectors that produced labor intensive goods, the high wages would lower their productivity. The prices were low due to the deflationary policies and companies couldn't keep the same workers as before. Those who could fire some of the staff would do it, the others would have to close doors. The conversations between the main actors of the economy has prevented unemployment to spread like it did back in the 1930's. It didn't even reach half of the 25% observed back in 1933. The measures taken have prevented unemployment to increase like it did.

During the 1930's international cooperation was a joke. It was every country for itself, and as soon as things worsened US tried to protect its internal markets. The way to do that was by increasing imported products tariffs, but this kind of solution created retaliation worldwide. As expected World trade dropped by more than 60% between 1929 and 1934. The lack of trade as depressed prices even more. Fortunately this time there were no restraints to World Trade, although it dropped, this time it was due to uncertainty. Trade barriers would not last today since products are manufactured with parts assembled all over the world. Obama's administration knows that the right way to fight the crisis is by increasing exports, and so it launched a program to double exports. This program was built with the intention of helping exporting companies and to make international trade fairest for everyone. China has used financial maneuvers to keep the renminbi low but to turn the market fairer, China has to appreciate its currency.

To prevent any further financial crisis the policy makers of the Great Depression adopted a set of rules to protect the economy. After some decades those rules were forgotten. Now in the recent crisis those rules have been brought back to life. This time, the lax in those rules permitted banks to evolve to a size considered too big to fail, and if a single of those banks went bankrupt it would create a large monetary contraction. This is exactly what happened.

Regarding government spending there is a similarity between the two crisis, the government is spending to stimulate the economy, but the similarity ends there. The weight of government spending compared to the GDP is totally different. While in 1929 government spending vs GDP was of about 10 per cent

in US, today it is close to 40 per cent. Also in the Great Depression it took a lot of time for the government to initiate a financial stimulus, this time six months after the crisis Obama's administration was already employing financial stimulus. Although a stimulus to the economy could be a double sided blade, on one side you can try to prevent the economy to stabilize or even grow, on the other side that stimulus has to be financed somehow. US doesn't have the kind of reserves to initiate a major internal stimulus, and to do so it needs to print money, which causes the dollar to drop. It also needs to financed abroad most likely by China, but with the dollar dropping it can hurt their cooperation. In the end all this financing has to come from future taxes. Will the benefits of today's stimulus be greater than tomorrow's sacrifices?

In the Great Depression the gold standard was one of the major problems that prevented the economy to fully recover. Today, there is a fixed exchange rate standing, the Euro. There is a belief that the Euro is aggravating even further the World Crisis. In a fixed exchange rate there should be countries that are expanding and others contracting, this is the only way for a fixed exchange rate to stand. During the Great Depression there was no international cooperation and so the gold standard couldn't stand. Today, with the Euro, history is repeating itself. The main countries of the Euro are taking contractionary measures, those kinds of policies hurt even more the countries that were already in financial difficulties. The international cooperation of today is growing and there are common policies between the Euro-zone to prevent a new gold standard. The World should keep their fingers crossed and hope those joint policies are effective. If Europeans abandon the Euro project World Economy will suffer, being US the country that will suffer the most, apart from the European countries, as the Euro functions as a backup reserve currency for the dollar.

CONCLUSION

5 Conclusion and Future Work

The objective of this thesis was to develop the theme of the similarities between the Great Depression and current crisis already known as the Great Financial Crisis or the Subprime Crisis.

In the first chapter, it was discussed the primary objectives of the thesis along with the methodology used to reach those objectives, being the methodology used theoretical and descriptive.

The second chapter starts with a brief description of the US economy in the early twentieth century, the standard of living of American citizens and its beliefs and social characteristics. It is followed by a description and evolution on the main areas that affected the Great Depression to become the most severe economic crisis known to date.

The third chapter is similar to the second, but this time it is the Great Financial crisis that is explained.

In the fourth chapter the similarities and differences between the two crises are analyzed. It is analyzed how the Fed and the Government dealt with the crisis and if there was a difference in their behavior according to past experiences.

