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„Financial Crisis Forecasting - Causes, Effects and Systemic Factors Influencing Financial Crises“

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Die Haupthypothese meiner Masterarbeit ist, dass Amerika in den nächsten zwei-drei Jahren einen wirtschaftlichen Abschwung erfahren wird. Diese These wird mit zahlreichen Quellen, welche von wirtschaftlichen Experten verfasst wurden, untermauert. Weiters werden die Auswirkungen einer solchen Krise im Addendum untersucht.

Diese Masterarbeit beginnt mit der Untersuchung der fünft größten Wirtschaftskrisen der letzten 100 Jahre, um die wichtigste Variable zu finden welche eine solche Krise verursacht. Folgend wird untersucht ob diese Variablen in der heutigen Wirtschaft noch vorhanden sind.

Financial Crisis Forecasting - Causes, Effects and Systemic Factors Influencing Financial Crises

Author: Christopher North

Abstract:

The financial meltdown and economic instability in 2008 revealed our need for a better and more comprehensive analysis of our economic system. Vast amounts of information have been published since and processed to determine why such a devastating crisis was allowed to happen, whether it will happen again, and if so when it will happen next. The purpose of this paper is to attempt to answer exactly these questions and make an informed decision regarding the future economic viability of America. An in depth look into the previous financial crisis will be undertaken to ascertain any business cycle trends which could provide useful information for extrapolation. This paper will also analyse the current methods in practice today which are used in forecasting and apply these to America's current situation. As this is obviously an extremely large and dynamic variable, a focus on America's current and short term future will serve as the foundation for this paper alongside an evaluation of America's current macro-economic policies, including government spending and the strength of the dollar in world markets.

In order to fully appreciate this topic, a comprehensive understanding of how a financial crisis arises is essential. Although it is possible to anticipate the short term potential industries which might ignite a crisis, this paper will not cover individual sectors extensively, but will instead attempt to correctly identify economic drivers that can cause economic instability. In this sense, an investigation into some of the potential drivers will be conducted, such as the money supply, investment trends, market valuations and the role of banks and governments in economic policy. Complimenting these assumptions, statistical data regarding the performance of large businesses prior to a crisis will serve empirical testing.

The main hypothesis of this paper is the prediction that America will experience a large downturn within the next 2-3 years. To attempt to prove this hypothesis, thorough reasoning will be supported by data from numerous sources and books written by experts in their respective fields. A prognosis of the effect of such a crisis will be explored as an addendum.

To aid the extraction of the most predominant variables which may cause a crisis, this paper will begin by exploring 5 major crises in the last 100 years, and will determine whether these traits/indicators are present in the economy today.

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Chapter 1 - Introduction to the Topic

1.1 Aims of the Paper

The absolute definition of a financial crisis is the 'situation in which the value of financial institutions or assets drops rapidly'[1] Additionally, we can assume that crises are unexpected and that their effects are not solely restricted to financial institutions; in fact, the most recent financial crisis caused the destabilisation (but not the downfall) of governments and their respective currencies too. With hindsight there has been a logical explanation for every single financial crisis in the past, which can be verified with sound economic theory and mathematical data. Some crises were so inevitably obvious, such as in the case of the 2008 subprime mortgage bubble, that it was a matter of 'when' rather than 'if' a crisis would occur.

In order to have a firm grasp of this large topic, several previous crises will be analysed in the next section. It is important to first note the causes of these crises, how similar they are to the events in 2008, and how our current economic climate looks today by comparison. If any sequence is found, then it could be possible to foresee and therefore prevent a crisis of the magnitude of 2008. Whether a crisis could be completely averted is another question, however the damage could be minimised. Furthermore, even if no distinguishable pattern is found, it is still possible to avoid future mistakes by analysing market and government reactions to crises.

The purpose of this paper is to extract particular sequences and factors which would cause a crisis and to look for any indicators in today's economic climate which could lead to a financial meltdown. Before continuing, it is important to note the extremely dynamic economic environment which exists today - post financial crisis of 2008. This section will be explored further in detail later in this paper, but due to the large scope of the subject the area of investigation will be limited to the United States. The reasoning for this decision is twofold: firstly, the United States is the largest and most powerful economy in the world, which necessitates its inclusion. Secondly, as demonstrated in the events of September 2008, a crisis in the United States facilitates a worldwide crisis due to market globalization. This does not mean to say that factors abroad which may affect the United States will be overlooked; in fact, external factors such as oil prices do affect the United States economy and a subsection in this paper will be devoted to oil prices. However, factors such as natural disasters, terrorism and war will not be taken into account due to their random nature and unquantifiable economic effects. War is of course an expensive burden which contributes to the United States

[1] Investopia.com - Financial Crisis definition.

budget deficit, however this paper will not deal with war as an independent variable, as it is extremely difficult to analyse. Furthermore, this paper does not assume the onset of future wars, instead it focusses on the direction of the economy with the current trends.

One of the most interesting factors regarding a crisis is that even now, 100 years since the creation of the Federal Exchange, the economy still undergoes systemic shocks which are considered "unexpected". In fact, the creation of the Federal Exchange on December 23rd 1913 was heralded as the end to financial instability, with Woodrow Wilson (the then President of the United States) declaring it as the "first of a series of constructive acts to aid businesses"[2]. Since its creation, many different policies and even philosophies have been developed regarding how best to run an economy. Political orientations today range from Free Market Economics (adopted by the Chicago School of Economics) to a more hands on government intervention approach (promoted by John Maynard Keynes), and ideologies such as Capitalism, Marxism and Communism have all experienced periods of adherence and revere by economists. However, we have yet to settle upon one definitive practice which should be adopted in all cases, as all theories have flaws and counterarguments, thus the debate endures. What can be safely concluded is that the more we analyse economic situations, the more we realise that we don't know very much at all, and in fact further study is required; a common conundrum of our modern times.

The layout of this paper will proceed as follows: Following this introduction, a look at the previous financial crises will be undertaken to explain the reasoning for their occurrences. A comparison with todays world will be conducted, with a special emphasis on the American market. Specifically, factors such as Balance of Payments deficits, Monetary and Fiscal Policies and the role of the Federal Reserve will be analysed. The main aim is to determine whether any links between the current United States market and the periods prior to previous crises are present. This paper will then concentrate on the work of financial experts and submit their comments and solutions relating to the prevention of financial crises. A supplementary section will then be included on the demographic change in America and its impact as an independent variable on the economy, termed in this paper as "Population Economics". Conclusions and possible expansions to this paper are then offered in the final section.

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[2] Attachment 1 - Local Newspaper 24th December 1913 - President's Signature Enacts Currency Law

1.2 Causes of Previous Crises - Prelude

In order to make this paper as clear as possible, we will start with the theory of business cycles, highlighting the major points of reference where a crisis occurs. Business cycles of course refer to long term fluctuations in the performance of an economy and comprises of boom and bust periods[3]. A "recession" occurs when an economy experiences two consecutive quarters of negative GDP growth, and a "depression" after a minimum 10% drop in real GDP. This however is not to be confused with the term "financial crisis", which is the sharp drop in asset prices and other financial indicators, which also cause financial distress to banks and other financial institutions[4]. In every case, financial crisis are explained as unpredictable and unforeseen shocks that are not readily explained in the business cycle model. It is government intervention that artificially inflates or deflates certain market areas. These policies, as well as market forces and our system in general, determine the degree of a financial crises. Deciphering the exact causes allows governments and markets to formulate countermeasures to minimise/prevent a crisis.

During his reign as Chancellor of the Exchequer and Prime Minister of England, Gordon Brown claimed that he had ended the boom and bust pattern of business cycles. In essence, his attempt was to make the bust periods shorter and less painful through systematic increases in the money supply and sequential interest rate reductions, therefore alleviating the severity of the problem. What actually occurred was a prolonged boom period in the United Kingdom followed by a severe bust. The Conservative party treasury spokesman Phillip Hammond explained this by saying: "after a debt fueled illusion of a boom, we are now facing the reality of Gordon Brown's bust"[5]. The intervention policies that were put in place are proof that government intervention can actually exacerbate the problem, not solve it. In fact, it is easy for the government to negatively intervene in the business cycle, however it is a lot more difficult to implement policies which will smooth out the curve, as shown below. The table displays both the objective of the government the actual outcome in a simplistic form. Furthermore, government intervention into markets should be done with extreme care, as the consequences are often unforeseen. Indeed this problem will be explored as we look deeper into previous periods of financial crisis.

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[3] Definition of Business Cycles - Investopedia Online http://www.investopedia.com/terms/b/businesscycle.asp#axzz2KXnnZDUN

[4] Definition of Financial Crisis - Investopedia Online http://www.investopedia.com/terms/f/financial-crisis.asp#axzz2KXnnZDUN

[5] Quoted in the Daily Mail Newspaper http://www.dailymail.co.uk/news/article-1093331/Gordon-Browns-end-boom-bust-claim-nonsense-says-senior-Bank-England-official.html#axzz2KXrtIDBQ

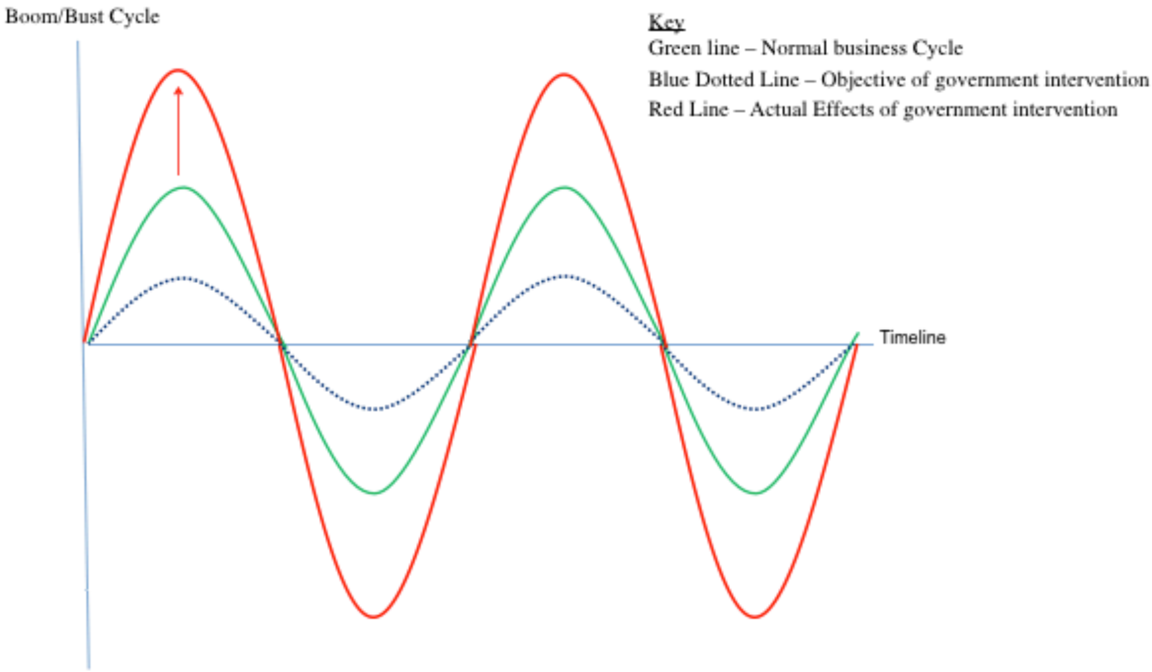

Table 1: Government Intervention Effects on Business Cycles

Chapter 2 - Previous Crises

2.1 The Bankers Panic of 1907

The Bankers Panic of 1907 was the first financial crisis following the turn of the century and resulted in a drop of nearly 50% in the value of stock in the New York Stock Exchange. The causes of this particular crash have not all been completely verified, especially the exact roles that F. Augustus Heinze and J. P. Morgen played in the crisis, but it is important to mention that in 1907 there was no insurance given to depositors when banks failed. This fact definitely exacerbates the bank run in question, as people who believe their savings are soon to be lost act quickly to protect them.

When comparing the banking structure of 1907 and the one present today, specific differences can be noted. Currently we have several very large banks which operate in the market, whereas in 1907 the market consisted of a larger number of smaller banks. In fact, there has been a continuous trend throughout the last century of increasingly larger and fewer banks. The greatest decrease in the number of banks normally occurs during or just after a crisis due to bankruptcy[6]. Interest rates and liquidity patterns were the subject of seasonal variations; the transportation costs of crops during autumn caused shortages in capital and higher interest rates, which resulted in short term liquidity shortfalls. The 1907 crisis was therefore a mix of market conditions and particular bad timing.

Prior to the crisis, trust companies were enjoying an unprecedented boom period. State banks grew by 82% and trust companies assets by 244% over the previous decade (1919 - 1929)[7]. The Knickerbocker Trust Fund, the third largest of its kind in New York, went only bankrupt a few years later, which shows the volatility in stock prices at that time.

In October - November 1907, banks retracted large amounts of market liquidity which caused a “crisis of confidence” in the market. At the same time, there was an effort by F. Augustus Heinze, the president of Mercantile National, to corner the stock of the United Copper Company through a bear squeeze technique, which proved to be unsuccessful. His belief was that there were many short sellers of United Copper stock and if he controlled a majority, he would be able to push up the price and force these investors to settle with him at a higher price. Thus would have given him both control of the copper market and a profit from short sellers. Unfortunately for him, he misjudged the power he could exercise on the stock price and his endeavour failed. The banks which were seen to have fronted money in support of this failed endeavour had their own viability called into question, which precipitated the effect of the bank runs. Trust companies in New York City suffered the most from these bank runs due to their undiversified portfolios and collateralised loans, which had grown rapidly on lenient government trust regulations (and the therefore more flexible investment opportunities).

The cumulative effect of these two events caused a widespread panic in New York and other American cities, whereby depositors withdrew their money in fear of losing their savings. This turned into a self fulfilling prophecy - as banks only kept a small percentage of total deposits as liquid reserves, the bank runs resulted in the bankruptcy of a large number of financial institutions. The role of J. P. Morgen was one of a hero; he invested large amounts of his own money to shore up failing institutions and persuaded other investors to do the same. Despite this, there has always been some controversy amid reports that J. P. Morgen personally tried to engineer the failure of some institutions by questioning their solvency, however this has yet to be verified. Nevertheless, the causes of the 1907 Bankers Panic can be detailed as follows: ***a slowing economy coupled with a declining stock market and a tight***

[6] Federal Reserve Working Paper - Changes in the Number and Size of Banks in the United States - 1834 - 1931 http://fraser.stlouisfed.org/docs/historical/federal%20reserve%20history/frcom_br_gp_ch_banking/changes_in_banks_1834_1931.pdf

[7] Moen, Jon; Tallman, Ellis (1992), "The Bank Panic of 1907: The Role of the Trust Companies", *The Journal of Economic History* **52 pg. 612**

money market. Trusts, which had more lenient regulations and riskier, undiversified portfolios, were harder hit as depositors withdrew their assets in fear of losing them completely.

Following the 1907 crash, financial experts attempted to find a way so that such an episode could never be repeated. This resulted in the December 1913 Federal Reserve Act, which established the Federal Reserve System and the issuance of issue Federal Reserve Notes as legal tender. The role of the Federal Exchange will be analysed later in this working paper.

2.2 - The Great Crash of 1929

The events of 1929 are remembered today as the pinnacle of financial crises and the great depression which followed. The importance of this event cannot be underestimated; it single handedly influenced the resulting great depression and took many decades to recover from. The ramifications of the crisis in America included 8 million unemployed citizens, food riot outbreaks in central and western America and the largest collapse of a financial institute, the Bank of United States, in December 1930.[8]

Like the majority of most crises, there was no single cause of the financial crises of 1929, rather a plethora of significant factors which together brought about the chaos which resulted. Nor was there any elaborate plot between a few wealthy individuals to corner the stock exchange. This and other conspiracy theories are not considered when analysing stock market fluctuations; there is of course to some degree a level of insider trading and illegal market activity (such as Ponzi schemes) which by no means helps the problem, however these cannot act as a prelude to a crisis, instead they act by further denting public pessimism and confidence once realised.

The beginning of the 1920's heralded a new age of stock market growth. There was noticeable growth in both production and employment levels, while inflation and wages remained steady[9]. Furthermore, the American dream had never been so attainable, the notion that anyone could become rich and accumulate their own personal wealth. The latter was made possible by the significant and seemingly continuous rise in asset prices (e.g. regarding the real estate boom in Florida), the ease at which credit could be required, and the way this was

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[8] Lords of Finance - 1929, The Great Depression and the Bankers Who Broke the World - Liaquat Ahamed

[9] The Great Crash 1929 - John Kenneth Galbraith pg. 31

portrayed and translated through stock exchanges. An example of this idea is known as a ‘binder’ and can be explained as follows:

*A middle class businessman wishes to purchase the **rights to buy** a ‘lot’ in Florida (value of “lot” is $100,000). To facilitate this transaction, the businessman puts 10% of the value down ($10,000) acquires the rights. He has no intention of developing his purchase, nor does he see it as a long term investment. His sole purpose for this purchase is speculative; as soon as the value of the lot rises, he will exercise his right and the lot will be immediately sold on. As the principle value of the lot rises, the businessman sells his asset, e.g. for $125,000, thus making the difference ($25,000) as a quasi risk free profit (based on the assumption that prices are very likely to rise).*

The beauty of this mechanism is twofold: Firstly, the amount required to be “put down” is incredibly low ($10,000) in comparison to the potential profit which can be realised. This is very attractive to investors, as the risk-return ratio without ownership is highly favourable. Secondly, the nature of the market arbitrates the risk minimisation of the investment. The seemingly perpetual rise in house prices in the 1920’ not only reassured investors that “the price of their investments can only rise”, but it did so in a relatively short period of time, thus reducing the time exposure of the investment. However, every economic principle shows that prices cannot simply rise forever. In the case of a downturn in prices, the collateral is likely to be liquidated to facilitate the repayment of the loan. This is a basic example of what happened on a mass scale in 1929, and highlights the importance of the confidence within the market. What was not expected was the severity of the downturn in housing prices. This will be explored later in this section.

Similarly, investors used a similar mechanism in the stock markets known as a ‘margin account’ to minimise their risk and realise abnormal profits. This mechanism is similar to a binder, however the investor in the case retains the ownership of the assets with a 10% downpayment, with the remaining 90% obtained through a collateralised bank loan. The stock itself is used as collateral, thus providing security for the bank whilst allowing profits to be easily transmitted to the investor. The combination of margin accounts and binders fuelled the rises in both stock and property, as well as the notion of low risk - high yield opportunities. Unfortunately, as in the case of 1929, a sudden drop in stock prices resulted in widespread margin calls the seizure of the stock by the banks, and in many cases the principle value of the stock dropping to a level lower than the amount due to the bank.

Prior to 1929, speculative investments were growing at an extraordinary rate[10]. Banks were providing record amounts of loans to satisfy investors appetites for margin accounts. Some firms even used their liquid capital to finance speculation rather than produce goods at all - so lucrative was the market. In comparison with todays markets, the variety of stocks was not so widespread as they were in 1929. This speculative asset pricing bubble therefore was squeezed into a finite quantity of common stocks, thus adding a "scarcity value" to the already high prices. To circumvent this perceived shortage, investment trusts were created by the major banks at the time such as Goldman Sachs. These normally consisted of a mix of bonds and common stocks packaged together and resold to the market. To emphasise the magnitude of investment trust growth, 186 trusts were created in 1928 and nearly 1 a day in 1929, which by August 1929 comprised of assets exceeding $8 billion.

Despite speculation being the mechanism of the boom and subsequent crash in 1929, other factors were required to facilitate the magnitude of the crisis. In 1925, under the advisement of Winston Churchill, Britain returned its currency to the pegged pre World War 1 gold standard. Th effect of this was almost immediate; the British Pound (GBP) was set at an overvalued level, causing British exports to become relatively more expensive for foreign countries (and imports cheaper). As a result, the Governor of the Bank of England requested an easing of American monetary policy through the reduction of the rediscount rate, which was granted in 1927. The effect of this policy was the increased investment in American common stocks, once again adding inflationary pressure to their value.

Notwithstanding the functions of margin accounts, binders, investment trusts, an apparent short supply of common stock and an easy monetary policy, the concept of mass leveraging was also vigorously applied in the years prior to the great crash:

"Consider the case of an investment trust organised in the 1920's with a capital of $150 million. Let it be assumed that a third of the capital was realised through the sale of bonds, a third through preferred stock, and the rest through the sale of common stock. If this $150 million was invested and showed a normal appreciation, the portfolio value would have increased by about 50% (to $225 million). The bonds and preferred stock would still be worth $100 million.......The remaining $125 million would underly the value of the common stock.....an increase in asset value from $50 million to $125 million."[11]

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[10] The Great Crash 1929 John Kenneth Galbraith - pg. 40

[11] John Kenneth Galbraith - The Great Crash 1929 - pg. 82

"There was a rush to sponsor investment trusts which would sponsor investment trusts, which would, in turn, sponsor investment trusts."[11]

Naturally, it is obvious to most that such leveraging techniques prove not only to be highly difficult to unravel but evidently risky too. There is no inherent value creation in the sponsoring of a trust of assets and sequentially bundling them with other assets to be sold on to the unknowing public. Clearly, if it is so easy to create trusts of trusts of trusts, whose continual rise in value is purely based on speculation, then a downturn in the market would render these trusts worthless. Trusts of trusts themselves have a purely theoretical value which is disastrously exposed during financial crises. To reinforce this idea, a Goldman Sachs trust (value $10,000,000) was sold to the public prior to the 1929 collapse at 104 cents per share. By 1932 its value had precipitously fallen to 1.75 cents per share. Furthermore, the bundling of relatively safe (blue chip) and more speculative bonds and common shares into such portfolios was at the time considered a method of risk minimisation i.e. they were considered safe regardless of a crisis. Despite this, when the margin calls were exercised and extra capital was demanded to cover the ailing stock prices, the portfolios were naturally liquidated. Thus arose the case whereby speculative stocks have the ability to drag down healthy ones, hence exacerbate the crisis further.

It is worth mentioning that any negative forecast of the economy was severely frowned upon, despite the overwhelming evidence to the contrary (even during the crisis itself). To facilitate the lust for speculative investing, banks were loaning out increasing sums of money, which they in turn borrowed from the Federal Exchange Reserve (to the tune of $64,000,000 a week).[12] However, the figures which need to be analysed are the indexes of industrial and factory production - if these figures show a marked decrease, the economy is likely to contract. Table 2 below shows very clearly that a decrease in the Dow Jones Industrial Average preceded the great crash and could be a potential indicator to forecast a crisis.