In this chapter the main conclusions will be debated according to personal interpretation, as well as future studies.

Along the way to beat the current crisis we have stumbled upon some similarities between it and the Great Depression.

The resemblances start when an analysis of the economy before the crisis is made. Both of the crises were preceded by a time of great expansion, of great technological progress, and great progress within the banking system.

The Great Depression started after the “Roaring Twenties”. During this period, the families were being offered easy credit, there were no effective regulations to ensure that the financial effort of those families wouldn’t be surpassed. The low requirements to get credit were making families to obtain credit to invest, even in risky markets. The most appreciated way of investment was households followed by the stock market. Everyone wanted to take part on the gains of the real estate and stock market and so a bubble was formed. In the recent crisis there were more restrictions on credit, but the real estate sector was flourishing more than ever, since financial institutions have found a way to continue borrowing to that specific sector. The way financial institutions managed to do this was through the Shadow Banking System or the Subprime loans. The Subprime loans were risky but because they are gathered in a pool of assets it was thought that the risks would be somewhat controlled.

The unmeasured risk and the bubble formed during both crises had the same reaction by policy makers, which was to contract credit to prevent the bubble to get any bigger. What happened after the contraction was also similar on both crises, the bubble burst and financial difficulties started.

The contraction created to avoid the real estate and the stock market to increase had spread to other sectors. The policymakers of then and now, believed there would be no spillovers to the rest of the economy. They were wrong then and they are wrong now. The contraction spread through all the economy and the decline in general consumption was a fact. The money supply reduced drastically. To continue to produce at full capacity firms had to lower their prices and so in time their revenues weren't enough to secure their costs. Due to this, unemployment has raised to percentages of 25% during the Great Depression, while in the recent crisis unemployment was almost 10% because the government has intervened. In the recent crisis Obama's administration has in mind that the way to increase unemployment is to increase exports and his policies are having strong results. In the Great Depression the policies were the complete opposite, tariffs were created to protect the national production which have hurt even more the Economy since there was retaliation from other countries and World Trade dropped substantially.

One other way to revert the unemployment situation was to turn the wages flexible. This wasn't accomplished in the Great Depression since Unions were too powerful, and there was a strong belief that if wages were kept high the private consumption would eventually increase. This belief only created more unemployment. This time the government has adjusted wages, but there is still a concern on how the wages will be adjusted again and if it will create an inflationary movement once they are readjusted.

The unemployment and the contraction of the economy created on both crises, led a number of financial institutions to fail. The runs on banks by the population to secure their money has crushed many financial institutions, but while in the Great Depression there was no role of lender of last resort this time there is one. Another big difference is that where in the Great Depression there were a big number of small banks, the recent crisis was formed by a small number of big banks that were considered too big to fail. It is proven now that they weren't too big to fail since the collapse of Bear Sterns in March 2008. The Fed has brilliantly played the role of lender of last resort until the time Lehman Brothers succumbed to the pressure, and its first mistake was to let it file for bankruptcy. The panics could somehow be controlled if the Fed had rescued Lehman Brothers. By not helping Lehman Brothers the Fed has passed the wrong impression that the lender of last resort couldn't bear the mistakes of institutions that contracted an exceedingly amount of risk. The financial distress and the uncertainty created during the Great Depression and now, had similar effects. People were struggling for liquidity, and so they started to sell stocks and real estate. The surplus of stocks and real estate created a "fire sale" as

prices decreased abruptly. Companies and families that were in financial distress were obliged to sell, and to do so they had to sell at prices lower than their real value. A downward movement of prices was created.