Three dates are in particular etched into history during the later months of 1929:

- 24th October 1929 - Black Thursday - The beginning of the crash
- 28th October 1929 - Black Monday - The end of the short market rally
- 29th October 1929 - The most devastating day in the New York stock market

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[12] John Kenneth Galbraith - The Great Crash 1929 - pg. 108

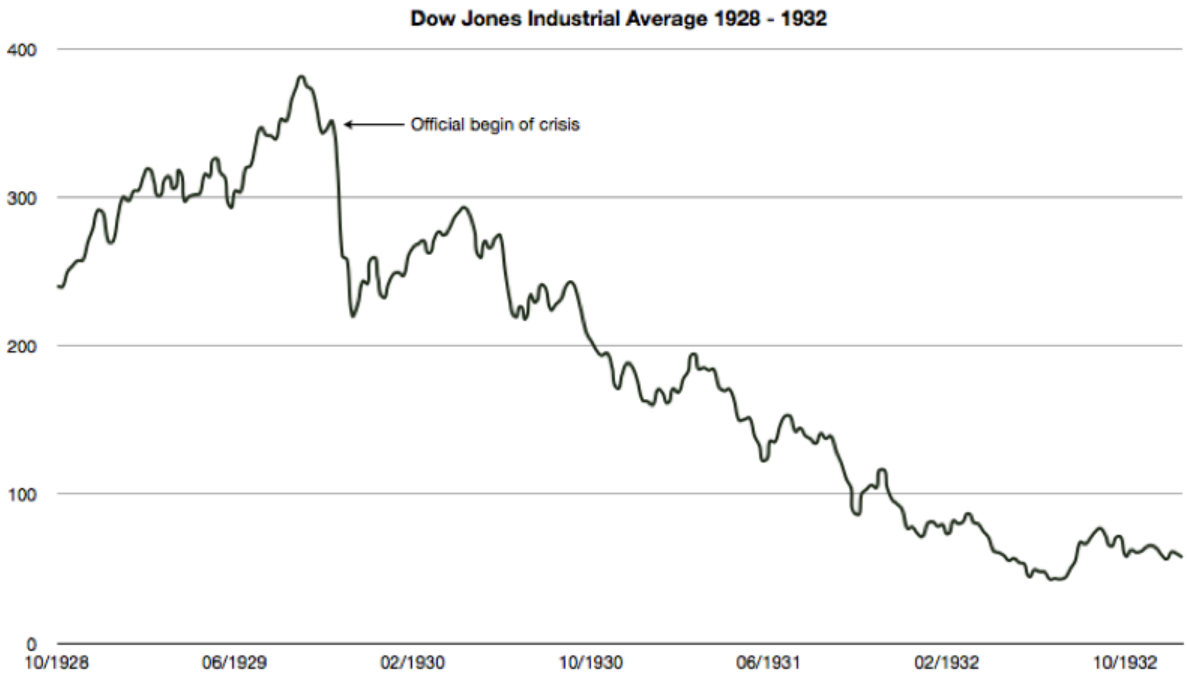

Table 2: Dow Jones Industrial Average 1928 - 1932 - General Dynamics Website

One interesting example regarding the influence of newspapers can be seen prior to "Black Thursday" when The Washington Post, one of the most respected newspapers, wrote the title "Stock Prices Crash in Frantic Selling" on 3rd October, 1929. Similarly, the New York Times headed its newspaper with the title "Years Worst Break Hits Stock Market" on the 4th October, 1929. Despite the normal backlash against such negative news, it seemed that market weaknesses were becoming apparent to some.[13] The most obvious effect of such a prognosis was a loss of confidence in the market, whose effect was devastatingly shown three weeks later.

Likewise, industrial indexes act as predictor for other future indicators, such as wages and retail sales. It is noticeable that the crash didn't occur simultaneously - the downturn in fact was demonstrated by the continuous and rapid depreciation in stock values over the course of a few years. This is what made the great depression so harmful to businesses, as investors could not see the bottom of this spiral and were ever increasingly discouraged to invest.

The analysis of government policy is also important. In the case of 1929, there was a serious neglect and lack of response from the government. The actions of President Hoover were minimal to abate this crisis, though President Coolidge was equally culpable, showing blissful ignorance on 4th December 1928 when he declared "no congress ever assembled......has met

[13] Harold Bierman Jr, Cornell University - The 1919 Stock Market Crash - http://eh.net/encyclopedia/article/Bierman.Crash

with a more pleasing prospect than that which appears at the present time." Therefore, it can be inferred that governments are either not aware of impeding crises, or that they do not wish to panic the people. Either way, there was no concerted effort to mitigate the crisis. Interest rates remained at their high levels and were not reduced to stimulate demand.

A further and perhaps more simplified way to foresee a crisis is to look at the rate of growth between the demand and supply of consumer/industrial products. Taking a simple supply and demand diagram, it is essential to note the first oder conditions and analyse the rates at which the supply and demand curves are rising. If the demand for goods and services is rising at a faster rate than equivalent supply, we should experience inflation: i.e. the rise in the prices of said goods and services. Likewise, if the rate of supply is accelerating at a faster rate than demand it is possible to anticipate a downturn in the economy. By taking the first order condition into account, we can predict the levels of supply and demand in the next period and potentially future price equilibriums. Table 3 below explains the economy prior to the 1929 crash. As business' overestimated future consumption, supply outgrew the growth of demand, causing an excess supply level. Although demand was still climbing steadily, the rate of supply of financial products was growing at a much faster rate. The subsequent deflationary pressure reduces prices and can be cross-referenced with table one, explaining the drop in the industrial indexes too. Most economists agree that this trend was the main cause of the financial crisis of 1929, coupled together with the speed of the supply and demand shifts.

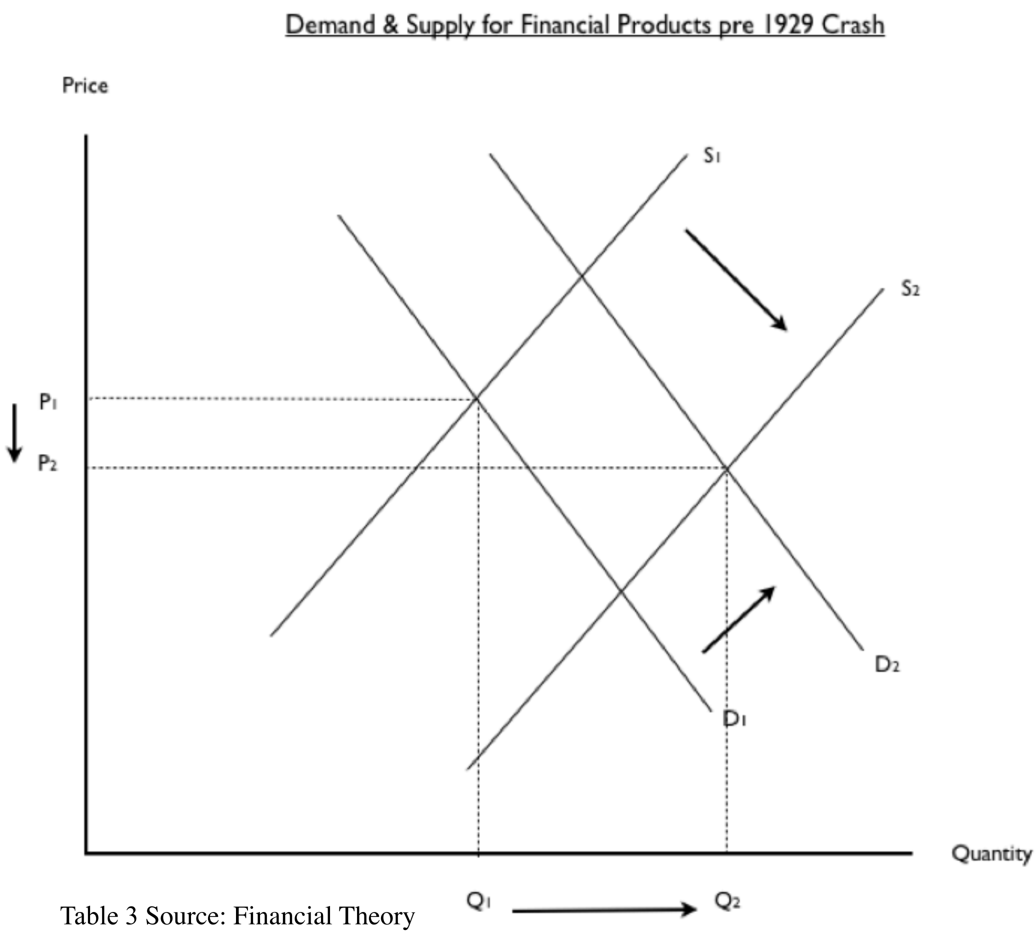

Table 3 Source: Financial Theory

The crisis of 1928 demonstrates again very clearly the inherent problems with runaway upward speculation, namely the formation of a bubble. In 1929, the bubble was allowed to deflate quickly without any particular intervention. This is perhaps the reason why the government and Federal Exchange are so active in the American economy today, as they are desperate to avoid the ramifications of allowing the market to resolve bubbles on its own. Nevertheless, this crisis is the most famous of its kind because of the great depression that it caused - a depression which spread to europe and sowed the seeds of discontent that indirectly gave rise to the Nazi party in Germany.

2.3 The 1973 Oil Crisis

This particular financial crisis was very different from any of its predecessors in the sense that it was created solely by direct foreign intervention. In the years leading up to 1973, the tension between the Arabic states and Israel, especially Egypt and Syria, had reached its boiling point. Four major and simultaneous reason are traditionally cited for the 1973 oil crisis:[14]

1) The formation of the organisation of the petroleum exporting countries (OPEC) between Iran, Iraq, Kuwait, Saudi Arabia and Venezuela, These countries were able to take control of their exporting capabilities away from the major oil companies at the time, and could therefore regulate the amount of oil available to the market. America at this time was a very oil dependent country, which gave these countries leverage in negotiations.

2) The Arabic - Israeli dispute, which arose in 1967, reached a peak when Israel continued its expansion into Palestinian territory. The two superpowers at the time, America and Russia, began to arm the side which they supported (America supported Israel, while Russia was in favour of the Arabic states), which culminated in a attack on Israel by Egypt and Syria on the holy Jewish holiday of Yom Kippur.

3) The Arabic states, incensed by America's public support of Israel during the Yom Kippur war in 1973, imposed an embargo on "Israeli sympathising countries". This caused mass shortages of oil in America and forced prices to rise.

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[14] The Oil Crisis: Fiona Venn pp. 7 - 10

4) Domestic problems in America, most notably the Watergate investigations regarding President Nixon's illegal activity, led to the resignation of the vice president Spiro Agnew. These had distracted the President and left his Secretary of State, Henry Kissinger, in complete charge of foreign affairs. Mr. Kissinger did not react quickly enough to the impending war in the middle east and the implications of an oil embargo. In fact, Mr. Kissinger has been accused of deliberately ignoring Nixon's orders to promote peace via a ceasefire between Israel and the Arab States, as well as delaying military assistance to Israel.[15]

The U.S Dollar had been continuously depreciating in value in the decade before the 1973 crisis due to inflation. Nevertheless, oil prices had remained relatively stable, representing a continuous loss in real value to the Arabic states for the oil which they sold. This was the main reason for the formation of OPEC i.e. the formation of a cartel which could artificially raise oil prices. (It is worth noting that private cartels are in violation of competition laws, however OPEC is considered an international commodity agreement between countries and is therefore far too large to oppose.) Following the tougher stance of the Arabic countries, America was willing to negotiate a rise in oil prices, however this meeting concluded without an agreement. The oil states then acted unilaterally, raising the price of Arabian light crude from $3.01 to $5.12 per barrel (representing a rise of over 70%), leaving America with very little bargaining power.[16] Oil was (and to some extent still is) a very inelastic good due to the lack of viable alternatives, which guaranteed the success of the OPEC formation. Likewise, America's need for oil had been increasing rapidly - simply put, America had become addicted to a commodity which was now owned by a cartel of Arabic states which could effectively exert monopolistic powers. The combination of America's necessity for oil and the sudden price increase had naturally a serious affect on its economy. Firstly, this import had become more expensive, signifying a shift towards a balance of payments deficit. Secondly, a price hike had to be passed on to the American public, showing the direct effect of foreign intervention on the American way of life. Furthermore, once the embargo had been placed on America, its main source for oil had disappeared. Rationing of oil became a prerogative, a national speed limit of 55mph was set in March 1974 and even ration stamps were printed in case of a prolonged embargo.

In the years preceding 1973 oil production has steadily risen, as shown by the diagram below. In particular, the oil production from the middle east was rising at a very fast rate between 1969 -1973, whereas oil sources from other areas showed comparably little or no change.

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[15] Ambrose, Nixon (Ruin and Recovery 1973 - 1990), pp. 255–6.

[16] The Oil Crisis - Fiona Venn - pg. 8

Historical Oil Production by Region, 1965 to Present

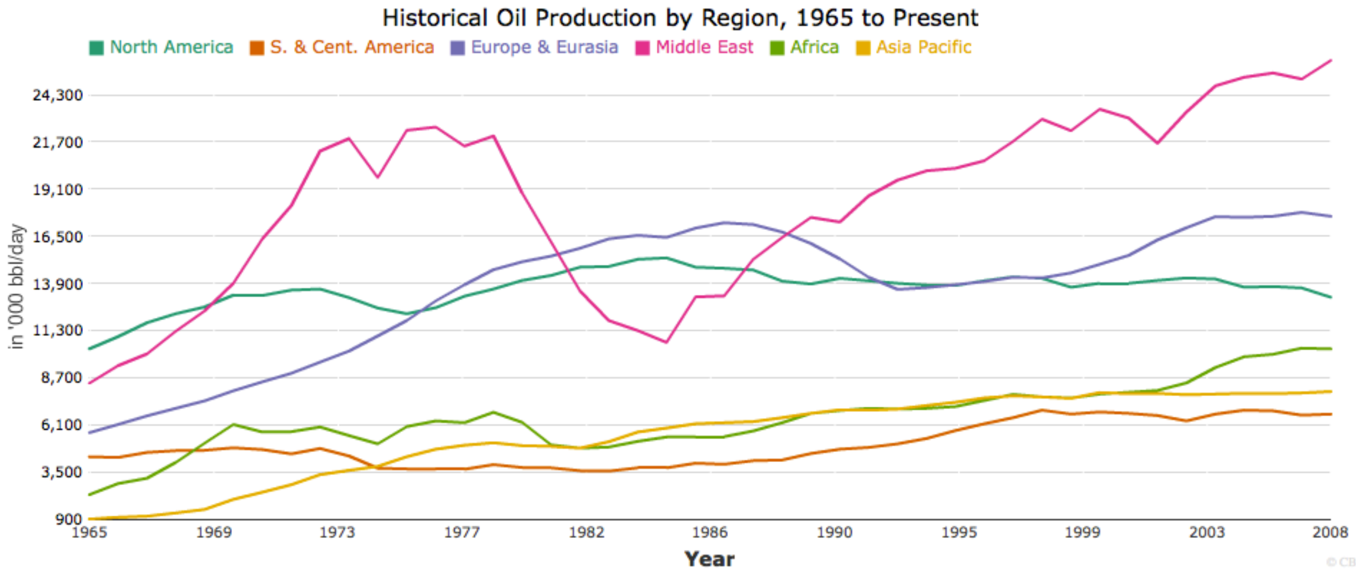

Table 4 Source: Chartsbin Website

To interpret this diagram correctly, an analysis of the perceived supply of oil is necessary. The table underneath therefore shows the effect on the economy when the supply of an inelastic good is restricted. Oil is considered to be relatively inelastic in supply for two theory based reasons: firstly, oil refineries cannot simply increase their production in the short run. Indeed, many restrictions are in place which would hamper the quick increase in oil supply, such as extra transportation required, maximum working hours of skilled staff, and the reluctance of the middle east due to the political tension between America and the Arabic States. Secondly, America could not simply supplement its Arabic oil supply with another source, e.g from North Sea oil, because those resources were already allocated and would not meet America's high requirements. As a result, it can be assumed that the supply of oil in 1973 was inelastic.

America can still obtain oil from other sources, but the action of the OPEC countries cut the supply significantly, resulting in a price hike.

The full implication of the price rise was established in January 1974, when the oil price was agreed at a price of $11.65/ barrel. Table 5 demonstrates the long run effect of a change in the elasticity of supply of oil, followed by a reduction in the overall supply available. A supply and demand sided analysis will be conducted independently of one another and then brought together in the final diagram for this section. For purpose of clarity when considering the supply side, we use an arbitrary demand curve. The purpose of this is to solely focus upon the supply aspect and to ascertain a conceivably accurate supply curve.

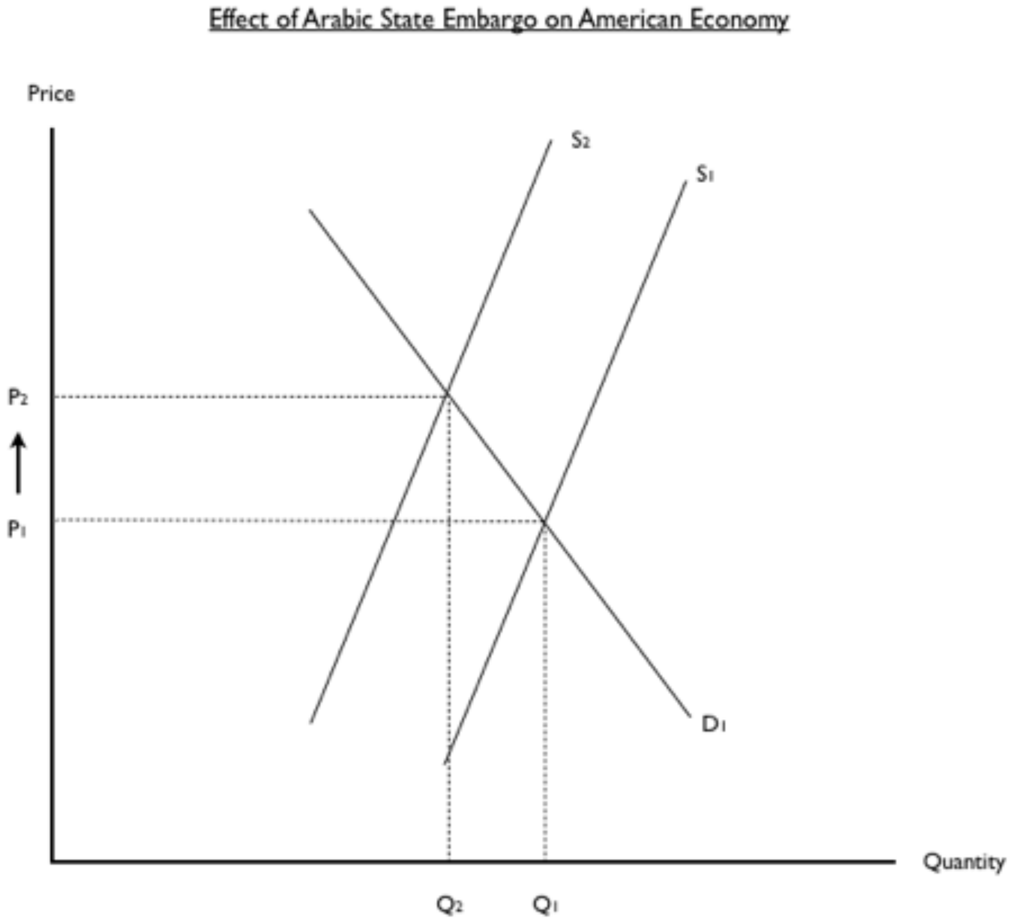

Table 5 Source: Financial Theory

The embargo placed on the U.S by the arabic states represents a shift in the supply curve to the left and a corresponding price rise. Clearly, America had a great dependency on Arabic States to continue supplying oil whilst negotiating a price which will see no hardship befall the American people.

When analysing the demand side of Arabic oil, it is worth mentioning that America was becoming increasingly addicted to oil at that time. Any new advancement in technology (especially in agricultural or manufacturing sectors) required oil, thus making the economy less adaptive to alternatives and the demand for oil more inelastic over time. Demand for oil was also becoming more fierce, as other western european countries were also improving their infrastructure and investing in technologies which required oil. Noticeably, total oil demand was rising at a greater rate than supply, a detailed depiction of which is shown in the two tables below. The first of these shows the increase in oil consumption per region. The oil consumption diagram shows an increase in demand in nearly every geographical area, especially in Europe and North America. The second table shows how this can be represented in a supply and demand diagram.

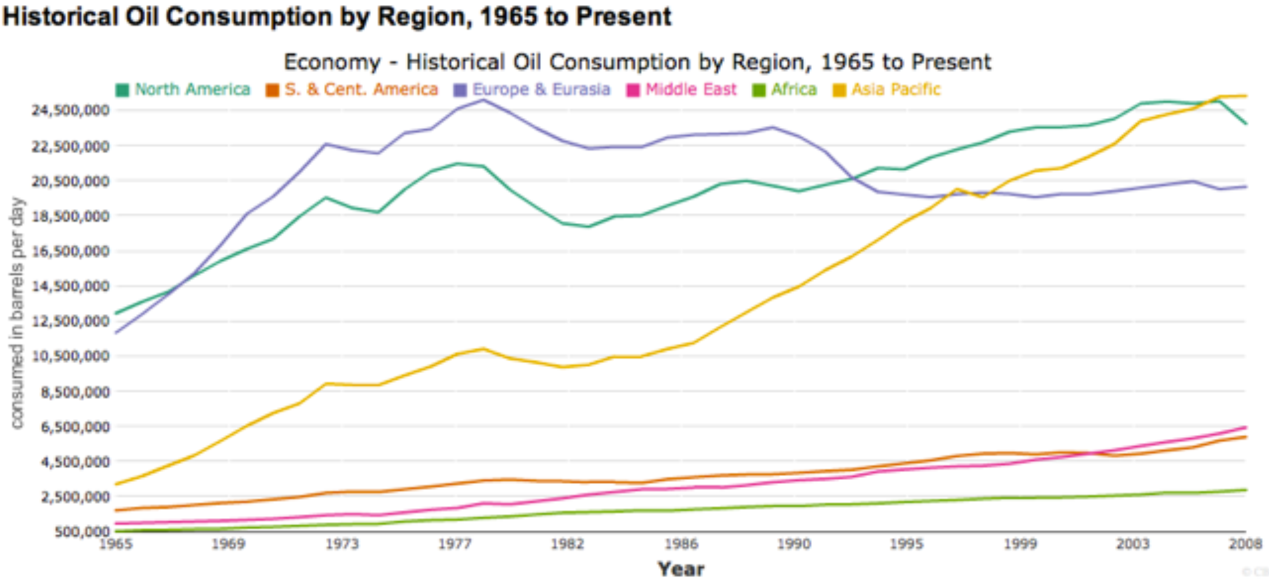

Table 6 Source: Chartsbin Website

Not only was the demand for oil increasing, but due to the adoption of new technology the inelasticity of the demand was also rising. As products become more inelastic, small changes in production can have larger effects on price levels. As a result, an imported inelastic product can present problems when supply shifts inwards. This is displayed in the table below.

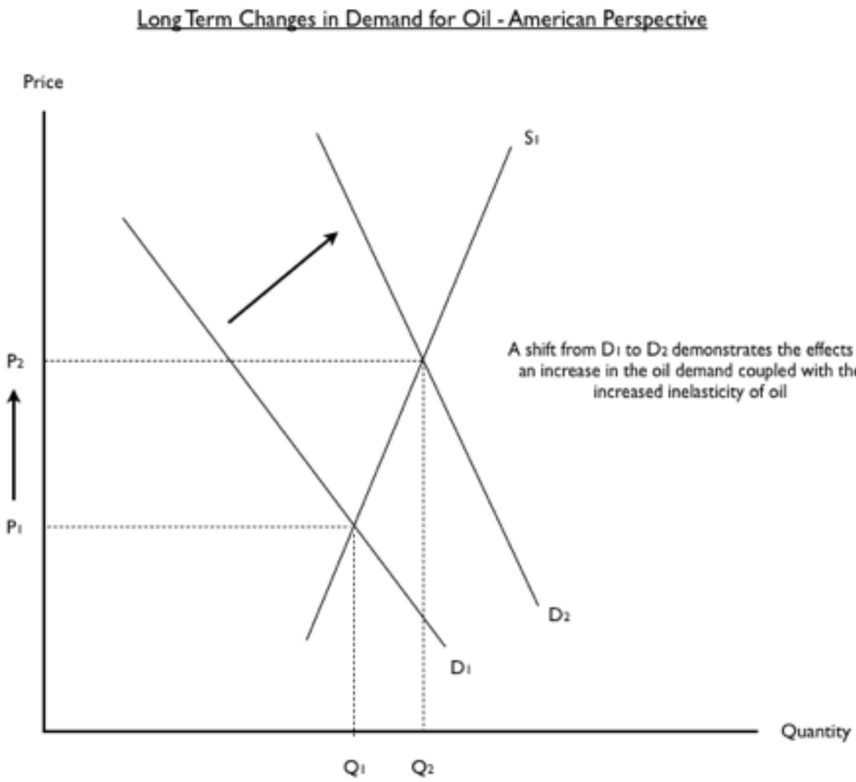

Table 7 Source: Financial Theory

Taking all supply and demand side factors into consideration (both of which independently justify a price rise), we can see the reasoning behind the severity of the price change in 1973 - 1974. Bringing the supply and demand side diagrams together therefore gives the following illustration:

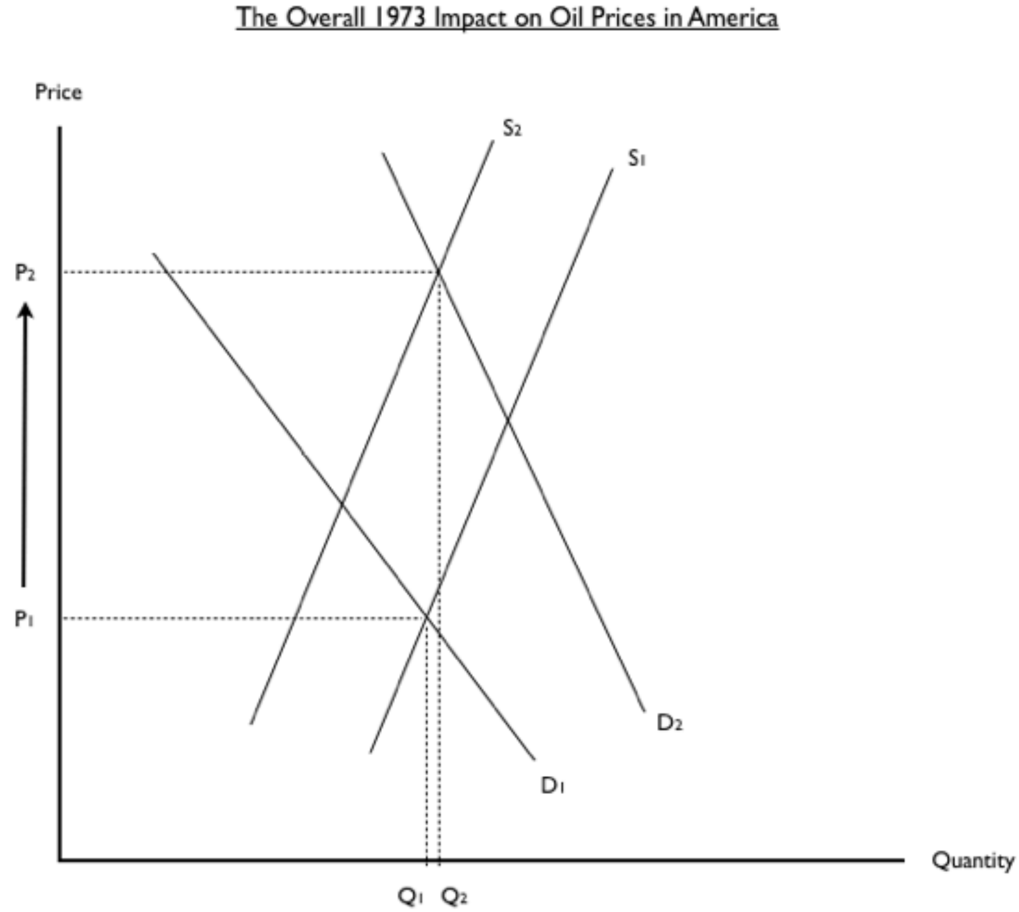

Table 8 Source: Financial Theory

The diagrams above show that real world events can be represented by economic theory, yielding the same results as in real life. Although the degree of the shifts in both supply and demand curves may not be to the exact extent as portrayed in the diagrams, the underlying trend is acceptable in explaining the dynamics of oil pricing.

The oil crisis in 1973 divulges some important information regarding the relationship between raw material prices and the economic welfare of developed countries. The fact that oil prices were previously set at an undervalued price exacerbated the problem when a readjustment occurred, leading to a price shock in America. If it is possible to create a mathematical equation to portray future financial crises, oil prices therefore should be considered as an independent variable. In addition, this event was the first concrete evidence to suggest that the actions of foreign countries can create financial difficulties in America directly. Since 1973, the United States has always kept a sizeable stockpile of oil, which is a form of risk mitigation should a similar event arise in the future.

2.4 The 1999 Dot Com Bubble and 2000 - 2001 Recession

The early years of the 1990's heralded a breakthrough in modern technology and the new age of e-commerce. The implementation of the internet meant that any member of the public could now buy or sell shares from the privacy of his own home at the push of a button - indeed the web was not just for surfing and obtaining information, it was a place to conduct business. As with the discovery of any new technology, many new firms arose as risky start up businesses eager for the first mover advantages and the capture of a share in a new market.[17] In order to fund these new companies, capital was provided by investors keen on finding that one 'gem' that would earn them extraordinary profit. Naturally, the idea of high growth in very short periods of time spread to Wall Street and the creation of a bubble occurred. A wave of IPO's valued companies at extreme levels. For example, the IPO of Ebay started at $18/share. By the end of the day this value had risen to $50/share, giving the company a market capitalisation of $2 billion.[18] Unbeknown to many investors, most of the companies were making huge losses, whilst others simply had no business to speak of whatsoever. The idea of dot-com companies was to 'get big quick', which was in particular the case with Amazon. In order to create a successful and interactive online company, many customers are required, a fact which Amazon clearly understood. As a result, Amazon continually cut prices to entice as many customers as possible, regardless of short term losses, which were in fact offset by capital provided by unaware investors and a rising stock price. Short term turnover and growth were the primary goals: even profits were sacrificed in the short term to achieve this aim.

Wall Street provided a speculative environment for dot-com shares, but never stopped to see the underlying foundations of these firms. The somewhat disturbing idea pointed out by many investors at the time was that if a speculator invested in multiple start up dot-com companies simultaneously, one of the group was 'bound to' take off with great success. The greed of 1929 had come roaring back, with short term payoff the prize. Indeed, extravagance also followed dot-com companies. Money was lavishly spent on opening days, advertising ($40 billion in stockholder cash in total was spent just on the advertising of one Superbowl by dot-com companies), the continuation of the illusion that value was being created. This was also

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[17] Pearson Education - First Mover Advantage - www. pearsoned.co.uk/Bookshop/article.asp?item=312

[18] CNET News 24/09/1998 eBay Roars into Public Trading - Dawn Karamoto and Cory Grice - http://news.cnet.com/eBay-roars-into-public-trading/2100-1001_3-215908.html

assumed as something which was going to last. Money managers too were caught up in the 'get rich fast' dream. Regardless of whether they had the prior knowledge and real facts and figures, these companies were being touted to investors as a much more secure investment that realistically. The main difference between the speculative bubble in 1929 and 1999 was the foundation of these companies. In 1929, the investment trusts that were speculatively bought had some underlying value, as the trust normally comprised of (or was based on) shares and bonds of stable companies. In 1999, the revenues of these companies and their stock prices were shockingly different. Companies which only made a few hundred dollars in sales per month had a total stock value in the millions. There was simply no basis whatsoever in these excessive prices and it was happening on a mass scale. In 1999 alone there were over 250 IPO's for dot-com companies.[19]

By the spring of 2000, doubt was beginning to creep in. The chairman of the FED, Alan Greenspan, decided that it was time to add some deflationary pressure to the dot-com bubble by raising interest rates in March 2000 to over 6%. A little over a month later on April 14th, 2000, the Nasdaq dropped by 355 points on what is still known today as Black Friday. Within a week it had lost 25% of its total value. Amazon dropped 19% in 1 day and subsequently decided to lay off 1300 employees.

Ebay and Amazon remain today as the 2 major success stories of the dot-com experiment. Nevertheless, between March 2000 and October 2002, $5 trillion in market value was lost through technology companies. The interest rate was then reduced to under 2% at the beginning of 2002 to stimulate the economy, which in fact was a precursor to the housing boom which followed.

In terms of potential causes for the dot-com crash which began in 2000, this could be considered a case of speculation simply running its course. Despite this, the increase in interest rates did create an extra pressure on the market when perhaps none was required. Furthermore, the lack of basic information that investors had served to exacerbate the problem as people simply were caught up in the speculative frenzy.

In his book titled "Origins of the Crash", Roger Lowenstein offers a supplementary explanation to describe the cause behind the dot-com crash: "the culture went bad".[20] This cultural vector consisted of four major shortcomings in the market, namely;

[19] Dot-Com Bubble Documentary - Crisis Watch Network

[20] Origins of the Crash - The Great Bubble and its Undoing - Roger Lowenstein

- Badly structured executive compensation
- Irrational investor exuberance
- Misleading accounting
- Inattentive gatekeepers

Luckily, this crisis was concentrated in one industry with little contagion. The real crisis was to happen a decade later. Lastly, the idea of getting rich quick has never eluded the common man and this repeated trend is worrying. How is it possible to avoid the consequences of a crisis if speculation is wild and irrational? As a result, speculation will be discussed further in this paper as a measure of forecasting a crisis, especially its link with any emerging technology or investment mechanism.

2.5 The Financial Crises of 2008

The financial crisis of 2008 had such a devastating effect that a National Commission was set up by the American government to ascertain the causes of such an economic downturn. Millions of people lost their jobs, homes and savings as a direct consequence of the financial crisis, whilst the national debt of the United States doubled. On 15th September, 2008, Lehman Brothers declared bankruptcy. As the crisis worsened, the governments direct intervention became increasingly necessary, and the troubled asset relief program (TARP) was ratified by congress through the Emergency Economic Stabilization Act of 2008 (EESA) to stabilise the financial system. The TARP program itself is described in detail on the United States treasury department and is graphically demonstrated below:

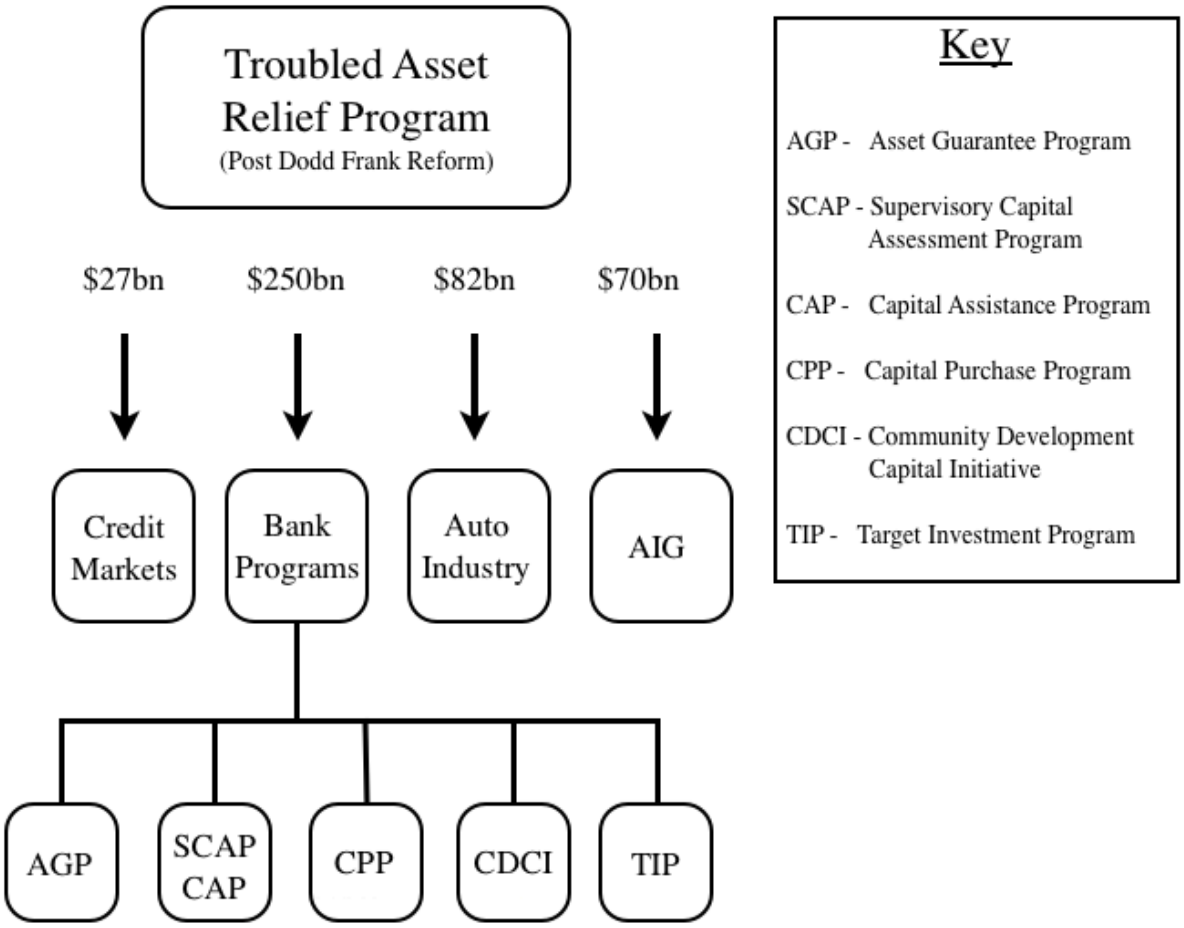

Table 9 Source: United States Treasury

Interestingly, the treasury website also includes a TARP tracker, which states that around 95% of all disbursed funds have been recovered (as of January 2013). [21]

Furthermore, the following list represents the largest takeovers/bailouts due to the financial crisis:[22]

Fannie Mae - $91bn government bailout (September 6th 2008)

Freddie Mac - $51bn government bailout[23] (September 6th 2008)

Merrill Lynch - Purchased by Bank of America (September 14th 2008)

AIG - $23bn Government Bailout (September 16th 2008)

Goldman Sachs Group Inc - $10bn (28th October 2008)

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[21] U.S Treasury Website TARP Tracker - http://www.treasury.gov/initiatives/financial-stability/about-tarp/Pages/default.aspx

[22] CNN Website - Bailed out Banks - http://money.cnn.com/news/specials/storysupplement/bankbailout/

[23] ProPublica Article - The Bailout: By the Actual Numbers - Paul Kiel 06/09/2012 - www.propublica.org/article/the-bailout-by-the-actual-numbers

JPMorgan Chase - $12bn (28th October 2008) (following its purchase of Bear Stearns in March 2008)

Wells Fargo and Co. - $25bn - Government Bailout (28th October 2008)

Citibank - $45bn Government Bailout (November 24th 2008)

Bank of America - $45bn Government Bailout (28th October 2008 and 16th January 2009) (second bailout following Merrill Lynch takeover)

General Motors - $27bn Government Bailout (Chapter 11 bankruptcy filed on June 8th 2009)

The commission set up to analyse the 2008 financial crisis produced a comprehensive explanation in their “Financial Crisis Inquiry Report”, published in January 2011, suggesting the systematic and simultaneous failure of various aspects of our economic environment. These are cited below[24]:

- We conclude widespread failures in financial regulation and supervision proved devastating to the stability of the nation’s financial markets.
- We conclude dramatic failures of corporate governance and risk management at many systemically important financial institutions were a key cause of this crisis.
- We conclude a combination of excessive borrowing, risky investments, and lack of transparency put the financial system on a collision course with crisis.
- We conclude the government was ill prepared for the crisis, and its inconsistent response added to the uncertainty and panic in the financial markets.
- We conclude there was a systemic breakdown in accountability and ethics
- We conclude collapsing mortgage-lending standards and the mortgage securitisation pipeline lit and spread the flame of contagion and crisis.
- We conclude over-the-counter derivatives contributed significantly to this crisis.
- We conclude the failures of credit rating agencies were essential cogs in the wheel of financial destruction.

Each of these points are explained in great detail and their individual influences are analysed. To understand the grassroots of the 2008 financial crisis, we need to look at the events post 2000. Following the dot-com crisis, interest rates were slashed dramatically which fuelled an increased demand in the economy. At the same time, the concept of subprime mortgage loans began to take off; in essence, the handing out of credit to those who are considered high risk and have little or no collateral with which to support their loans. One area which soaked up this excess demand was the housing sector in California. Similar to the aforementioned

[24] The Financial Crises Inquiry Report - Financial Report of the National Commission on the causes of the Financial and Economic Crisis in the United States

housing bubble in Florida in the 1920's, house prices in California showed an alarming year on year rise in value, which is shown below:

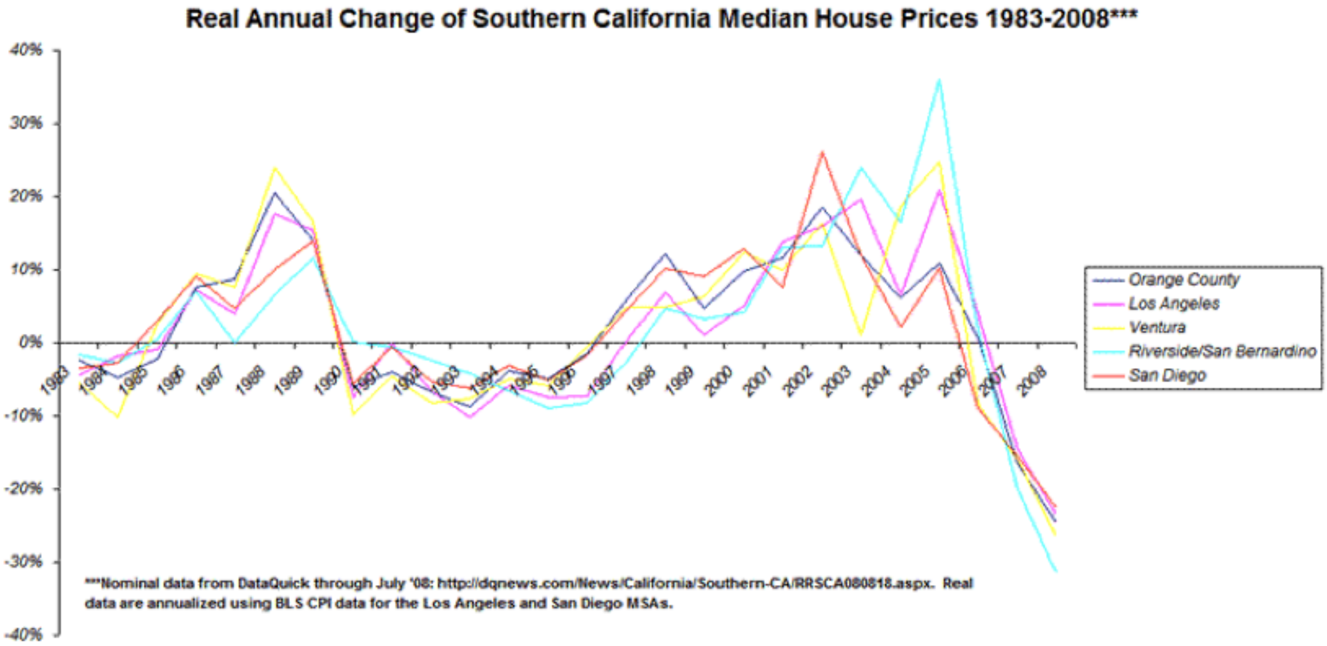

Table 10 Source: Dataquick Website - California Housing Data

Although the question remains whether Californian housing prices were previously undervalued, the magnitude of the price increases were so great that two main consequences arose. Firstly, speculative investments grew rapidly in this sector. Private investors were looking primarily to buy a property and wait a year, then sell it at an inflated price and pocket the difference for themselves. Again the similarities can be seen between this method of money making and the investment trusts in 1929. This form of investment acts as a self fulfilling prophecy - as the level of investment grows, prices rise and more investors enter the market, creating additional investment. The bubble was in this sense caught in an upward spiral. Secondly, the banks funding these investments were doing so with little or no precautionary measures. Traditionally, when collateral is used to give security to a loan, the maximum value of the loan is less than the value of the collateral itself. However, due to continuous price rises, banks helped fuel investments by offering credit lines to the tune of 120% of the value of the collateral. As long as the price of the collateral rises, this risk is mitigated, however in such a bullish market no provisions were made for alternative future scenarios. In essence, the number of under-collateralised loans was representing an ever increasing percentage of overall American housing market.

Additionally, between 2003 and 2005 there was a sharp rise in the percentage of subprime mortgages (from 8% to 20%)[25]. Subprime mortgages were considered especially risky due to the (justified) perceived inability of the lender to fulfil his/her debt obligations, and as the quantity of these types of loans increased, so did the overall risk within the market. However, the warning signs of the ramifications of subprime loans were discussed from the start. CNN Money reported in 2002 that banks and lending institutions were targeting specific minorities for subprime loans which had higher delinquency rates.[26] Sir Andrew Large, former deputy Governor of the Bank of England, argued that the increasing levels of risk in credit markets were unsustainable in his 2004 London School of Economics Speech, quoting:[27]

".....market participants need to be aware that financial stability starts with them. Integrity and sensible restraint are the bedrocks of stability. This requires heightened awareness that the leverage in the system as a whole, encouraged by the new risk transfer techniques, contains its own vulnerabilities."

8 other credit market experts who also foresaw the 2008 financial crisis were listed on CNN Money, all of whom safely moved their investments away from subprime markets before the crisis occurred.[28] Therefore, we cannot blame the crisis upon its unexpected nature, instead it is noticeable that negative forecasts were ignored and that the majority of financial institutions did a great disservice to the economy by their actions.

The is a precarious situation for private lenders is realised when the value of the collateral, in this case the property, ever decreases. Not only would the loan be recalled, the collateral in place to safeguard the bank from losses would never be able to cover the value of the loan. This otherwise contained housing bubble turns critical when we look deeper into the financing of these loans. Banks have already been shown to take excessive risks during a crisis, but it is the lenders themselves who facilitated the transition from a crisis in one industry to a global catastrophe. In order to mitigate their risks, loans were sold to investment banks, who then bundled them together with car loans, student loans, credit card debts, corporate debts and commercial mortgages. These were then sold on to investors as derivatives and termed "Collateralised Debt Obligations", or CDO's. Naturally, the reputations of these investment banks were exemplary, thus all these products were given the highest rating by credit agencies

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[25] 2009 Mortgage Market Statistical Annual, vol. 1, The Primary Market, pg. 4 "Mortgage Originations by Product"

[26] CNN Money website: http://money.cnn.com/2002/05/01/pf/banking/subprime/

[27] Sir Andrew Large - Financial Stability Oversight, Past and Present pg. 25 - 22/01/2004

[28] CNN Money - 8 Who Saw the Crisis Coming (2009) http://money.cnn.com/galleries/2008/fortune/0808/gallery.whosawitcoming.fortune/index.html

(AAA), who failed in their task of scrutinising what was actually offered to the market. Due to their apparent low levels of risk, these CDO's were particularly popular with pension funds. Furthermore, these shares and bonds were bought, packaged and repackaged by other banks/ financial institutions and sold once again to the market. This did not only occur in America, as financial products were being exchanged across many markets and countries. Instead, this was a worldwide and regular occurrence which continuously pushed up asset prices. As Mark T. Williams poetically writes, "every bank on Wall Street was still drunk on the overinflated real estate market" [29]

What was previously considered a form of risk mitigation turned out to concentrate risk at the biggest banks. Regardless of how credit markets bundle and diversify their risk, it does not mean that we live in a zero risk market. The probability of default of the loans on a case by case basis does not magically disseminate, and with a fixed number of large market players the risk of default will build up amongst them. Following the 2008 financial crisis, the process of unravelling these structured products has taken years. Companies which thought that they had successfully survived the financial crisis without exposure suddenly found themselves highly entrenched in toxic investments.[30] Once again the entire set of products available on the market were not properly checked - a major failure in financial auditing. Likewise, banks failed in their own corporate governance by adopting sloppy practices and selling toxic assets to the market, knowing full well what they were selling. The question arises why banks were allowed to do this and why no-one brought these practices to light. How can a private gain be translated into a public loss? How can a number of bankers make themselves unimaginably rich through speculation with depositors money? And most importantly, why is a government forced to bail out a market which has become so horribly corrupted by its participants? Unfortunately, two serious problems are found to explain this.