Both crisis stand equal in one thing, the government spent and it still is spending large amounts of money to try and change the situation at hand. There is a huge difference in the size and role of the government from then and now. During the Great Depression the government spending vs GDP was of 10 percent, now it is around 40 percent. And the amount to restart the economy is far superior now than it was back then. Also in the Great Depression the spending only took place when Roosevelt took charge and increased dramatically the role of the government in social welfare, Obama's administration only took 6 months to drastically increase government spending. We have to bear in mind that spending has two sides, if it is well applied it can fuel the economy to a point where the government doesn't need to increase that much taxes in the future to pay for those investments. This will happen if the economy starts to cheer up and it will produce enough tax money to pay those past investments. On the other side, the spending has to always be financed somehow and in the end it has to come through taxes. If the spending doesn't change the situation of the economy the taxes have to eventually raise a lot more than expected, which causes a downward spiral since taxes will create a contraction of the economy. In the Great Depression the downward spiral was stopped by the increase in consumption caused by World War II, this time the government has to be extra careful where to spend the taxpayers money.

During the Great Depression the economy was living for the first time in a liquidity trap. To pump the economy again the Fed got interest rates so low that the population in general preferred to save than to invest. In a liquidity trap a general belief is created that interest rates have only one way to go, which is up. That is exactly what happened during the Great Depression the monetary policy became ineffective. The lack of investment will cause deflation since it is preferred to hold money than to invest.

Economists thought liquidity traps were lost in time, but they reappeared in 1990 in Japan. Now US is facing a liquidity trap of its own. There are three ways to exit from a liquidity trap, but all these ways have severe consequences. Obama's administration can take advantage of low interest rates to invest, but doing so will increase the deficit and when the interest rates get up again it can severely damage the economy. One other way is to devalue the currency, which will boost exports, but being the dollar the world reserve currency it can affect Global Trade in general. The other way out of a liquidity trap is if the Fed can convince everyone that is going to create inflation, maintaining interest rates. In this case inflation-adjusted interest rates will drop below zero and borrowing and investing will resume shortly. The only problem in this last solution is that the objective of the Fed is to obtain price stability, and so inflation has to be controlled.

At last there is the fixed exchange rate problem. The gold standard was the fixed exchange rate at the time of the Great Depression and the persistence in keeping faithful to their principles has created the money contraction that was discussed before, there couldn't be any printing of money without increasing gold reserves, and since there was no international cooperation the gold flows only went to a small number of countries. The countries that were amassing the gold have sterilized it since it wasn't used to invest. The gold standard has become unbearable. Today there are two types of fixed exchange rate active, a formal fixed exchange rate, the Euro, and an informal exchange rate, the dollar used as a reserve currency of the World. The dollar is now dependent of the Euro, since the Euro is the currency that can substitute the dollar as a reserve currency, but the Euro has its flaws. The main flaws of the Euro are similar to the flaws of the gold standard and it added new ones. The Euro like the gold standard doesn't permit to print money at the countries own volition, the Euro has gone a step further and abolished the national currencies and created a single institute that can print money for all the members. Another requirement for a fixed exchange rate to survive is cooperation, during the Great Depression international cooperation failed miserably, it was every country for itself. Today, although there is much more cooperation than before it still isn't enough, the countries with superavit should continue to invest so the countries that are struggling can have a chance to balance their debts. The main powers of Europe have developed austerity measures to save money, this behavior will greatly affect the European economy. As the crisis evolves the cooperation is increasing and there are signs of improvement in the Euro-zone, the million dollar question is will it be on time? Will the distressed european countries like Portugal, Italy, Greece, Spain and Ireland stand the pressure and avoid abandoning the Euro?

The gold standard like the Euro doesn't have an escape hatch for countries that want/need to abandon the fixed exchange rate, but now the price to abandon the Euro is far greater than before. If the Euro doesn't stand it can create a crisis which some economists already name like the "Mother of all Financial Crisis". I believe it will be harsh for the countries that need to abandon the Euro, but the same was said for the countries that abandoned the gold standard and they recovered faster than the ones that stuck to it. Although I don't believe the consequences will be the same.

For future work a comparison between what finally ended the recent crisis and the Great Depression should be studied, as well as the development of the Euro. Will the Euro stand or will it be like the gold standard?

Another important work should be the study of the government spending of today compared with the sacrifices of tomorrow. Was it the right thing to do?

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