1) Employees themselves are not incentivised to report the actions of their banks, as their salaries are dependent on maintaining the status quo. Additionally, they are given bonuses based on volume of sales, therefore encouraging them to sell as many of these toxic products as possible. [31]

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[29] Uncontrolled Risk - Mark T Williams - page 185

[30] The Panic of 2008: Causes, Consequences and Implications for Reform - Lawrence E. Mitchell, Arthur E. Vilmarth, Jr. pg. 123

[31] London School of Economics online blog - The incentives of senior bank managers need to be altered in order to make them more risk averse - David Kershaw, Tom Kirchmaier, Edmund Schuster - 17/07/2012

2) Secondly, banks and their workers are terrified of losing out on a money making idea. As soon as the first bank starts bundling subprime mortgages and makes money by selling them, other banks will follow.

Senator Carl Levin, chairman of the Governmental Affairs Subcommittee which investigated the financial crisis, could not mask his rage when questioning Daniel Sparks, former mortgages department head of Goldman Sachs. Internal emails regarding a deal called Timberwolf, Goldman's top sale priority at the time, was referred by the head of its own sales division as a 's***** deal' and brought to light in front of the subcommittee.

*"How much of that s***** deal did you sell to your clients?" the senator asked*

*"How about the fact that you sold hundreds of millions of that deal after your people knew it was a 's***** deal?".*[32]

The answer provided by Mr Sparks was that he was selling products which were at market prices and for which investors had a demand. The ethical ramifications were not considered, nor were the long term potential risks that were being passed on knowingly to trusting clients. The banks simply had a breakdown of moral ethics, a trait which the ideal banker today needs to circumvent in the name of profit. This is the sad reality of the subprime mortgage market and could have easily been prevented. Goldman Sachs was later proven to be taking short positions on their own securities. Not only did they sell products which they thought were unwise investments, they also profited when their investors lost money on these structured products.

To clarify why these products were not immediately identified as high risk, it is important to note that a "bundle" is comprised of individual loans of varying risk levels. The fundamental idea behind this is that on average only a small percentage of the bundle will fail i.e. The "good" loans will be able to support the few bad apples. The downfall is not the financial mechanism itself, it is the risk of the overall portfolio of loans. As banks bought these products and resold them with a mix of their own loans, they systematically increased the overall risk of the portfolio to critical levels. Once the entire portfolio becomes a high risk liability, all individual loans, good and bad, are at risk of being recalled.

Throughout the years prior to 2008 there was a continuous trend of deregulation in the market. Regulators worked with banks instead of scrutinising them, and banks themselves

[32] Source - Senate Government Affairs Subcommittee - LIve on CSPAN news network

were defended by large legal teams specialised in circumventing the truth. Deregulation within the system itself in 1999 legalised the merger of large banks (shown by the creation of Citigroup), which was previously made illegal in 1933 - 1934. The downturn of 1929 was largely forgotten and the measures put in place to ensure no repeat of such a crisis were ignored, circumvented or broken. Alan Greenspan, chairman of the FED at the time, helped make it illegal for the derivatives market to be regulated by supporting the commodity futures modernisation act in December 2000, which allowed bankers to do as they pleased without liability. CDO's, credit default swaps, etc. were now pushed onto the market with ever increasing levels of toxicity.

Insurance firms and their design also played an important role in amplifying the effects of the financial crisis. If it were not for the insurance of CDO's provided by insurance companies such as AIG, such assets would never have made their way into the multifaceted world of pensions and savings funds which investment banks were selling. By insuring CDO's, insurance companies made themselves liable in the case of default, which is known as a credit default swap. Likewise, in the case of mass default, the insurance company itself would likely go under. On the other side, speculators were allowed to bet against the CDO's provided by the banks, which they did through the insurance firms. In essence, AIG and other insurance firms found themselves caught in the middle, owing money to both investment banks and market speculators. Additionally, there was no regulation in this market, as mentioned above, and insurance firms were not required to set aside provisions in case of defaults - they instead gave their employees obscene bonuses as soon as the CDO's were brought on to the books. With hindsight this is a case of incompetence and shortsightedness at best. As a result, AIG was effectively nationalised on September 16, 2008, when the U.S government obtained 79.9% of AIG shares in exchange for a $85 billion line of credit.

What makes this crisis particularly alarming is the capital structures of the investment banks. On April 28th 2004, banks were again deregulated and granted the ability to further leverage their capital structures. By 2008, some of the debt to equity ratios had reached a 40:1 ratio[33], meaning a 3% reduction in assets prices renders the bank insolvent. Yet despite the obvious risk, credit rating agencies Standard and Poor, Moody's and Fitch still rated these investment banks with the safest rating, AAA. Either the ratings agencies failed in their tasks of correctly identifying risk or the capital structures of these banks were being intentionally concealed.

The financial crisis inquiry report covers an extremely complex subject in great detail and cites the simultaneous problems which caused the crisis in 2008. However, the root causes of the crisis are apparent to all. The growth of subprime mortgages rose from $30 billion to $600

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33 Financial Crisis Inquiry Report - Conclusions of the Financial Crisis Inquiry Commission - pp.xix - xx

billion in a decade, the regulations were circumvented, and the bonus structures were based on the quantity of products sold rather than their quality. Bank employees were able to siphon off huge amounts of capital for their own personal use through bonuses, thus leaving a hole in the economy. This crisis was simply due to lack of responsibility and enticement of personal gain.

It seems with the crisis of 2008 that we have all failed to learn from our past mistakes. This paper is therefore inclined to make the following suggestions:

- That banking crisis are cyclical and therefore can be, at least in part, predetermined. The financial crisis of 2008 was worsened by the recklessness of the major market players in the financial markets and the lack of transparency which hid their actions.

- Free market economics, in its purest form, leads to financial ruin. The unobserved factor which is not considered in theory is that of human nature - i.e. the desire for individuals to accumulate as much wealth and power as possible. The more loopholes are found, rules are bent and ethics disregarded, the easier it is for humans to gain such prestige. Laws and regulation authorities help curb this greed. However, human influences on the banking system are far too short term and set levels of risk aversion well below prudent levels.

- Levels of regulation in the market can be used as an indicator to show how toxic the derivatives on sale are. There is an apparent trend between a reduction in regulation (enacted during boom periods) and an increase in defaults on derivatives. Ultimately, the only factor which resets the market to a level of greater regulation is the onset of a crisis.

As a final point to this crisis, it has been well documented that the majority of the time banks wittingly misrepresented the products which they were promoting and even taking short position on products recommended to clients. One internal email written by Countrywide's Mozilo was so outrageous it was included in the 2008 Inquiry Report, stating:

"In all my years in the business I have never seen a more toxic product.......there was a time when savings and loans were doing things because their competitors were doing it.....they all went broke".[34]

[34] FInancial Crisis Inquiry Report - pg. 20

2.6 Analysis of the Current World Economy

The following information provided is sourced from over 2 years of newspaper articles, working papers and books regarding the current situation of the American economy. Today, the United States economy is at a crossroads and market expectations have never been so conflicted regarding this issue. This section will look at the independent variables which either caused previous financial crisis or the consequences of them, and will attempt to ascertain the implications for the future of America. The purpose of this is to attempt to isolate the base factors which could cause or have an effect on a crisis, and in turn the knock-on effects of these variables on financial systems and economies.

2.6.1 Interest Rates

Interest rates are regulated by the Federal Exchange Reserve in order to to stabilise the economy and smooth the boom/bust business cycle. It is quite a simple mechanism to understand: if the economy is in a boom period, interest rates rise. This means that is it more profitable for people to save their money rather than spend it, as the interest they receive will be nominally higher. Additionally, mortgage repayments will increase which allows aggregate demand to drop and prevents the economy from overheating. If consumption were instead allowed to continuously rise, inflation levels would also increase, causing further problems such as the erosion of the value of savings. The opposite occurs during a recession: interest rates are reduced, mortgage payments decrease and households have more disposable income with which they are inclined to consume good with. This raises demand in the economy and stimulates growth.

Furthermore, when considering capital flows (of investors), they generally move towards safer countries with higher interest rates. This highlights the potential benefits of high interest rates, as it emphasises the long term benefits as opposed to short term gains. Unfortunately, as elected officials only enjoy short terms in office, any long term endeavours are often overlooked.

In contrast to the general theory, the boom of 2004 was the first of its kind whereby interest rates were kept at a relatively low rate. This has two detrimental consequences; firstly, the boom period was prolonged and allowed for a sizeable bubble to form. Secondly, when the crisis arose, the Fed was unable to lower the interest rate any further, therefore negating the one tried and tested measure for bringing the economy back to prosperity. This is shown graphically below:

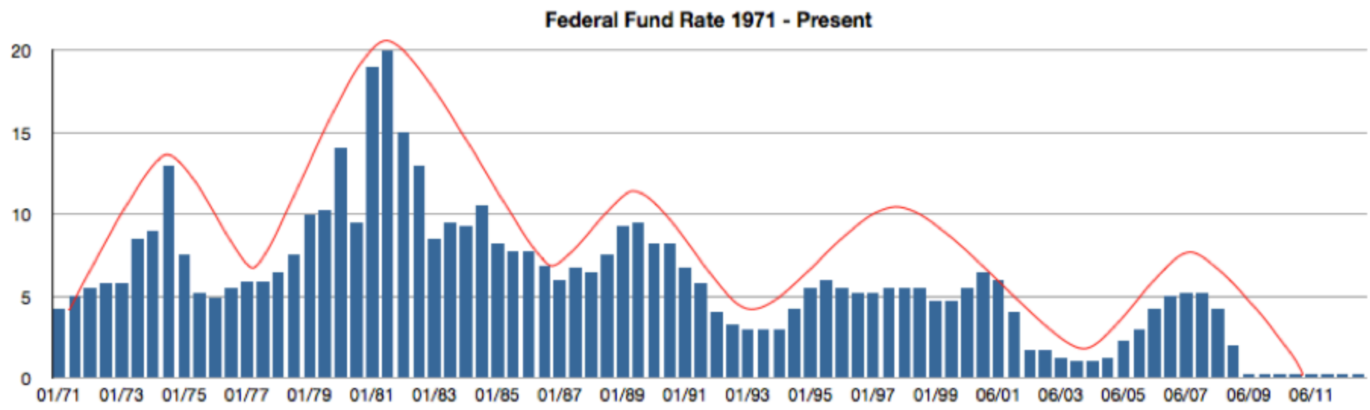

Table 11 Source: Federal Exchange Reserve Data

It is very clear to see an underlying trend in the rise and fall of interest rates, which is shown to be more volatile in the 1970's and 1980's than today. However, a secondary trend is also visible, namely the general accumulation of a large budget deficit over time (represented by the red line). Interest rate reductions post crisis do not generally return to their pre crisis levels, suggesting an overall downward spiral of interest rates over time. This is particularly interesting, since the interest rate has remained the same for the last 3 years. If it were possible to decrease the interest rates further, it is likely that the Federal Exchange would have done so. Instead, this is the first time that during a recession the FED has no further room to stimulate growth through the use of interest rates, and this failure to reduce interest rates during a recession could cause greater economic problems, such as a double dip recession. It is abundantly clear however that the 2008 recession is still not over, 4 years since its emergence. Low interest rates generally have a positive effect on economic growth, however at present the grassroots of economic growth are very slow to emerge despite record low interest rate levels. It is therefore safe to suggested that we have unnecessarily used up the benefits of low interest rates between 2000 - 2004 and are suffering today for previous excesses.

The main question which arises is whether the Federal Exchange can use the interest rates any further to improve the economy, create jobs and promote growth. A Wall Street Journal article regarding this topic came to the conclusion that the Federal Reserve has two possible measures which it could undertake. Firstly, the FED could launch a new bond buying program to reduce long term interest rates and boost growth. Alternatively, the FED can raise short term interest rates sooner than planned to restrain inflation. The second option looks unlikely, as interest rates have remained rock bottom for the last few years. A reduction in the long term interest rate is a clear sign that the FED is trying to encourage consumption in the market, thus leading to demand fuelled growth in the short run. The reduction of long term interest rates may however be a dangerous option, as people could simply invest in a different country with higher interest rates and reduce the liquidity of the American dollar.[35] The other extreme which could occur has only previously happened once in Japan, who attempted to encourage savers to spend by setting negative interest rates. Whether the FED will revert to this measure seems also unlikely unless demand tails off and growth falters. Nevertheless, what we can observe from this analysis is that a reduction in the short term interest rate sufficed to set the economy on the road to recovery in previous crises, which was not possible in the 2008 financial crisis.

Demand led growth through low interest rates does pose some risks. Does the average consumer have the reserve capital available to help boost the country's aggregate demand? Have consumers become more risk averse following the financial crisis and the effects which are still evident today? If such growth does occur, for how long can it be sustained? Consumers obviously can't continuously spend their savings, which suggests that consumption led growth is only short term and offers no lasting solution.

2.6.2 The Money Supply - Money Creation and Expansion

Monetary policy consists of three main subjects - control of the interest rates, control of the money supply and exchange rates. Since exchange rates today are floating and cannot be fixed and interest rates cannot go any lower, the FED is currently only able to use the money supply as an economic stimulant i.e. by printing money. It is important to note that the Federal Reserve is an "independent entity within the government". It has a public duty, but is not dictated by policy from Washington.

So how does the American government and Federal Reserve go about making alterations to the money supply? In 1992, the Federal Exchange released a paper titled 'Modern Money Mechanics', which describes the creation of money and the interrelationship between the Federal Exchange, the American government, banks/financial institutions and the local public. Additionally, it clarifies exactly how banks are able to create money through the fractal/ federal reserve system and the mechanism which enables this.

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[35] Wall Street Journal - Economic forecast to hint at the Federal Reserve's next step - John Hilsrath 23/04/2012

When the United States government decides to increase the money supply, it exchanges (sells) government bonds to the Federal Reserve for 'promissory notes' i.e. cash. Of course this is no longer a tangible transaction, as it is all done electronically. The government then deposits these notes in financial institutions, such as banks, and thus the new notes are added into the money supply. Financial institutions then make this money available to the public in the form of loans and other credit lines. This is shown in the diagram below:

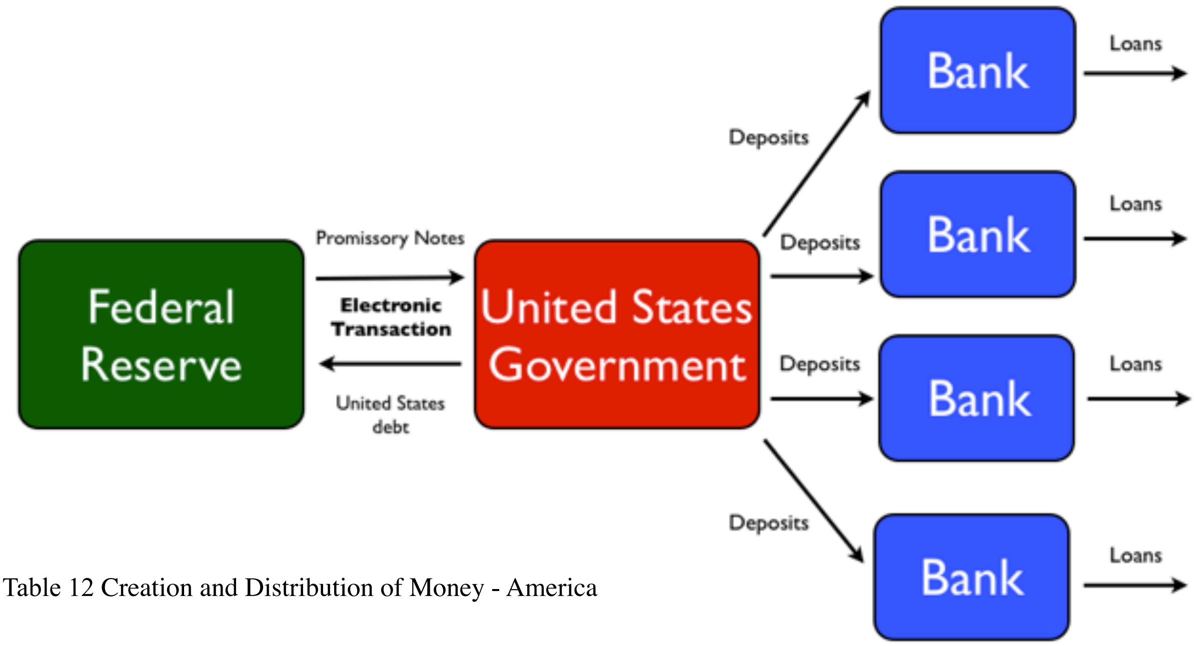

Table 12 Creation and Distribution of Money - America

The United States government is in fact purchasing dollars in exchange for promissory notes (i.e. debt obligations). In some ways this seems to be a self defeating mechanism, because when the government is required to pay the debt back, the only method it has available is to take out more debt to pay off the old one. Furthermore, the government is obligated to pay interest on the debt which it accumulates. As a result, when interest payments are due to the Federal exchange, the government is forced to increase the money supply further. For this reason, the money supply is always increasing, and is forced to do so at ever increasing rates. Since the Federal exchanges inception, the dollar has depreciated in real value by over 96%, showing the effect of this continuous expansion.

On the Federal Exchange website, a video titled "is the Federal Reserve printing money in order to buy Treasury Securities" explains that 'Global demand for Treasury securities has remained strong, and the Treasury has been able to finance large deficits without difficulty'.

Therefore it is important to note that the trade is not just between the Federal Reserve and the United States government - external financing is also present.

The real trick behind the money expansion stems from the amount of liquid capital that a bank is required to keep in its reserves (Liquidity Coverage Ratio). Due to new regulation laws such as Basel III, this figure is now 10% for institutions with transaction orientated core deposits of over $71 million in America.[36] When a customer deposits money in a bank, for example $100,000, 10% of this ($10,000) is kept as liquid capital, whilst the remaining 90% is available for loans to other customers. When customers take out loans, they generally don't take them out in cash form - instead they are deposited into another bank account. The recipients of payments would also deposit their gains the same way. The process then repeats itself; 10% from the $90,000 is isolated and the remaining amount ($81,000) is provided in the form of loans once more.

Money Deposited	Money Isolated	New Credit Provided for New Loans	Cumulative Increase in Money Supply
1,000,000	100,000	900,000	1,900,000
900,000	90,000	810,000	2,710,000
810,000	81,000	729,000	3,439,000
729,000	72,900	656,100	4,095,100
656,100	65,610	590,490	4,685,590
590,490	59,049	531,441	5,217,031
531,441	53,144	478,297	5,695,328

Table 13 - Iterative Process of Money Expansion

"Changes in the quantity of money may originate with actions of the Federal Reserve System (the central bank), depository institutions (principally commercial banks), or the public." [37]

"For example, if reserves of 20 percent were required, deposits could expand only until they were five times as large as reserves. Reserves of $10 million could support deposits of $50 million. The lower the percentage requirement, the greater the deposit expansion that can be

[36] SmartRamps Commentary, March 2012 - Basel III - What Does It Mean for Core Deposits - http://www.mpsaz.com/common/files/MPS%20SmartRamps%20Commentary%20for%20033112.pdf

[37] Modern Money Mechanics - A Workbook on Bank Reserves and Deposit Expansion - Federal Reserve Bank of Chicago - pg. 3

supported by each additional reserve dollar. Thus, the legal reserve ratio together with the dollar amount of bank reserves are the factors that set the upper limit to money creation."

If we continue this iterative process, we find that through a fractal banking mechanism a bank can increase the money supply by up to 9 times what was initially deposited with a 10% reserve rate. Naturally, this mechanism has come under criticism and that banks are creating money "out of thin air".

2.6.2.2 The Effects of Monetary Expansion

Do increases in the money supply actually move economies closer to greater recessions? According to Forbes magazine contributor Michael Pollaro in 2012, we experienced 39 consecutive months of "*double digit year-over-year rates of monetary inflation"*.[38]

"By distorting interest rate and price signals and, as a consequence, creating malinvestments that must eventually be liquidated, monetary booms ALWAYS end in economic busts."[39]

This perpetuity of money creation has many doubts, such as whether the money really reaches its intended target, the onset of high levels of inflation and the uncertainty if indeed demand will be stimulated by increasing the supply of money. Most recently, the United States government authorised the Troubled Asset Relief Program (TARP) on October 14th 2008 in order to shore up the failing markets and provide short term liquidity. Under this program, the treasury was given permission to "purchase up to $250 billion of senior preferred shares on standardised terms"[40]. In essence, $250 billion was provided to the market to purchase shares, thus increasing the monetary base (M0) by nearly 20%.

In addition, the dollar is being used by banks as a 'store of value' rather than a medium for transactions. Once again, we see that there are unique factors in the current economic climate which seem to suggest that this crisis and recovery effort are different from past ones. We can also infer that the increase in the money supply now has not achieved its originally desired effect, i.e. growth stimulus.

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[38] Forbes Magazine - Money Supply booming, seeds of the next Greater Recession - Michael Pollaro - 17/03.2012 - http://www.forbes.com/sites/michaelpollaro/2012/03/17/money-supply-booming-seeds-of-the-next-greater-recession/

[39] ibid 39

[40] Federal Reserve Website - www.federalreserve.gov/bankinginforeg/tarpinfo.htm

If an increase in the money supply only serves a 'store of value' purpose, what causes inflation? The rise in the price of goods and services must then be caused by either 'demand pull' (increases in demand for products) or cost push (increases in firm costs are passed on to consumers) forms of inflation. Of these, cost push inflation is the most likely, as demand seems to have trailed off somewhat since its pre 2008 highs. Wages also have not increased to levels which would suggest demand pull inflation.

Let's take for example the changes to the money supply post 2008. According to the Federal Reserve website, the Fed itself has purchased government backed bonds and long term securities to the value of $1.7 trillion between the end of 2008 and the early months of 2010. The idea behind this was to raise asset values and reduce the long term interest rate, so that credit was more readily available and cheaper to the public, inducing growth. However, as output stuttered and unemployment remained at just under 10%, the FED agreed a second round of securities purchases to the sum of $600 billion in November 2010. It is important to notice that the FED stresses its actions as a short term measure only, which predicts a serious reduction in the money supply in the future. When this occurs, a strong recessionary pressure will be put on the economy. Therefore, it is important to ascertain when the FED feels it necessary to contract the money supply, as this may be the catalyst for the next crisis. The figure below shows the growth of the monetary base, M0, which denotes the quantity of currency and central bank reserves in the market. The significant rise in the money supply after 2008 is very noticeable and deviates from the trend set by the preceding three decades.

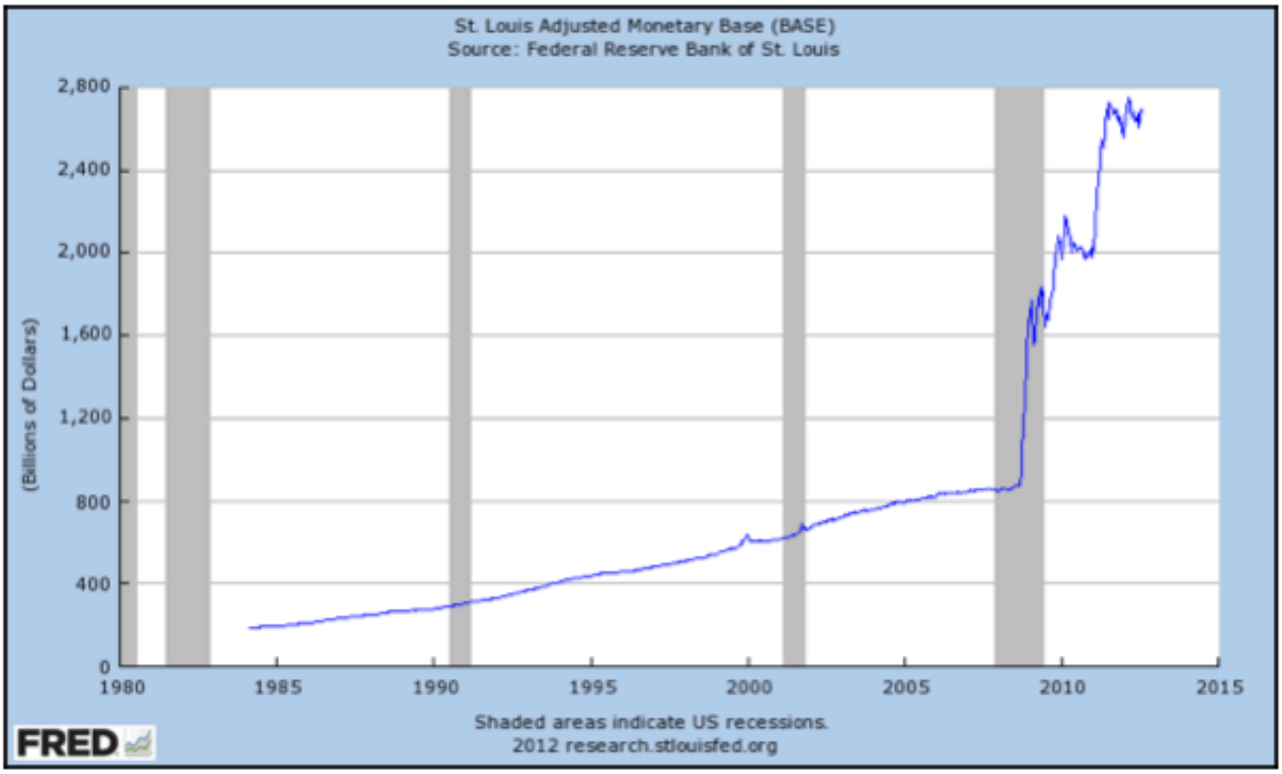

Table 14 Source - Federal Reserve Bank of St. Louis http://research.stlouisfed.org/fred2/series/M1?cid=25

The most startling fact is the extent in which the money supply has had to increase in order to simply stabilise the American economy. When the apparent money supply contraction occurs, the biggest world recession will begin. The future contraction is explained on the Federal Reserve website: “The U.S. currency has expanded at only a moderate pace in recent years, and the Federal Reserve has indicated that it will return its securities holdings to a more normal level over time, as the economy recovers and the current monetary accommodation is unwound”.[41]

Additionally, the increase in the U.S monetary base in 2008 is an alarming signal as the FED is directly attempting to influence markets by making credit as cheap as it can. The most obvious impact of this is a depreciation of the currency, both internally in domestic markets (inflation) and also in FOREX ones. The following table demonstrates the exchange rate difference between the dollar and the euro both before and after the financial crisis. It is worth mentioning that the eurozone has also had its economic difficulties and adopted its own measures of quantitative easing, meaning that the depreciation of the dollar shown takes into account the inflationary pressure in Europe as well. A significant depreciation in the dollar is visible at first when the TARP funds were first disclosed, however following the quantitative easing which followed in europe, the dollar euro exchange rate fell to pre 2008 levels. The table below shows the fluctuation of the euro - dollar exchange rate between 2006 and 2012.

Table 15 Source - European Central Bank

[41] Federal Reserve Website - http://search.newyorkfed.org/board_public/search?text=TARPandSearch.x=0andSearch.y=0

This diagram displays a number of important points. Firstly, it shows that the financial crisis of 2008 was truly global and that the Eurozone merely experienced the same crisis later than America. Secondly, it demonstrates the inflationary pressure of the TARP funds. Between 2007 and 2008, the exchange rate rose from €1:$1.30 to just under €1:$1.60, an increase of 23%. Lastly, it is important to notice that FOREX levels before and after a crisis remain almost the same, however the volatility of the exchange rates rises during the crisis. Has the unravelling of leveraged buyout debt been completed and reflected fully by the exchange rate? According to the Wall Street Journal, European countries are set to feel the weight of the maturity of leveraged buyout debt (2012 - 2016), something which may have a significant effect on the exchange rate.[42] England has the largest european leveraged buyout debt debt, totalling $172 billion, whilst Germany ($83 billion) and France ($86 billion) are heavily exposed. Countries which already have had their financial viability questioned, such as Italy ($31 billion) and Spain ($25 billion) also have some exposure. The effect of this will land solely on the common currency, i.e. the euro, which is predicted to continually depreciate in value.

Similarly, the sudden increase in the money supply should theoretically lead to large inflation within the American economy. As supply of money and credit levels increase, so should consumption and aggregate demand. Instead, we notice that banks are using capital as a store of value, investing the additions to the money supply in stock and bonds rather than by easing credit restrictions and passing liquidity on to small businesses, investors and consumers. The short term inflation levels following the availability of TARP funds was in fact negative, reflecting this point, as shown below.

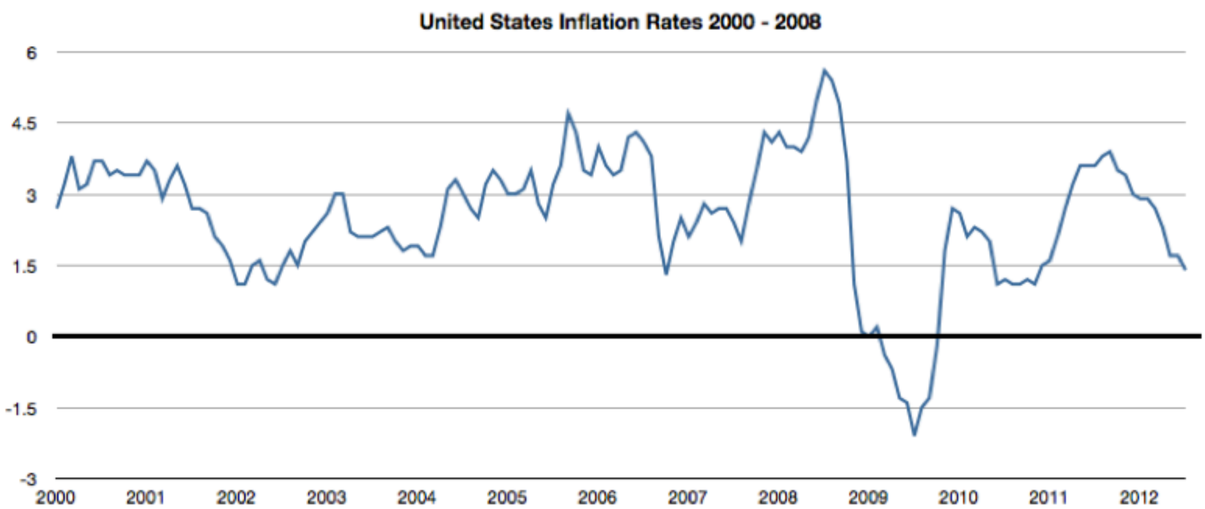

Table 16 Source - European Central Bank

42 Wall Street Journal - 06/03/2012 - Clock Ticks on European Buyout Debt - Dana Cimilluca

The United States has now reached the same inflation levels as before the 2008 crisis. Does this mean that another crisis will occur soon? The answer to this is unknown, as the set of circumstances are unique - this economic situation has simply never happened in the past, therefore any prognosis is difficult to estimate. It is even harder to predict what the FED will do next with the monetary policy. The figures from 2012 seems to suggest that the United States economy is once again slowing down, which would require a further injection of liquidity into the market. However, this is proving to have little or no effect anymore. Furthermore, interest rates are as low as they can go. The search for a method to stimulate growth in the American economy may have to lie elsewhere.

In April 2010, the International Monetary Fund released a paper describing its future vision by endorsing the issuance of a global reserve currency called Bancor[43]. The following statement is taken directly from this paper:

"The global central bank could serve as a lender of last resort, providing needed systemic liquidity in the event of adverse stocks and more automatically than present. Such liquidity was provided in the most recent crisis mainly by the United States Federal Exchange, which however may not always provide such liquidity."

This currency, once suggested by Keynes and E.F. Schumacher during the formation of the International monetary Fund, would by created to cover the worldwide spectrum that the Federal Exchange covers only in America today.[44] In essence, it would obsolete all currencies and with its implementation would alter our methods of analysing financial crises. To further this point the subsection regarding debt levels and the role of the Federal Reserve in money creation is considered.

This prognosis of this paper is that such sudden increases in the money supply could have serious ramifications. It is important to remember that inflation acts as a hidden tax on consumers, as they have to sacrifice more of their income to cover their costs of living. If such large levels of quantitative easing do result in high inflation rates, we will observe not just a decrease in disposable income and standard of living, but also the stagnation and decline in aggregate demand, leaving the economy in a much longer and deeper recession. Alterations to the money supply therefore have a significant impact on the forecast of future crises.

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[43] IMF - Reserve Accumulation and International Monetary Stability - April 13, 2010 - Reza Moghadam

[44] Multilateral Clearing - E.F.Scumacher - http://www.cui-zy.cn/Recommended/次贷/SchumacherClearingKeynes.pdf

2.6.3 United States Debt Levels

The debt level of the United States has been well documented in the run-up to the upcoming election and remains a focal point of both campaigns. The “economic collapse blog”, an online website which comments on the United States economic structure, revealed a milestone which has now been passed in America: it is now mathematically impossible to pay off the United States national debt with current dollars in circulation, as it has now surpassed the total dollars in existence today.[45]

In the previous section, it has been clarified that the money supply is continuously increasing as a result of the necessity to support interest repayments. The most important point to realise is that money is created through the increase in government debt. As one rises, so does the other. Consequently, debt levels are ever increasing, as does the overall interest accrued on the debt. In the future America will simply be unable to cover the interest repayments, which will naturally will lead to a default and the inevitable bankruptcy of America.

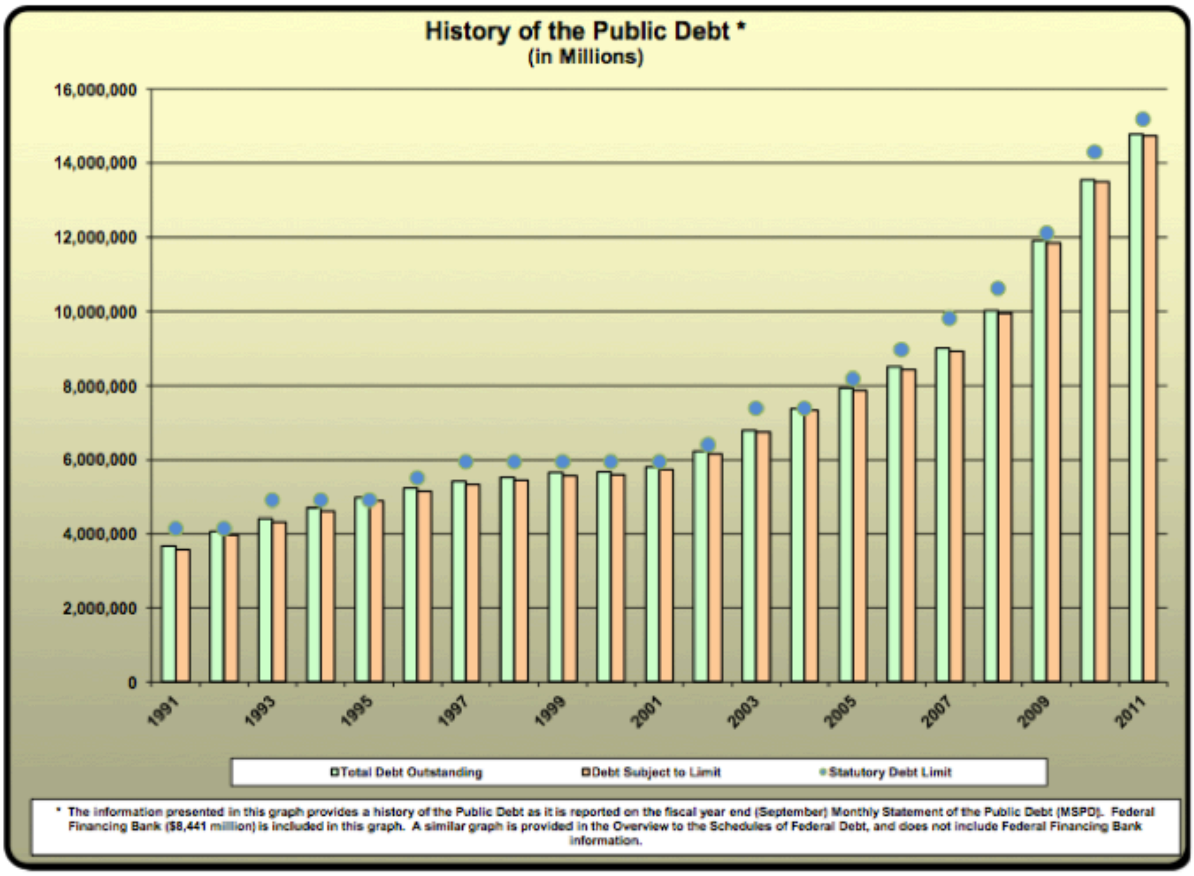

Table 17 - History of United States Public Debt

[45] Economic Collapse Blog - It is now Impossible to Pay off the U.S. National Debt - 04/02/2010 - http://theeconomiccollapseblog.com/archives/it-is-now-mathematically-impossible-to-pay-off-the-u-s-national-debt

Since this is such a devastating outcome, a closer look at America's public debt is needed. Public debt itself comprises of the aforementioned debt cumulated from the Federal Reserve and intra-governmental debt, which is non marketable. Currently the United States has a total government gross debt of $16 trillion, representing 110.17% of its GDP[46]. This is a marked increase, as the public debt had only breached the $6 trillion boundary at the turn of the century. Furthermore, this current figure is now greater than the entire output of the United States in a year, which shows an increase in default risk. President Obama has requested a rise in the debt ceiling three times since his election, showing that America is struggling to maintain its own debt restrictions. The most recent deadline (termed in the news as "sequestration") could not be agreed upon (03/03/2012) and has resulted in immediate budget cuts of $85 billion dollars, which includes cuts to education and the military. The frailty of negotiations between both the Republicans and the Democrats is shown here, whereby both parties and the economy suffer through the inability to reach a compromise.

It is also very important to distinguish between foreign debt to GDP and government debt to GDP ratios. The CIA website explains these two terms as follows:[47]

Foreign debt to GDP: This reflects the foreign currency liabilities of both the private and public sector and must be financed out of foreign exchange earnings.

Government debt to GDP: The cumulative total of all government borrowings less repayments that are denominated in a country's home currency.

At present, the United States has a 101% foreign debt ($10.9 trillion) to GDP and 100% government debt to GDP ratio ($10.8 trillion).[48] Despite the fact that other Eurozone countries have debt to GDP ratios which exceed those of the United States, it is the nominal value of the debt that has become so worrying, and more important how this debt is to be repaid. The BBC website also mentions that *"although Asia - primarily China and Japan - holds the majority of US debt, Europe has the second largest percentage.[49] This means whatever happens in the eurozone will have a deep impact on the US banking system."* From this statement we can infer that there is an interrelationship between the resurgence of American and European economies and that they are now irrevocably tied one another.

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[46] International Monetary Fund - World Economic Outlook Database - Report for Selected Countries, Government Gross Debt as percentage of GDP - http://www.imf.org/external/data.htm

[47] CIA Website - https://www.cia.gov/library/publications/the-world-factbook/rankorder/2186rank.html

[48] BBC Website - Who owes what to whom? - http://www.bbc.co.uk/news/business-15748696

[49] BBC Website - Who owes what to whom? - http://www.bbc.co.uk/news/business-15748696

When determining if a future crisis can be caused by public debt, the amount owed in interest is of great importance. This can assess whether America is able to raise capital and repay the interest payments on its debt - until now, it has been able to cover its obligations by raising the debt ceiling. In 2011 the interest on American public debt alone was $454,000,000,000.[50] Only time will be able to tell if this tactic is going to be continuously successful, inevitable it will come to a point where investors perceive Americas default risk too high. Unfortunately in terms of predicting a crisis, public debt increases are reactionary and only occur after the crisis has been realised.

On the other hand it is possible to analyse the willingness of other countries (such as China) to finance America's debt. Tom Orlik and Bob Davis wrote an article for the Wall Street Journal in march last year titled 'China loses some taste for dollars'[51], clarifying China's increased holding in the euro. The result of China reluctance to further invest in American dollars facilitates the necessity for rising interest rates to find alternative investors, which would deflate the United States economy further. The treasury recently released figures showing that foreign holding of American dollars have increased by 8%, to $1.26 trillion, over the course of 12 months (Jan 2012 - Jan 2013),[52] As a precautionary measure it seems that China is trying to diversify its portfolio of foreign held securities and currencies, which shows a strong signal to the market.[53]

The Wall Street Journal has also reported on the American national debt, which is described as the next big problem.

"Todays problem in the United States is unemployment and tomorrow's is the exploding national debt which has not yet been tackled." [54]

If the necessary cuts are not made, taxes and interest rates are likely to rise in the future. The American government is in the process of deciding between short term pain through cutting public debt levels and the longer term pain from tax hikes and higher interest rates. Naturally

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[50] Treasury Direct Website - Interest Expense on Debt Outstanding - http://www.treasurydirect.gov/govt/reports/ir/ir_expense.htm

[51] China loses some taste for dollars - Tom Orlik and Bob Davis WSJ 02/03/2012

[52] US Treasury Website - http://www.treasury.gov/resource-center/data-chart-center/tic/Documents/mfh.txt

[53] Forbes Article - China Reduces U.S Debt Holdings Again - 16/02/2012 - Kenneth Rapoza - http://www.forbes.com/sites/kenrapoza/2012/02/16/china-reduces-u-s-debt-holdings-again/

[54] Wall Street Journal - The Deficit Dilemma and Obama's Budget - Martin Feldstein 15/11/2011

this is a difficult choice. Cutting expenditure today could stifle the economy, whereas a delay could have an equally negative impact if debt levels are allowed to rise.

2.6.4 Fiscal Policy

Having already focussed upon the monetary policy and its application in todays world, it is also important to look at the fiscal policy of America in relation to crisis forecasting and prevention. The United States fiscal strategy is particularly difficult to unravel, as its policies are always in collusion with politics. The current deadlock between the Republicans and Democrats concerns debt management, how to reduce the deficit, and (most importantly) the specific areas which need reforming. The recipients of government spending and those who bear the brunt of taxation is also fiercely debated.

Politics in the United States has one extra difficulty, namely that the cooperation of both parties is a prerequisite for any policy to be implemented (the House of Representatives is Republican controlled, the Senate is Democrat controlled). In many cases, the consequence of this is a delay in passing any legislation or a renegotiation process, whereby the original policy is "watered down", often negating its original purpose. For example, President Obama has experienced numerous difficulties from the Republican party in his universal health care plan. In fact, he has backtracked on some aspects of the health care bill and recently had to battle for its legitimacy in the Supreme Court. Additionally, when attempting to pass any law in through the United States Senate, a tactic designed to prevent voting on a measure known as a filibuster can be used (though only in extreme cases).

The tasks which the Obama administration face are the rising levels of unemployment, the pressure of large public debt, outdated infrastructure, the failing strength of the dollar, the need for health care reform and the critique from the Republican party that they are breeding a welfare state. Training programs which were designed to bolster growth have proven to be largely unsuccessful, with particular attention given to a government subsidised green technology company called Solyndra, the recipient on a $535 million loan guarantee under the stimulus plan. Solyndra specialised in the production of solar panels, however similar investments by China into the same technology resulted in a large drop in the price of the panels, causing Solyndra to declare chapter 11 bankruptcy.[55] This naturally put pressure on the government and criticised them for "cherry picking" a company which then proved to be defunct. Republican chairman of the House Energy and Commerce Committee Cliff Stearns said openly that America just couldn't compete with China in green technology, and therefore

[55] Reuters - U.S solar firm Solyndra files for bankruptcy - Tom Hals - http://www.reuters.com/article/2011/09/06/us-solyndra-idUSTRE77U5K420110906

the government should no longer subidise the current programs.[56] Obama's health care reform was subsequently placed under intense scrutiny, as it was considered by Republicans as the next failure under the Obama administration.

In terms of Fiscal Policy, the Democrats want to reduce some areas of government spending and raise taxes, predominantly for the wealthiest in America. On the other hand, the Republican party wish to slash government spending considerably (through austerity measures) and either maintain taxes at their current rates or reduce them as well. To have some idea of the levels of government spending cuts that are being proposed, President Obama claimed to have cut spending by over $1 trillion in 2011 and to restore spending levels to those of the Eisenhower administration.[57] In addition, he has to reduce the deficit by $1.5 trillion, according to White House Chief of Staff Denis McDonough.[58] The aim of this is to never have a repeat of exceeding the debt ceiling limit and agreeing a new deal with the Republican Party. The table below demonstrates the difference between the receipts and outlays of the United States government. Although the individual deficits may not seem so damaging, the cumulation of these deficits of many years has built up a sizeable budget deficit.

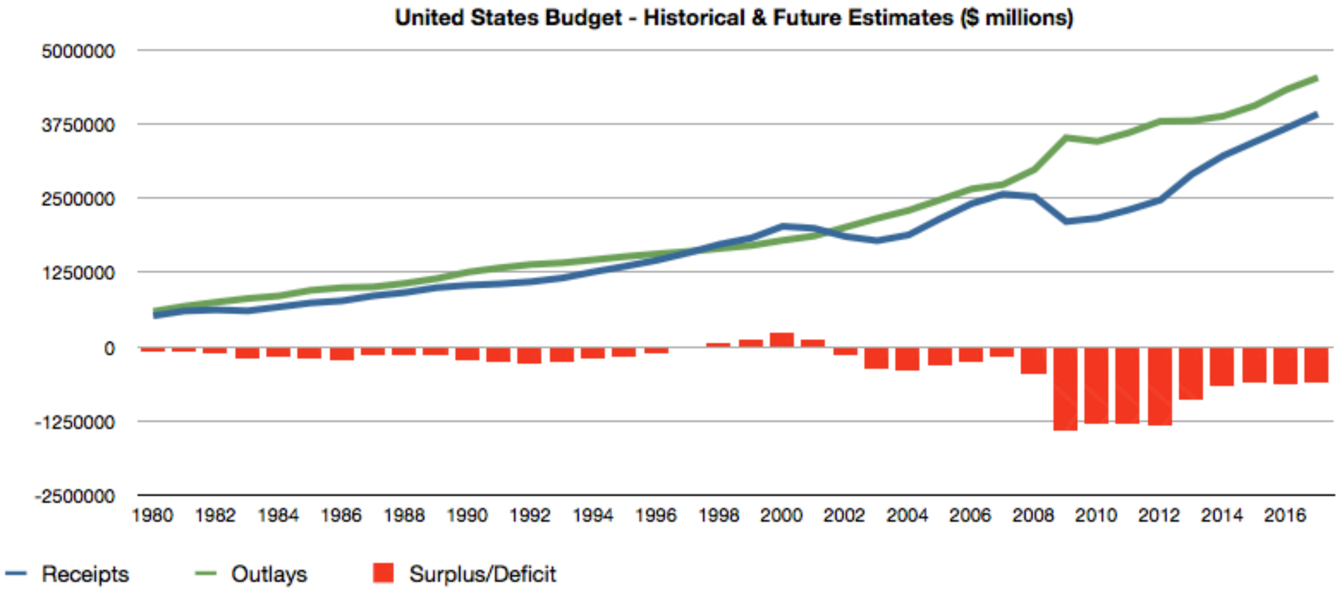

Table 18 Source: US Office of Management and Budget - Fiscal Year 2013 and Historical Tables

56 The Hill Website - Rep. Stearns: US 'can't compete with China' on green energy programs - Justin Sink 10/04/2011 - http://thehill.com/blogs/blog-briefing-room/news/185329-rep-stearns-us-cant-compete-with-china-on-green-energy-programs

57 CNS News - Obama: 'I Cut Spending by Over a Trillion Dollars in 2011 - http://cnsnews.com/news/article/obama-i-cut-spending-over-trillion-dollars-2011

58 Bloomberg Article - Obama Ready to Propose $1.5 Trillion Plan: McDonough - 18/02/2013 - http://www.bloomberg.com/news/2013-02-17/obama-ready-to-propose-1-5-trillion-plan-mcdonough.html

The main expenditures of the United States government, and the approximate percentage of the budget which they represent, are shown below. For purpose of clarity, the individual categories comprise of the following:

- **Education**: Training, Employment and Social Services
- **Physical Resources**: Energy, Natural Resources and Environment, Commerce and Housing Credit, Transportation, Community and Regional Development
- **Net Interest**: Sum of On and Off budget interest
- **Other**: International Affairs, General Science, Space and Technology, Agriculture, Administration of Justice, General Government, Allowances

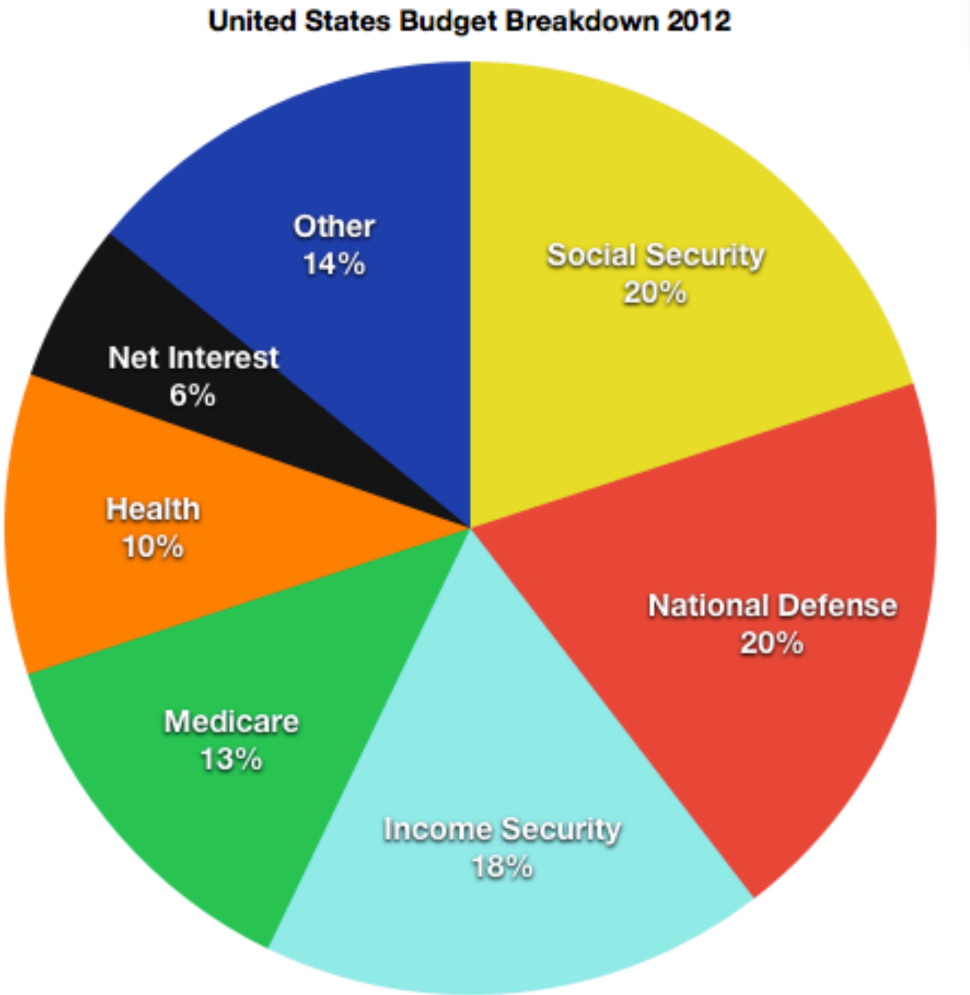

Table 19 Source: US Office of Management and Budget - Fiscal Year 2013 and Historical Tables

*In this diagram, the categories Education, Physical Resources, Veterans Benefits and 'Other' are displayed together under the title 'Other'

As can be seen in the pie chart above, Social Security, National Defence and Income Security payments are the largest outlays of the budget. We have already shown above that America's budget deficit cannot be perpetual - either taxes need rise or spending cut (or a mix of both). The notion of cutting national defence budgets seems to be out of reach for both political parties and far too much an emphasis is placed upon cuts to relative minutiae, such as education, physical resource and science budgets. The real heart of the problem however lies with social security and the exploding pension costs which America is facing. The Social Security Act, which was ratified in 1935, "enables the states to make more adequate provision for aged persons, blind persons, dependent and crippled children, maternal and child welfare, public health and the administration of their unemployment compensation laws".[59]

With regard to taxes in the United States, it is noticeable that the major cuts occurred during the George W. Bush era (2000 - 2008). The BBC produced a comprehensive table demonstrating this, which is shown in Attachment 2.[60] The Clinton administration left America behind in a healthy position and a budget surplus, with tax rates ranging from 15% (bottom rate) to 39.6% (top rate). Between 2000 -2008, George Bush reduced the tax rate across every boundary (10% for the bottom rate and 38.6% for the top rate), which has resulted in the build up of one of the largest budget deficits in American history. Despite the fact that Obama currently has tax rates which are lower than those of President Clinton's, he faces extreme opposition to any further increases, which hampers his ability to reduce the deficit. Naturally, tax increases have a deflationary impact on the economy, however they are necessary to restore the budgets equilibrium.

Currently, U.S fiscal policy remain at the forefront of all political decision making. If spending cuts are too deep the economy could fall back into a recession, however significant changes need to be made to keep America afloat. A delicate balance is paramount and the future remains uncertain. The outcome of the next fiscal cliff may very well decide America's progress.

2.6.5 Pension Funds

The Social Security Act did possess some flaws which are becoming more apparent today. Firstly, it did not anticipate a continually rising population, and with it the continually increasing burden on the state. In 1940 the American population was around 132 million, now

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[59] Social Security Act - United States Social Security Administration Website - http://www.ssa.gov/history/35act.html

[60] Attachment 2 - BBC Website - How the Bush Tax Cuts Were Brought in

this figure has surpassed 300 million.[61] It seems very obvious that an 80 year old social benefit law requires reform when the population increases by two and a half times, however the rigidity of congressmen and senators seems to have prevented this.

Not only has the population of America increased substantially, but people are also living longer, which means that in nominal terms there is an ever greater strain on the budget to support these people. Although the total population has risen, fertility rates have dropped, meaning that there are less new workers to support those that approach retirement. Pensions in America are obtained through levied tax income, meaning a larger pension requirement would correspond directly to an increase in taxes.

The particular analysis of pension funds is not just in relation to state pensions but also private pensions. These funds normally comprised of significant proportions of equity (approximately two - thirds), which of course were adversely affected in 2008. The Financial Times wrote an article in 2009 specifically relating to the effect of the financial crisis on pension funds, citing that it had "erased years of savers funds"[62] . The article continues by stating that $5,400 billion has been wiped off the value of pension funds worldwide since 2008, and that the year on year change of defined benefit in 2008 showed a decrease of 23.4%. Despite these losses, most company pension funds still comprise of high levels of equity, as companies are fearful of locking in losses by switching to higher levels of bonds and currencies. Furthermore, private pensions have been reported as being severely underfunded, even by as much as $4 trillion[63]. Oklahoma is highlighted as having the most underfunded pension scheme, with 63%, while Arkansas (61%), Indiana (57%) and Illinois (57%) are also largely underfunded.[64]

The real implication of an ageing population is only beginning to have an impact in America. At present rates, 4 workers are supporting one pensioner with their tax contributions; by 2050 this figure is likely to be halved.[65] Overall, the mix of underfunded pensions, an ageing population and the reduction in worker to pensioner ratio will likely require a restructuring of pension plans.

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[61] National Vital Statistics Report - Births: Final Data for 2010 http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_01.pdf

[62] Financial Times - The Pension Crisis - Norman Cohen, Matthew Vincent

[63] Kellogg Insight - Shortfall for State and Local Pension Systems Today: Over $4 Trillion

[64] Novy-Marx and Rauh "The Liabilities and Risks of State-Sponsored Pension Plans Journal of Economic Perspectives 2009

[65] The Economist: 70 or Bust! April 7th 2011 http://www.economist.com/node/18529505

The most obvious solution is to raise the legal retirement age, which reduces the time that pensioners require support and lengthens the time that workers can contribute in the form of taxes. However this does not mitigate the overriding fact that there are proportionately less young people entering the workforce, disregarding the doubt whether jobs for the new workforce will be available. Although the future employability of the workforce and the future nature of the economic climate cannot be accurately predicted without speculation, pension funds may pose a threat to how America allocates its fiscal policy and may be the cause of a future crisis. As a result, the reformation of pension plans must be a priority of the Obama administration, otherwise this unsustainable problem will be realised in the future.

2.6.6 Welfare and Health System

In continuation to the fiscal budget shortfalls that America is experiencing, the welfare and health systems also require a more thorough analysis. Forbes released an article describing the welfare costs in America, concluding that the total costs of the 185 total welfare programs in America in 2010 was $700 billion, a rise of 24.3% from 2008. (This figure did not include state spending, which accounts for an extra $200 billion.)[66] Most importantly, this figure is not expected to decline, in fact costs are continuously on the rise, with the costs in 2013 projected to be $1 trillion. Additionally, the new healthcare plan by President Obama is not taken into account with this projection.

When discussing healthcare, it is vital to distinguish between total heath care expenditures and health care spending by the federal government. Data and analysis by the government centre for medicare and medicaid services reported the following data in 2010:

Medicare spending grew 5.0% in 2010 to $524.6 billion, a deceleration from growth of 7.0% in 2009. Medicaid spending grew by 7.2% in 2010 to $401.4 billion, a deceleration from the 8.9% growth in 2009.[67]

The federal government financed 29% of total health care spending in 2010, a substantial increase from its share of 23% in 2007. Meanwhile, the shares of the total health care bill

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[66] Forbes - America's Expanding Welfare Empire - Peter Ferrara 24/04/2011 http://www.forbes.com/sites/peterferrara/2011/04/22/americas-ever-expanding-welfare-empire/

[67] National Health Expenditure Data - http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html?redirect=/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp

financed by state and local governments, private businesses and households declined during the same period.[68]

In addition, health care expenditures will inevitably rise due to the Patient Protection and Affordable Care Act (PPACA), otherwise known colloquially as Obamacare. This act will cover 30 million uninsured Americans,[69] however 19 million people are still without any form of health insurance.[70] Most government sources and websites are careful to put a positive spin on expenditures, in fact they are always referred to as "government spending on Medicare-Medicaid". When this topic is properly researched there is one underlying truth, namely the increase in government expenditure and accumulation of an increased budget deficit. Although health care is a noble idea and helps the lives of many people, the effect on the budget is yet another rising cost which needs to be paid for. Nevertheless, universal health care is also as a method for political gain. Indeed, Obama has won admiration among left wing voters for his stance on health care, which is seen by them as the right of every citizen.

We can see how much health care plays in todays world by simply looking at the top 20 pharmaceutical companies in the world. In total, 11 of these are United States companies, the majority of which post yearly revenues in the tens of billions of dollars and forecast growth.[71] It is safe to assume that spending on health care will increase for the foreseeable future.

The evidence seems to suggest that some of America's costs, whether referring to debt repayments, medicare, social security or the large proportions of the budget allocated towards military defence, are on the rise. As shown above, the budget deficit is an increasingly negative position, with future costs also likely to continue increasing. With this hindsight, it is a matter of "when", rather than "if" America requires a drastic change in its budget allocation and overall fiscal policy.

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[68] ibid 65

[69] Business Insider: One of the Biggest Misconceptions about Obamacare is that it will Cover Everyone 19/06.2012 - http://www.businessinsider.com/obamacare-wont-cover-everyone-2012-6

[70] The Foundry - CBO: Obamacare to Cover Millions Fewer Than Before Supreme Court Decision 24/07/2012 - http://blog.heritage.org/2012/07/24/cbo-obamacare-to-cover-millions-fewer-than-before-supreme-court-decision/

[71] Contract Pharma - The Top 20 Pharmaceutical Companies - Gil Y. Roth http://www.contractpharma.com/issues/2011-07/view_features/the-top-20-pharmaceutical-companies/

2.6.7 Unemployment Rate

Perhaps one of the most revealing indicators regarding the economic climate is the unemployment rate. In this subsection, it can be seen whether the 2008 quantitative easing indeed stimulated growth and employment. Theoretically, a large increase in the money supply should have a positive effect on aggregate demand, stimulating both inflation and growth. The subsequent expansion of firms and industries will then require additional workers to satisfy excess demand, thus the unemployment rate decreases. This is especially beneficial for the government, as income earners pay taxes and contribute to the federal budget, whereas unemployed citizens require welfare payments from the government. Indeed, the presidential election at the end of 2012 was focussed around getting more American workers back into full time employment, a claim both Mitt Romney and President Obama assert is essential to the rejuvenation of the economy. The historical and current unemployment figures for the United States (working ages) is displayed below.

Table 20 Source: US Department of Labour - Bureau of Labour Statistics

Firstly, it can be noticed that in the boom years running up to 2008, unemployment rates were dropping slowly, i.e. that unemployment decreases slightly during a boom. However, the crisis had a direct and severe repercussion on unemployment figures, which doubled from 5% - 10%. So why was the unemployment level in 2009 so much higher than that in 2008? This was due to the unwinding of credit markets and the need for companies to cut costs by laying off workers. Furthermore, with the high levels of uncertainty and lack of market confidence, many firms delayed hiring new workers and jobs became more sparse.

Between 2010 and 2012, unemployment levels have trailed off, suggesting that America might be slowly returning to its normal long term rate of unemployment of between five and six percent. The real connection is whether an expansive monetary policy (increased money supply and low interest rates) helps reduce both short and long term unemployment. At present, short term employment has been affected, though there is some doubt whether job creation will continue and if new emerging sectors are labour intensive enough to reduce unemployment further. Has the 2% reduction in unemployment really justified the enormous increase in the money supply? It seems that for all the efforts of quantitative easing, the results have been limited.

No reminder is needed to explain the amount of monetary expansion the Federal Exchange has attempted over the last two years: the money supply has increase by 25%[72] and interest rates cannot drop any lower. This time however, the large stimulus package has only reduced unemployment by 2%. Therefore, if a direct relationship does exist between expansive monetary policy and lower unemployment, the policy can only help employ those not in the long term unemployed category.

Additionally, there are a couple of aspects which need consideration. It could be the case that cyclical employment accounts for remaining 2% difference between the current unemployment rate (8%) and the long run unemployment figure (6%). Other forms of unemployment, such as frictional (people not wanting to move to the other side of the country and leave their families behind) or technological (the workforce doesn't have the skills available) account for the bulk of the long term unemployment rate. Long term unemployment (people who are unemployed for more than 1 year) is considered particularly difficult to reduce.

If these arguments are accurate, then the current reduction in unemployment seen today is potentially the best that can be achieved in this economic climate. Long term unemployment now needs to be tackled through retraining of workers into fields where there are shortages of labour. Naturally, these sectors often require high levels of specialisation and qualifications, most of which take may years to obtain. Therein lies the problem. How can we forecast the industries which will be labour intensive in the future? For now, it is the authors opinion that measures used to tackle unemployment are far too short term and that new jobs will require increasing levels of expertise in the future. In order to plan for these jobs, educational reform is needed to promote areas such as mathematics, science and engineering.

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72 Project Syndicate - Fed Policy and Inflation Risk - March 2012 - Martin Feldstein - http://www.nber.org/feldstein/projectsyndicatemarch2012.html

An alternative solution to the steady reduction in unemployment figures could be the effects of the "American Jobs Act" (September 11th 2011) and the "Jumpstart our Business Startups Act" (5th April 2012). Both acts are designed primarily to promote employment, the former of which by allocating government expenditure to the rejuvenation of railways, bridges and other areas of infrastructure within the United States.[73] Naturally, this first act immediately provides much needed demand and money to the construction industry, but naturally signifies a short term reprieve to workers and a greater burden on the government budget. The latter is designed to promote the recruitment of new personnel in current industries by offering tax breaks and less regulation, whilst simultaneously allowing credit to be more easily distributed to start up companies. Both plans facilitate the decrease in unemployment rates, however once again the fundamental issues underlying the stubborn unemployment figures are not addressed. The underlying factors regarding unemployment in America will be analysed in the theoretical section of this paper.

Finally, when examining the unemployment figures it must be recognised that real values (inflation adjusted) are always taken into consideration rather than nominal ones. If we take for example a working population of 100 million (for simplicity) and a 5% unemployment rate, then we have 5 million people who are entitled to claim welfare benefits. If this is compared with a working population of 500 million, the same unemployment rate corresponds to 25 million people requiring financial support. When calculating yearly governmental budget, it is essential to understand these nominal values as well as the real ones to estimate the government expenditure which is required by unemployed citizens. An interesting survey which could serve as an addendum to this paper is the tradeoff between the tax contributions that an employed worker would make and the benefits he would be entitled to if he were unemployed. This concept is discussed in the final stages of this paper.

2.6.8 Corporate Governance and Risk Management

The internal decision making of firms was one of the main driving factors behind the financial crisis of 2008, in particular due to the lack of due diligence and prevalent excessive risk taking. Additionally, there is a noticeable trend between the level of risk that a firm takes, the level of regulation in the market and the current economic climate. Prior to the most recent economic crisis, the level of risk taking was particularly high. Lack of regulation provided the catalyst for firms to increase their risk levels without examination and ultimately caused the financial crisis. Following the 2008 economic downturn, risk management departments were expected to act more prudently with their investments and wiser with their risk taking.

[73] One hundred twelfth Congress of the United States of America: At the Second Session - http://www.gpo.gov/fdsys/pkg/BILLS-112hr3606enr/pdf/BILLS-112hr3606enr.pdf

"We are committed to take action at the national and international level to raise standards, and to ensure that our national authorities implement global standards developed to date, consistently, in a way that ensures a level playing field, a race to the top and avoids fragmentation of markets, protectionism and regulatory arbitrage. In particular, we will implement fully the new bank capital and liquidity standards and address too-big-to-fail problems"[74]

Although this is perceived to have happened, the reality is that the crisis has had only a minimal effect - the "business as usual" mentality has prevailed.[75] The reasoning behind this is that the employees, CEO's and major decision makers in firms received sizeable bonuses while the sub prime credit market spiralled out of control but didn't receive any ramifications for their actions. In fact, the lack of reprisal only served to maintain the status quo. Had the banking leaders been held accountable for their actions and given either severe fines or jail sentences, banks would have shifted to a less risky and more ethical behaviour. The fact that not one banker ever went to jail for his/her contribution to the financial crisis in America proved that the certain individuals had personally benefitted without any responsibility for their actions. The one country which did hold its bankers (and its former Prime Minister) accountable for their actions was Iceland. The three largest banks were allowed to fail, depositors money was guaranteed by the state, and affordable loans were provided to individuals. The result of this has been remarkable; unemployment has dropped from 10% - 6% in 2 years and growth was forecasted to have grown by 2.8% in 2012, far exceeding its european counterparts.[76] It seems from this example that high levels of regulation do not hinder economic growth, but in fact contribute as a stabilising factor. Whether these measures could have been adopted in America is speculative but does question the apparent "black cheque" that Wall Street was handed.

In America, the firms which would have gone bankrupt were considered 'too big to fail' and received bailouts from the American government to prevent the collapse of the entire financial system. When the current markets are analysed, there is a remarkable similarity to the situation prior to the crisis. By contrast, following every major crisis prior to 2008, a wave a regulation was enacted to keep financial institutions under control. For example, after the

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[74] G20 Seoul Summit Declaration 2010 - http://www.g20.org/Documents2010/11/seoulsummit_declaration.pdf

[75] The Week - Wall Street's record bonuses (2010): How outrageous are they? http://theweek.com/article/index/208113/wall-streets-record-bonuses-how-outrageous-are-they

[76] New York Times - Iceland news - http://topics.nytimes.com/top/news/international/countriesandterritories/iceland/index.html

1929 Great Crash, the Securities and Exchange Commission (SEC) was set up to punish any illegal activity. The 2 laws which were passed were the 1933 securities act and the 1934 securities exchange act, both which were designed to prevent a recurrence of the events which caused the economic crash.

The Obama administration had enacted some reform to regulate markets, e.g. the Financial Regulatory Reform (2009), the Mortgage Reform and Anti-Predatory Lending Act (2009) and the Wall Street Reform and Consumer Protection Act (2009), however there is still the sentiment that Wall Street is running wild. Indeed, bank executive bonuses were at their highest levels in 2010 in a year which was supposed to be one of caution. This naturally caused outrage through the public.[77]

Notwithstanding public opinion, the current financial climate shows no such tightening of credit markets, instead the opposite is occurring. Banks are encouraged by governments to increase lending and offer credit, although some reports indicate that this is not occurring.[78] In fact, it is desperately needed in order to restart the economy. There does however seem to be a barrier which blocks liquidity from banks to individuals, and banks are investing instead in stock markets.[79]

Additionally, the institutions which possibly could have prevented the crisis, such as credit rating agencies, still maintain the guise that their rating are in fact only "suggestions" to the market. This should have been regulated from the start, as investors base their decisions on the accuracy of these agencies. The market still has little or no accountability and responsibility for decision making. Furthermore, the derivates market still remains unregulated today - no body exists which is responsible for the analysis of this market. The obvious result of this lack of regulation is that not only has no-one concerned themselves with the hassle of self regulation, no external body has the power to keep the banks in line in these markets. The corporate governance and risk management sectors therefore remain pretty much the same as they were prior to the economic crisis.

In his book titled "Uncontrolled Risk - The lessons of Lehman Brothers and how systemic risk can still bring down the world financial system", author Mark T. Williams describes in

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[77] Bloomberg Businessweek - Executive Compensation and Public Outrage - 01/03/2010 - http://www.businessweek.com/managing/content/feb2010/ca20100224_089346.htm

[78] BBC Website - Banks reduce Loans, in spite of Funding for Lending - 04/03/2012 - http://www.bbc.co.uk/news/business-21653603

[79] The Financial Express - Banks' profits from investment in stocks rise in 6 months - 18/02/2013 - http://www.thefinancialexpress-bd.com/index.php?ref=MjBfMDJfMThfMTNfMV8xXzE2MDU5Nw==

detail the poor standard of risk management in the banking sector. He cites a mixture of bad risk management within a firm and the lack of government intervention in the market as the spark which allowed the subprime mortgage bubble to form and the crisis of 2008 to begin. He calls for governments to take a greater roll in the markets and a tightening of regulation, in particular a restriction on leveraging.

'Risk is taken as an ad hoc, product by product basis......if asked what the firm-wide risk was, a product specific risk manager might have responded by saying "How the hell should I know?"'[80]

Later in his book, risk models that firms were applying were mentioned as severely inappropriate when mitigating seasonal risk. This shows a lack of attention of firms when considering the long term, which coincides with the notion that employees are only motivated to maximise short term profits.[81]

2.6.9 Raw Material Prices - Oil

As we saw in 1973, raw material prices can have a severe effect on the economies of importing countries and consider them necessities for the continuation of their way of life. It is important to notice that America remains to this day dependent on its raw material imports, especially oil, which are priced in American dollars. As no substitute has been implemented en masse, the price of oil has a direct effect on not just the United States balance of trade, but also on the individuals who consume this product. For this reason, America is actively looking for ways to decrease its dependency on foreign oil.[82]

The link between American foreign policy and its necessity for raw materials has often been documented, especially the interests of large oil companies. Chris Cook, a former oil regulator, has stated that the current price of oil is overvalued and the result of a public sector bubble, as opposed to the private one created prior to 2008. The spike in oil prices is attributed to risk averse speculation away from the dollar and into "paper oil", thus causing

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[80] Page 109 - Mark T. Williams - Uncontrolled Risk - The Lessons of Lehman Brothers and how Systemic Risk can still Bring Down the Financial System

[81] ibid 81.

[82] The White House Website - Our Dependence on Foreign OIl is Declining - http://www.whitehouse.gov/blog/2012/02/29/our-dependence-foreign-oil-declining

inflationary pressure to oil prices.[83] Here is where the market at work becomes really interesting. The increased demand towards oil and away from dollars increases the price causing a bubble. As support is withdrawn for the American currency, economic theory states that the value of the dollar should decrease (shown graphically by an inwards shift in the demand curve). Therefore, any respective rise in the price of oil (which is priced in dollars) must be adjusted to the inflation/deflation rate of the dollar.

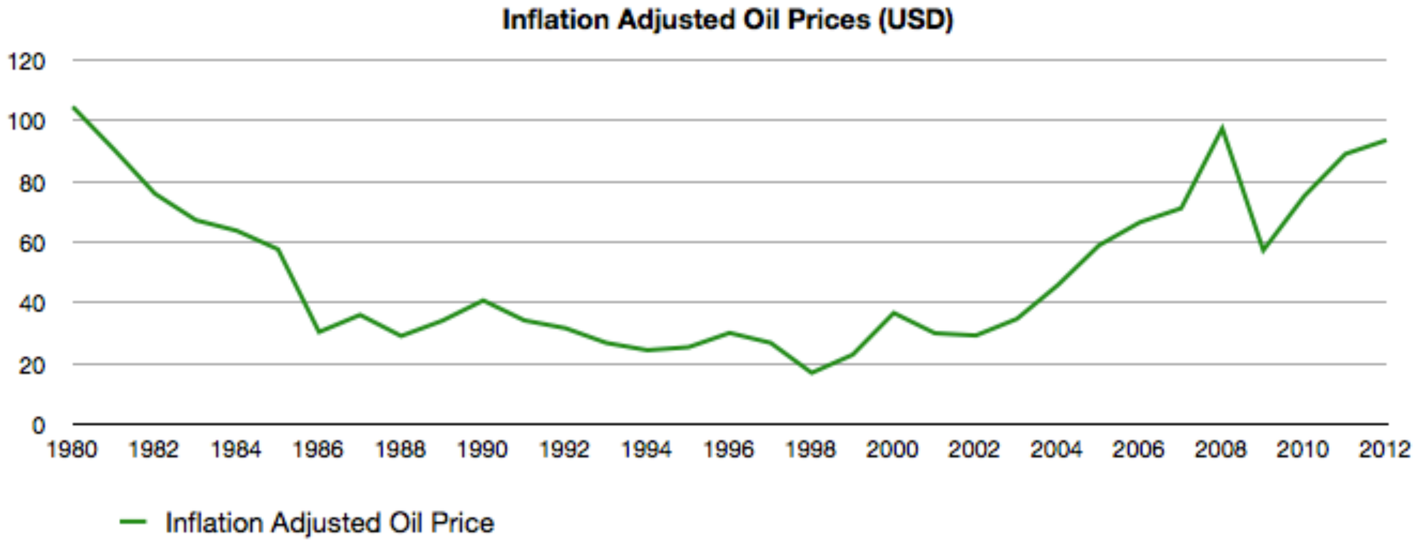

Table 21 Source: Inflation data website

Oil prices are based today on the North Sea Pricing Mechanism, an instrument which is considered to be extremely suspect of manipulation. Chris Cook describes the true supply of Saudi Arabian oil as "one of the greatest secrets on the planet", citing the lack of auditing of Saudi Arabian oil as a method of hiding deflationary oil expectations.[84]

Returning to the topic of financial crisis forecasting, it seems likely that a prolonged high price of oil is damaging to the debt levels of the United States and its future viability. Although some consider there to be a "vacuum under the oil market", it remains to be seen whether artificially high prices (if this notion is true) can be kept at inflated levels. Nevertheless, it is noticeable that there is a bubble in the oil market - if it deflates this is beneficial for the American government (although its impact on American oil companies or investors with strong interests in oil remains to be seen). The diagram below shows the inflation adjusted oil price in dollars between 1980 and 2012. One would expect today a

[83] Chris Cook: Spikes and Speculation in the Oil Market - Flash Crash Part Deux? - http://www.nakedcapitalism.com/2012/03/chris-cook-spikes-and-speculation-in-the-oil-market-—-flash-crash-part-deux.html

[84] Press Television - How Soaring Oil Prices are Weakening the US Economy - http://www.youtube.com/watch?v=6pSNxsgeL4E

repeat of the events of 1983: i.e. a reduction in the price of oil during the crisis as a result of the decreasing aggregate demand. Today's economy sees no such resemblance - the opposite is occurring.

2.6.10 Raw Material Prices - Gold

Perhaps the safest raw material considered by investors is gold. Gold prices have previously been pegged to the dollar (as in the case of the gold standard and the Bretton Woods agreement) and resemble a safer option to common stocks and bonds. During the recession periods in business cycles, gold price rises are attributed to the shift towards less risky investments. We have recently seen gold prices reach unprecedented levels which can be interpreted by the increased lack of investor willingness to accept market risks. Indeed, gold prices have risen by over 80% when compared to the 2008 levels. Reuters explains that this increased investment trend towards gold acts as an insurance measure for high net worth clients, as Gold is often deemed one of the safest investments in the market.[85] Indeed, UBS correspondingly recommended that "7% - 10% of assets should be invested in gold", showing the sentiment of risk aversion.[86]

The table below shows this price rise in greater detail, in particular the effects of the most recent financial crisis upon gold prices.

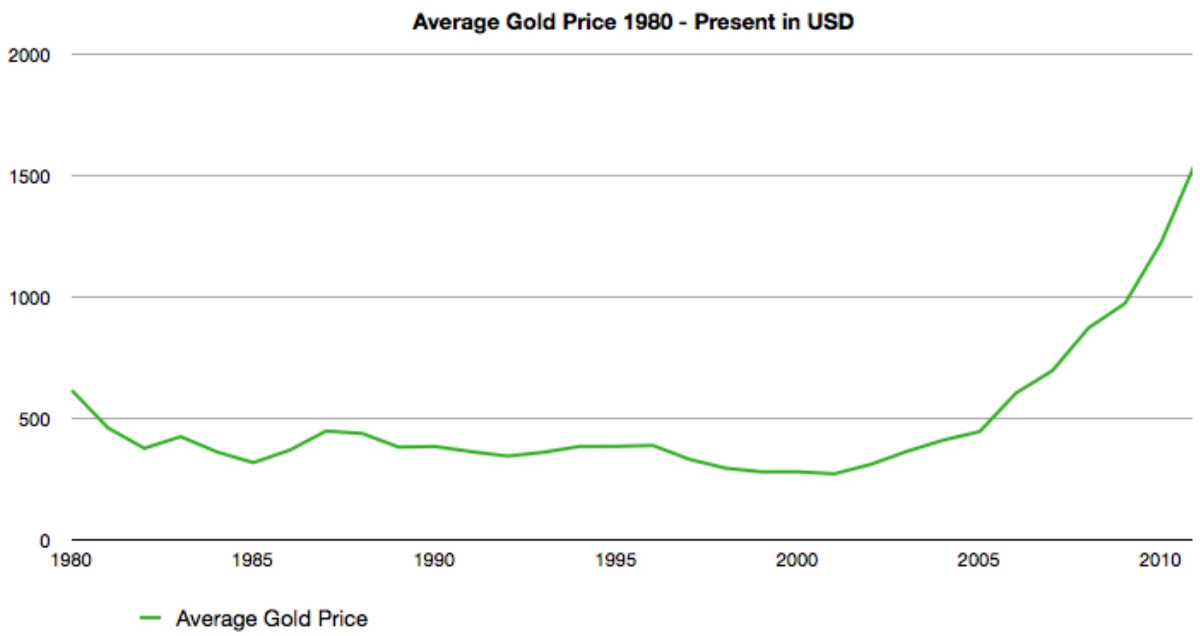

Table 22 Source: Only Gold Website

[85] Reuters - Super Rich Investors Buy Gold by the Ton - Laura MacInnis - October 2010 - http://www.reuters.com/article/2010/10/04/us-wealth-summit-gold-idUSTRE6932NR20101004

[86] ibid 86

Regardless of this finding, the link between investor confidence in the market and changes in gold prices can be ascertained by the simple tracking of money sequences. It is apparent that investment has increased in raw materials, in particular gold and oil, through the increase in raw material prices. As these resources are finite and useful, price rises are expected. The change in investment trends is therefore due to confidence in the market and the desire to maximise investment returns.

Similarly, a lack of confidence in the dollar has prompted investors to switch to oil and gold, which has caused a bubble in the raw materials markets. During times of economic downturn, investors generally seek less risky investments by holding more of their assets as government bonds, blue chip stocks and in some cases raw materials. The events of 2008 were extraordinary, in the sense that government bonds were no longer considered to be infallible - as a result alternatives have been sought in other markets. To present a balanced argument, one reporter for the Wall Street Journal offers a different analysis. Ben Levison writes that despite the high probability that investors will lose money over time, they still choose to invest in US treasuries[87]. The 10 year treasury yield now stand at 1.07%, a large drop from the 6.5% rates offered at the turn of the century. Nevertheless, treasuries still remain one of the safest havens for cash and remain preferable to the alternative of higher risk in other markets. Despite this, the fact that raw material prices are exceeding all historical values cannot be denied. A theory which accommodates both findings is that both treasury notes and raw materials are perceived as safe, whereby a mix of both would optimise a portfolio.

Robert Mundell has also weighed in on this topic in the Wall Street Journal, stating that the breakdown of the gold standard in the 1920's is where the problem started. The price of gold was fixed at $35/ounce in 1934, however the price had tripled (not including inflation) following the Korean war in the 1950's . There was no mechanism to keep the world price level in line with the price of gold.[88]

"The price of gold is an index of inflation expectations - the rising price of gold shows that people see huge amounts of debt being accumulated but expect more money to be pumped out."[89]

[87] As treasury yields fall, risks for investors rise - 21/03/2012 Ben Levisohn, Matt Philips

[88] Wall Street Journal - Currency Chaos: Where Do We Go From Here - http://online.wsj.com/article/SB10001424052748704361504575552481963474898.html

[89] ibid 89

Mundell proposes measures aimed at stabilising the euro-dollar exchange rate (which together represent 40% of the worlds currency) to improve the world economy.

"Inflation targeting by the Federal Reserve is a mistake...they don't think that the exchange rate is important."[90]

What we can conclude from this analysis is that raw material prices are reactionary. When considering the forecasting of financial crises, the damage has already occurred by the time raw material prices are impacted. Instead, the capital flows to and from raw material investments show the level of skepticism within the market. At present, we observe high prices in the gold and oil sectors, which suggests investor pessimism and the necessity for safe investments.

2.6.11 Stock Prices

The consequence of every single financial crisis has been the sudden drop in stock prices. The crisis in 2008 was no exception to this, however the subsequent intervention in the market is unique. Traditionally, it has taken many years to restore the economy to the levels prior to a crisis. When we analyse the stock prices between the end of 2008 until 2012, we see a resurgence in the market, primarily due to the quantitative easing measures implemented by the government. Government intervention in stock markets and banks post 2008 was justified through the desire not to repeat the events after the 1929 Great Crash. The lack of government support in 1929 created a much longer lasting and deeper recession, which today would have had too large an impact on America's standing as the worlds leading economy. The act of the government stepping in and securing the continuation of banks and depositors funds helped stabilise the market away from an economic depression.

One potential method of predicting future crises is to analyse the role of major investors in the market. This idea was glanced at in the 1929 and 2008 financial crisis summaries, however it is important to notice that many investors who took a short position in stock and bond markets made a lot of money during these crises.

What we now see in the market is a state whereby the government has intervened so heavily in the market that the traditional characteristics of a crisis are no longer shown. For example, stock prices have risen considerably since the increase in the money supply. Despite this, unemployment levels are still at crisis levels. Interest rates and bank policies have also

[90] ibid 89

contributed to the rise in stock prices, as common stock offers better returns than bank deposit or credit rates.

So are these common stock prices and returns stable? Most likely the stock markets are being used as a storage facility for banks with excessive levels of liquid capital, having received huge amounts of capital from the United States government. The danger of this is the formation of a stock market bubble during a period of low growth. If this bubble attenuates before the economy experiences growth and lower levels of employment, we will once again have extreme downward pressure on global markets. In fact, the Dow Jones has recently hit record highs, which should be positive news. However, the Huffington Post states the following:

"So what does it say about the Dow that it can hit this dizzying new height -- impressive by any measure in any era, post-crash or otherwise -- at a time when the overall global economic outlook is so dismal, and the domestic recovery is barely felt by the citizens who sacrificed their capital to save the world from calamity? It says that we should be gravely concerned. It says that we have a two-tiered economy, one where profits flow and another where risks lurk. It says that a lot of people are being left behind. And if October 2007 is any guide, it says that this display of prosperity may simply be an illusion."[91]

In order to look at this further, we need to expand the concept of the valuation of equity and debt. How is any asset valued today? Are the valuations correct? What gives an asset its value? The answer is incredibly simple but often overlooked - the value of an asset is defined by the expected amount of money that it can be sold for in the future. Assigning a future value to an asset is determined by anticipating a probable price; the probability decided upon in various ways, ranging from thorough analysis of demand and supply trends, the discounting measures of free cash flows, or a complete "shot in the dark". The future price is then discounted using a "discount rate" and a net present value (NPV) of the asset is ascertained.

The probability of future forecasting and the determination of the probability of outcomes is highly speculative, which unfortunately is often thought of as something highly risky and made by individuals without sufficient knowledge. Speculation is however completely normal; people are entitled to their perceptions of the future and back them financially, taking risks which are deemed acceptable. The problem arises when investors are encouraged to buy assets which benefit the bank, the trust fund or the company rather than the investor himself.

[91] Huffington Post - Dow Jones Hits 'Record High' Thanks To Strong Performances From Smoke, Mirrors Sector - 09/03/2013 - http://www.huffingtonpost.com/2013/03/09/dow-jones-record-high_n_2839862.html

Only through prudent examination of the valuation techniques can we decide whether to accept market valuations or not. An asset bubble such as in the years prior to 1929 is caused by the perpetual purchasing of assets by investors "speculatively", due to the "belief" they will be worth more at a later time period. Likewise, a financial crises commences when investors do not foresee price rises in the future (i.e. the belief that an asset is overpriced). Of course, this does not happen simultaneously; as the consensus converges that assets are overpriced, any bubble that is created attenuates. This is the so-called 'tipping point' of the boom and bust cycle - no stock can increasingly rise in value (without significant growth to rationalise this appreciation) before investors believe it has become overvalued.

Currently, we see that stock prices have returned to pre-crisis levels. This seems to suggest that the market sees some growth in the industry. This notion however is not supported by production levels, unemployment rates, or any currency appreciation. The fact remains that the government has artificially made money readily available and cheap; this is what has driven the rise in stock prices. The implication of this is that stock prices are only being supported by cheap money, with little rational to base these high prices. If the case arises where confidence is once again lost in the market, an even greater crisis will ensure, one which will threaten to create levels of hyperinflation in the United States dollar. The table below shows the effect of the two quantitative easing measures implemented by the government on stock prices. It is worth remembering that it has taken a 25% rise in the money supply to achieve these prices, which are now close to pre-2008 levels.

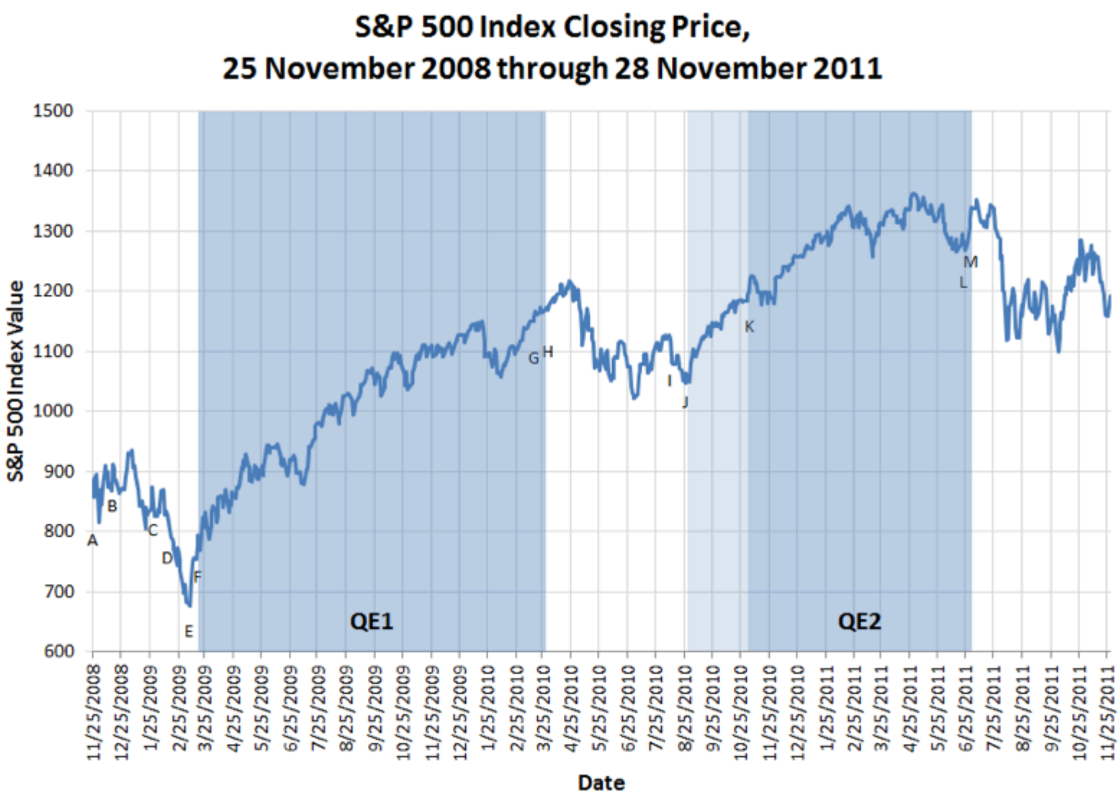

Table 23 Source: Political Calculations Website - The Effect of Quantitative Easing on Stock Prices

The Wall Street Journal describes the fact that although the stimulus plan has been somewhat successful in increasing jobs for American citizens, it creates an inevitable tax hike in the future.[92] Stimulus money was created to shore up stock markets by investing in common stocks and by taking the more toxic assets off companies balance sheets. In addition, the stimulus money was divided up into various projects to stimulate employment levels.[93] The fact remains however that the borrowing of individuals and businesses has not increased. The consequence of this is that as credit is not taken for reasons of growth in the market, government deficits will linger and tax revenues will not rise unless the income tax rate is raised.

It is particularly difficult to see in this market which industries will experience real growth. For the past century, new technologies have arisen and been the source of employment, increased output and better standards of living. At the turn of the last century this was shown with the development of electrical appliances, automobiles and the aviation industry. Most recently, growth has been provided through the emergence of the internet. Nowadays, we seem to be in a stagnating economy whereby there is no boom industry to reduce unemployment. In fact, there is increasing pressure on the existing workforce via the automation of the service industry.[94]

Jobs which are currently available are requiring increasing levels of expertise and training. The energy sector had been strongly touted as the 'next big thing', the industry which would experience high levels of growth and 'soak up' the unemployed workforce. Unfortunately, this has not yet occurred. The analysis of how money into this sector is distributed in todays markets, and the now inherent employment difficulties in the current economy, will be highlighted further in the theory section of this paper.

2.6.12 Regulation

As opposed to the continuous deregulation that has been accredited with causing previous financial crises, the few years post financial crises have shown a wave of market regulation aimed at preventing the same mistakes occurring again. This trend came to an end after the most recent crisis. Both the Obama administrations 'Jobs Act (2011)' and the 'Jumpstart our Business Startups Act (2012)' have deregulated the market with the aim of supporting new

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[92] Wall Street Journal - How the US Economy Went Wrong - Harvey Golub http://online.wsj.com/article/SB10001424052702304019404577418311631098508.html

[93] U.S Department of the Treasury - Financial Stability - http://www.treasury.gov/initiatives/financial-stability/pages/default.aspx

[94] The Wall Street Journal - Man vs Machine, a Jobless Recovery - 17/01/2012

businesses and increased employment. The government itself is in a difficult situation: on one hand it wishes to regulate the financial markets to prevent toxic assets reemerging in such quantities on corporations balance sheets. On the other hand. increased regulation can stifle the economy further and decrease employment levels further. At present, the government has decided on a path of increased deregulation. By contrast Ben Bernanke, chairman of the FED, endorsed the increased supervision of holding companies and oversight committees, even offering his support for a strong program of regulatory reform in the senate budget committee.[95]

Additionally, former bank regulator William Black testified in the house services financial committee that a subprime mortgage bubble was averted in the early 1990' by regulatory whistle blowing, something which was later subverted and caused the 2008 crash.

"We stopped a nonprime crisis before it became a crisis in 1991 through supervisory actions.....we did it by preemptive litigation."

"Financial institution leaders are not engage in risk when they engage in liars loans. Liars loans will cause a failure, they lose money. The only way to make money is to deceive others by selling bad paper and that will eventually lead to liability and failure as well."[96]

It is worth noting that the overall number of market players in financial sectors in America has periodically decreased following a crisis. Before the most recent crisis there were 5 major investment banks - Goldman Sachs, Morgan Stanley, Lehman Brothers, Merrill Lynch and Bear Stearns. Of these, Lehman Brothers declared bankruptcy, Merrill Lynch was sold to Bank of America and Bear Stearns was sold to JP Morgan Chase. Out of the 2 financial conglomerates, Citigroup and JP Morgan, Citigroup lost 88% of its value[97] and accepted T.A.R.P funds from the government to stay afloat. The securities insurance companies also took a significant hit, as explained earlier with AIG. The problem which arises is that when markets become oligarchies or even monopolies, a crash in the market focusses the risk on these few firms and places them in financial difficulties. Risk is obviously less diverse and firms absorb larger amounts of the losses.

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95 Federal Reserve - http://www.treasury.gov/initiatives/financial-stability/pages/default.aspx

96 William Black Testimony before the House Financial Services Committee Hearing - http://www.youtube.com/watch?v=co0cKvLlW1k

97 Citigroup CEO Walks Off With $260 Million After His Firm Loses 88 Percent Of Its Value - http://thinkprogress.org/economy/2012/10/16/1021701/pandit-260-million/?mobile=nc

This section is concluded with one specific realisation; namely that the crisis of 2008 was solved in a different way to all other past crises. As a result, several unpredicted characteristics are now present in the markets today, which are summarised in the table below. It is the authors belief that there is a large risk within the markets and that the prices of goods, services, raw materials, stocks and currencies are not at their true levels, having been manipulated by government intervention. Furthermore, such intervention has been proven as a short term fix only; In fact, current government policies have proven to be unsustainable in the long run. As these policies change once more to offset the problem of debt and intervention recedes, so too will the market attempt self correction once again. If and when the "safety net" which the government has provided through quantitative easing is removed, the risk of a catastrophic devaluation in the markets increases.

2.6.13 Interview with a fund of hedge fund specialist

Before this section is concluded, it is important to distinguish between what is written in the newspapers and the opinions of the experts working in the market. Sometimes it is noticeable that newspapers tend to over-exaggerate a problem, report a story from only one point of view, or completely miss something which should have received more coverage. To cover any possible omissions, the author held a private interview in 2010 with Chris Keen, former CEO of United Bank of Kuwait and partner of Culross Global Management, which won the 2011 award for the best performing diversified Fund of Hedge Fund over the past 10 years. Culross in particular focusses on a broad range of assets, often taking into account macro-economic situations when analysing the market and therefore offered some valuable insight into the markets forecast.

The interview began with a question regarding the indicators which could suggest that a country is in financial distress/decline. Of these, one of the main points highlighted is the debt to GDP ratio of the country, whereby a noticeably sharp increase indicates an economy in trouble. Debt unfortunately is not so straight forward to calculate; it is in fact entangled with so many cross country payments, which if neglected can distort the value. Naturally, the prices of the products also become very important when they are imported/exported in large quantities and impact the balance of payments deficit, hence the need for the analysis of the oil and gold prices. In fact, America imports around 337 million barrels of oil a month, a figure which would have a serious impact on the countries balance sheet.[98] This figure has however been decreasing year on year.

[98] www.pickensplan.com/oilimports

A supplementary aspect which is again difficult to quantify is the role of foreign countries, especially China, in the continuation of the American economy. This paper has already mentioned that the capital from foreign countries has significantly helped finance the debt that has perpetuated the American economy, whether it is in terms of war funding, balance of payments debt or public financing. Therefore, America has become dependent on the future policies that these countries undertake, particularly if they arrive at the conclusion that the American currency carries now a greater risk and their currency appetites change.

During this interview, Mr Keen did mention that due to refinancing and the help of the American government, the housing market was beginning to perform again. There has been a concerted effort on the governments behalf to stimulate these markets and prevent further foreclosures by helping home owners as much as possible, whether it is through refinancing or through easier accessibility to credit. What remains to be seen is if the creation of another housing bubble, this one artificially propped up by idiosyncratic forces (through credit), would result in the same occurrence of a market crash. We saw in 2008 that such a crash caused a downswing in prices of residential real estate to the sum of 30% - 40%; a repeat of which must be avoided.

A further interesting subject highlighted during this conversation was that Americas financial system is dictated by individual states and that the road to either ruin or recovery is highly correlated with these state municipal systems. The most obvious state which has received the most coverage in the press is California, which in 2009 was ranked number 8 in the list of worlds largest economies with a GDP of $1.89 trillion. This ranks the GDP of this state above Brazil and Spain and just behind Italy and the United Kingdom. However, in June 2012, Stockton in California filed for chapter 9 bankruptcy, the biggest municipality in history to go bankrupt (but not the first in California).[99] This shows that bad planning, dwindling revenues post 2008 and ballooning debt repayments, hidden by complicated accounting, can also cause an economic crisis. Not only are problems the result of speculation and macroeconomic policies, simple human mismanagement and poor investment project decisions can lead an area to ruin. The result of municipal bankruptcy signifies no resources available for pensions of retired public sector workers, no police budgets, no fire brigades, not to mention libraries, state funded schools and education programs and judiciary services. Nevertheless, this topic has been brushed upon in the context of spiralling pension costs which are shown to be severely underfunded. Alongside the obvious fact that we are living on average longer, it does

[99] City of Stockton Government Website - http://www.stocktongov.com/government/departments/manager/bankruptcy/default.html

seem somewhat ridiculous that policemen and firefighters from New York receive pensions of around $100,000 a year, which are also tax exempt.[100]

2.7 Summary of the Chapter

The analysis of previous crises has yielded many variables and a significant variety of potential problems that we currently face in the economy today. The following tables underneath list the characteristics of previous crisis to ascertain if a reoccurrence is likely. Additionally, a further table considering other independent variables is included.

[100] Source: The fiscal times - NY State Cops and Firefighters get $100K pensions - 25/06/2012 - http://www.thefiscaltimes.com/Articles/2012/06/25/NY-State-Cops-and-Firefighters-Get-100-K-Pensions.aspx#page1

The Causes of 1907 Crisis	Effects	Comparison with 2012 Economy	Prognosis
• Speculative Asset Pricing Bubble • Lack of Investor Insurance • Small Banks Crisis Vulnerability - Exposure to Failed Projects • Immature Market System • Withdrawal of Market Liquidity - Tight Money Market • High interest Rates • Trust Companies Undiversified Portfolios • Lenient Government Regulation	• Inflation in Asset Prices followed by a drop in almost 50% of Stock Prices • Bankruptcy of many Companies and Banks • No Security of Personal Savings - Causing a Bankers Run	• Speculative Asset Pricing Bubble Remains - However backed by Government TARP funds • High levels of Investor Insurance & Risk Mitigation • Few large Banks • Mature Market System - Risk highly diversified • Government provided liquidity in market • Rock bottom Interest Rates • Lenient Government Regulation designed to improve growth	• A repeat of the 1907 style crisis is unlikely • In fact, the majority of causes of the 1907 crisis are mitigated against today. • Government intervention is designed to prevent any sharp downturn in stock prices which would have occurred in 1907 • The only potential for a similar crisis is if government intervention was suddenly removed form the market.

Table 24 - Analysis of the 1907 Crisis

The Causes of 1929 Crisis	Effects	Comparison with 2012 Economy	Prognosis
• Speculative Asset Pricing Bubble • Leverage by Investment Trusts • Growth of Supply exceeding Demand • Lenient Government Regulation - Easy Credit Policy • The popularity of 'Binders' & 'Margin Accounts' - Low Risk - High Yield opportunities • Easing of American Monetary Policy - Reduction of rediscount rate • Dismissal of any negative market forecasts	• The Great Depression - Many decades required to return to pre-1929 stock price levels • Subsequent unwinding of leveraged accounts brought down healthy & unhealthy stock together • Downward pessimistic spiral • Continuation of the crisis due to lack of government response - mass unemployment followed • Recalling of loans, causing the crisis to spread to Europe	• Speculative Asset Pricing Bubble remains - However backed by Government TARP funds • De-leveraging of many financial institutions post 2008 crisis. • Mix of increased Government regulation (Basel I, II & III) and deregulation to support new companies • U.S. Government quantitative easing • Negative news reports prevalent	• A financial crisis of the magnitude of 1929 is not likely to occur due to Government Intervention • Monetary expansion policy has the potential of creating another asset price bubble • Government Intervention has prevented market self correction • Although credit is readily available, most companies are not taking on debt. This and the trend towards reducing debt make any stock market crash unlikely

Table 25 - Analysis of the 1929 Crisis

The Causes of 1973 Crisis	Effects	Comparison with 2012 Economy	Prognosis
• The formation of OPEC & creation of a cartel to control the oil price • The Arabic - Israeli dispute which caused an American oil embargo • The previously non inflation adjusted fixed oil prices left oil seriously underpriced - the correction caused a shock to the market • The increased demand for oil in America & its increased dependency • The lack of alternate oil suppliers that America could turn to following the formation of OPEC	• Cost increases for oil importing countries, predominantly America • Increase in the American balance of payments deficit • A direct impact on American citizens, including speed limits & rationing • Stockpiling of Oil in America following the crisis	• Oil Prices remain stubbornly high • Growing sentiment that this is caused by intervention from Arabic countries rather than market forces • Likely to be a drop in oil prices over the next few years • Developed countries attempting to wean themselves off their oil dependency by either reducing demand, finding alternatives, or by increasing the efficiency of the oil currency consumed	• Oil prices are at very high levels - if the high oil price was going to cause a crisis, it would have done so already. • As oil is currently considered overpriced, a decrease in price would be beneficial for the American economy • OIl companies however would experience reduced turnovers and have to cut costs, which may affect American employment figures. • Oil prices alone will not cause another crisis similar to 1973, but may affect employment in America

Table 26 - Analysis of the 1973 Crisis

The Causes of Dot-Com Crisis	Effects	Comparison with 2012 Economy	Prognosis
• Inception of a new technology & upward speculation, causing a bubble • Lack of regulation in stock markets • High level of risks taken by dot-com companies without stable revenue streams • Investor greed without proper risk assessment • Rise of interest rates, adding deflationary pressure to the bubble • Badly structured executive compensation	• NASDAQ exchange lost 25% of its value in a week • Many dot-com companies either going bankrupt or forced to lay off many employees • Only 2 companies (Ebay & Amazon) achieved marked success as dot-com firms • The worst effect of this crisis was the emergence of cheap credit, sub prime mortgages & ultimately the 2008 crisis	• Dot-com companies are considered relatively risky investments & thus priced more suitably • Market for dot-com companies has had time to mature - revenue streams have now developed • Rock bottom interest rates • Clampdown on executive compensation - but still some doubt remains regarding the extent of this	• If a new market arises in the same way as internet, it seems possible that a crisis could occur again. • However, similar to the 2000 crisis, it will likely to be confined to this market without contagion • No mechanism currently which can accurately predict the future success of new markets • De-regulation for start up firms may exacerbate a speculation bubble if a new market is found

Table 27 - Analysis of the Dot-Com Crisis

The Causes of the 2008 Crisis	Effects	Comparison with 2012 Economy	Prognosis
• Asset pricing bubble which incorporated insurance, real estate & banking sectors (caused at first by low interest rates in 2000) - Subprime market • Failure in corporate governance & risk management • Poor forecasting measures & no immediate response of the government • Moral implications regarding the actions of bankers • Poor regulatory & lending standards in the derivates markets • Lack of responsibility taken by credit rating agencies + market deregulation • Over-leveraging of banks	• Committee set up by the government to investigate the causes of the crisis • The failure of Lehman Brothers, followed by the acquisition of many insolvent financial institutions • Stock market crash caused $11 trillion in household wealth to disappear • Spike in United States unemployment figures • Bailout of majority of the baking sector in the form of TARP funds • Private debt of companies at the taxpayers expense • Interest rates dropped to 0 & remained there	• Asset prices have returned to pre 2008 levels - the government has in essence 'filled the gap' caused by the financial sector • Tighter levels of risk management, although the government is keen to have high levels of liquidity in the market • U.S. Government taking an active roll in the market • No major change to banking practices - recent allegations include fixing LIBOR rates & aiding money laundering for terrorists • No change to the credit rating agencies doctrine, although several high profile downgrades have occurred	• No lessons learned from the 1929 crisis, nor has the level of government intervention at the beginning of the crisis. Inevitably a similar type of crisis has happened & will happen in the future • Not enough factors have changed. Government has flooded the market with cheap money - if this is reduced, the crisis will happen all over again • The serious problem is the potential inflation caused by quantitative easing. • High unemployment could create a further crisis due to lower aggregate demand & lower taxes created. Deflationary pressure on markets

$11 trillion figure from the U.S financial crisis inquiry report

Table 28 - Analysis of the 2008 Crisis

Independent Variable	Present in Past Crisis	Comparison with 2012 Economy	Could it Explain a Future Crisis
• Interest Rate Changes	• Nearly all previous financial crises have cited the interest rate being too low or too high as a cause of the the crisis. The rates prior to 2008 were far too slow • Low interest rates cause bubbles, high interest rates deflate them & create stock market crashes	• Interest Rates at 0%, no room for further decreases. • Inflationary pressure on stock prices (which have now recovered). • Consumption encouraged in markets	• Prolonged rock bottom interest rates may create a bubble • Future increases in interest rates may cause the next recession if done too quickly • The FED must be extremely careful when interest rates do start to rise again
• Money Supply	• One of the main reasons for the 1929 crash was monetary contraction - causing liquidity shortfalls. In 2008 credit was also handed out too cheaply; banks increased the money supply too much • Alternatively, large increases in the money supply can cause inflationary problems without creation of growth	• Largest single increase in the money supply, yet no noticeable inflation • FED has hinted at a future contraction of the money supply, which at present acts as a safety net in stock markets • A contraction of the money supply will most likely cause a crisis unless done incrementally	• Yes - If too much money is pumped in, inflationary pressure will cause a decay in stock prices & erode purchasing power • If a large contraction occurs, unemployment will rise & the demand base for stock & shares will disappear, also causing a crisis • Liquidity at present is very high due to quantitative easing - however the government & FED could cause a crisis if they increase or decrease the money supply
• United States Public Debt Level	• Public Debt Levels have not caused financial crises in the past • Debt levels have never spiked by the same extent as post 2008 • The aftermath of the 2008 crisis meant that the government had to get involved in the private sector by bailing out financial institutions	• Public debt has continued to increase - now debt levels are at $16trillion, or 103% of GDP. • Debt has become the forefront of political policies & debates. The debt ceiling has had to be raised 3 times during the Obama administration • The economy is still processing the massive debt burden increase since 2008 • Public debt continues to increase still - significant fiscal policy changes are needed	• Debt levels have a serious possibility of causing a future crisis • If America starts to have difficulty securing capital from investors when debt is sold, interest rates will have to rise. This will almost certainly signify the beginning of a crisis • The management of U.S fiscal policy must change as it is unsustainable • Interest repayments on debt could potentially render the U.S government bankrupt
• Fiscal policy	• Similar to public debt levels, fiscal policy has not caused a previous crisis • Recent budget figures suggest however that the government needs to adopt a contractive fiscal policy	• Either Government spending needs to be reduced or taxes need to rise - dependent on the 2012 elections • Misallocation of public resources - national spending too high, pensions underfunded • Increasing costs of medicare/ medicaid	• If a new crisis arises, it will likely stem from the pensions market. • Government policy all points to inflation of the U.S. currency, which could reduce pension costs • Medicare/Medicaid costs also need to be brought under control - Obamacare will increase government costs

Independent Variable	Present in Past Crisis	Comparison with 2012 Economy	Could it Explain a Future Crisis
• Raw Material Prices	• Oil prices almost single handedly caused the 1973 crisis • Raw materials have a significant impact on importing & developed countries balance of payments • Gold prices often an indicator of the health of the economy rather than causing a crisis	• Raw material prices are at historical highs. • Both gold & oil prices continue to increase in value • There is reason to suggest that these prices are overinflated by groups of investors or cartels (in the case of oil)	• If high raw material prices can cause a crisis in America, they would have done so already. • However, they do explain the investment trends in terms of a move towards safer investments • This signifies a lack of confidence in the market - therefore raw material prices could be used to predict a crisis
• Level of Regulation within the market	• 1907 - Lack of banking insurance & regulation cited as a major cause of the crisis • 1929 - no regulation of the risks taken by trust funds & bankers. • In 1973 the formation of OPEC is not regulated, instead it is a quasi - legal cartel with monopolistic powers • Dot-com crash - caused by excessive risk taking. investors unaware of asset toxicity. • 2008 - Major lack of regulation	• Levels of regulation remain low. • Regulation in terms of start up companies at extremely low levels - minimal accounting records required in first few years • Credit rating agencies only 'recommend' their ratings • FED has never been audited • Still no regulation in the derivatives market • Banks risk taking measures still too high	• This is by far the most worrying variable - the lack of regulation makes the markets rife for abuse • Regulation low in order to promote growth - higher levels may stifle the economy • No body accepts personal responsibility for the rating of companies or the risks taken in derivatives markets • High correlation between low levels of regulation & the onset of a crisis - following this trend, a crisis in the next coupe of years is likely

Table 29 Independent Variable Analysis

Following this in depth analysis of previous crises, several factors can be isolated and considered to be highly correlative with events prior to a financial crisis. These are listed below alongside an explanation why these specific variables are chosen.

i) **Interest Rates** - Interest rates which are too low can create bubbles which will eventually attenuate, causing a crisis. Interest rate which are too high will reduce aggregate demand and deflate these bubbles. Therefore the higher an interest rate is, the more likely a crisis will occur in the short term future. The precise interest rate level which will cause such a crisis cannot be predicted, however an estimate can be taken. From the trend observed in table 9, and with the assumption that this trend is likely to continue, even the increase of interest rates to 4-5% could create a future bubble and crisis. The trend we therefore see is one of increasing market sensitivity to interest rates, in the sense that lower peaks are required to form bubbles, typically observed by high stock prices. Furthermore, when interest rates are high, this is accompanied by a general slowing down of economic growth.

When this occurs, capital flows move out of stocks and into less risky deposits which now offer safer yet higher returns. Higher interest rates could therefore act s a signal that aggregate demand is likely to fall and the probability of a crisis will rise.

ii) **Money Supply** - This is an incredibly interesting variable and one which shows how differently the market reacts when there is strong government intervention. We currently have an economy in America with an enormous increase in the money supply, with little or no effect on the inflation rate. Furthermore, there is very little growth to speak of. The only definitive effect of the quantitative easing is the return of stock prices to pre crises levels. This will be discussed further in the theory sector when the destination of the TARP funds and quantitative easing capital is discussed. What remains is the question whether changes in the money supply can cause a crisis. We have observed that an increase only creates a bubble in asset prices, which will eventually collapse. Similarly, a decrease in the money supply (which the FED has forecasted in the near future) will certainly erase the safety net in the stock markets that the government has created and also cause a crisis. Therefore, either the money supply continues to rise and artificially inflates the bubble further, worsening any future crisis, or the money supply contracts and a crisis occurs sooner rather than later. Both scenarios paint a rather dim view of the future, and it seems that the government has placed itself in a bind. The only way a crisis will not occur is if the market deems prices to be correct (through growth) coupled with the sequential removal of government intervention in stock markets. At present there is far too much cheap money floating around markets and which distorts the value of stocks. The market needs a mechanism to correctly price assets without the withdrawal of government support causing a painful recession. The lower the level of the money supply, the tighter the liquidity markets become and the more likely a crisis will occur.

iii) **Regulation** - The most obvious trend throughout this analysis is the link between the level of regulation and the startling level of risks taken in the market which led to financial crises emerging. In every single case analysed in this paper, a lack of regulation is cited as a reason for the occurrence of the crisis which could have easily been averted. For example, if credit rating agencies had been highly regulated such that miscalculated ratings were punishable, a large percentage of stock and bonds would have lost their AAA ratings. As a result, pension funds and other low risk investment companies would have avoided these toxic stocks, mitigating the spread of the subprime mortgage industry to other sectors. The adoption of some prudent measure of regulation could have therefore prevented the scale of the crisis, proving that this crisis was man made. Furthermore, it also demonstrates the inherent greed in the industry which simply needs to be checked on a continuous basis. Once regulation and the power of oversight institutions is circumvented in the name of growth and short term profit, a crisis is as good as written in stone.

In the aftermath of previous crises, regulation became a lot stronger in the industry. However, the laws following the 2008 financial crisis are considered to be very weak and have allowed the continuation of the status quo. In the case of start up companies, there have even been increased levels of deregulation, which seems absurd considering its role in the crisis.

High levels of regulation have been argued to hamper growth and restrict market lending. This is most obvious through the implementation of Basel I, II, and III. Nevertheless, high levels of regulation have not themselves caused crises. It could be rationalised that high levels of regulation are necessary to avoid high levels of risky lending which also could cause financial crises. Correspondingly, low levels of regulations have paved the way for the formation of bubbles which then collapse and create economic downturns. At present, the lack of regulation in the derivatives market and the formation of the stock market bubble can increase the probability of a future stock market crisis.

iv) **Pension Funds** - Rather than an independent variable, this sector has been identified by many financial experts and newspapers as an area which is highly vulnerable to the next financial crisis. Pension funds are well documented as underfunded and in need of liquid capital. There are two major ways in which this crisis can be averted. Firstly, the government could once again intervene and bailout this industry. The problem with this is that pensions are a continuous outlay and represent a long term financial commitment of the government. Alternatively, the government could inflate the currency, thereby watering down the real value of pensions and making them more affordable. At present, the second option is more likely. The greater the underfunding of pension funds, both public and private, the greater the probability of a crisis to originate. Above all, the problem of pension funds will only continue to worsen without serious reform and methods to recapitalize the shortfalls.

These four variables have been highlighted and together can explain when a bubble is likely to occur, when it will start to deflate and the likelihood of the financial crisis. Mathematically, a simple equation has be formulated below to explain this further. Additionally, although currently the pension funds are underfunded, similar underfunding could also occur in other sectors, therefore the fourth variable has been somewhat altered.

We start by splitting up the likelihood of a crisis into “crises caused by market forces” (through the boom/bust cycles) and by “influences caused by market intervention”.

Market forces would represent an arbitrary value, similar to a ‘sin (x)’ graph. Non market forces are comprised of the 4 major factors listed above (Interest Rates, Money Supply, Regulation and Underfunded Sectors), which serve to distort the graph.

It would be impossible to start from the beginning and attempt to ascertain how our business cycle would look without the independent variables. What we do know is the current economic situation and can analyse the effects of changes in one or more of the variables. For example, how would the economy look now if interest rates were 2% higher? In order to understand the difficulty of this model, the list below describes its properties.

This specific models characteristics are shown below:

• **Multivariate** - The 4 chosen independent variables contain subsets of many other variables. This will be demonstrated below.

• **Non linear** - There is no combination of values the independent variables which will undoubtably cause a crisis. It is important to deal in probabilities though. For example, if we have extremely low levels of regulation, speculative bubbles form which can cause crises, so naturally the probability of a crisis is higher when regulation is low and these bubbles are in full maturity.

• **Time Series Forecasting** - This is very important, as we use extrapolation of past events to gain a deeper insight into how the economy works today. We can also simulate the possible effects of the change of one of the variables, provided the correlation with the other independent variables is accurately predicted.

• **Heteroskedasticity** - The standard deviation of the error terms are not constant. There are many socio-political and environmental shocks that could affect the business cycle. Most are unpredictable and occur randomly.

• **Multi-collinear** - This is the biggest problem of the model and in fact the problem of most economic forecasting models. The independent variables themselves are correlated, i.e. the position of interest rates could affect whether there is underfunding in a particular industry. Furthermore, the variables in the subsets are directly affected by changes in more than one independent variable. To simplify, foreign exchange rate changes can result from alterations to interest rates, the money supply or regulations. As a result, the accuracy of a regression analysis to pinpoint the individual effect of one variable will yield skewed and unreliable results. Likewise, using dummy variables would also be inefficient, as the variables in the subsets also have some form of multicollinearity.

• **Autocorrelation** - A further setback to the application of the model is the potential autocorrelation of the model. For example, if the interest rates rise, does this mean that interest rates are more likely to rise in the future? Not necessarily. However, in the current economic climate, interest rates are at rock bottom, they cannot go any lower without reaching negative figures. Consequently, we have the visceral hint of autocorrelation within the market. Similarly, the affect of speculation on stock markets is also visceral. If people believe a stock will rise in value, they invest. Due to the upward pressure of demand, the stock does indeed rise, increasing the confidence in the stock once more. This spiral only peters out when the stock price reaches a level which is high enough to cause skepticism. From this example we can therefore also infer that the model has some level of auto-correlation, which must first be analysed.

Despite the difficulties of the implementation of the model, we can check how the 4 independent variables have historically changed the business cycle and what affects they still hold today.

<u>Key</u>

Likelihood of an immanent Crisis = C

α = Market Crisis Levels -Boom/Bust Cycle (Independent Variable)

δ = Change in the particular variable (Delta)

X_1 = Interest Rate Levels

X_2 = Money Supply Increase/Decrease

X_3 = Level of Regulation Market

X_4 = Underfunding in a Major Industry

$$P(C) = \alpha + \frac{\delta X_1}{\delta\alpha} + \frac{\delta X_2}{\delta\alpha} + \frac{\delta X_3}{\delta\alpha} + \frac{\delta X_4}{\delta\alpha} + \varepsilon$$

A graphical representation of this formula is demonstrated underneath (same as table 1). Our alpha value in this formula is represented by the green curve and depicts a normal boom and bust cycle with no government intervention. It serves as the dependent variable, whereby variables X_1 - X_4 are the independent variables which influence the business cycle. The alpha value therefore signifies how a business cycle looks without any government intervention. This is today impossible to quantify, since government intervention in the market has been prevalent for many decades. The combination of the alpha value with the independent variables then represents the red line depicted in the table below. Despite the attempt of the government to smooth the business cycle, the most recent crisis would suggest that these measures have failed.

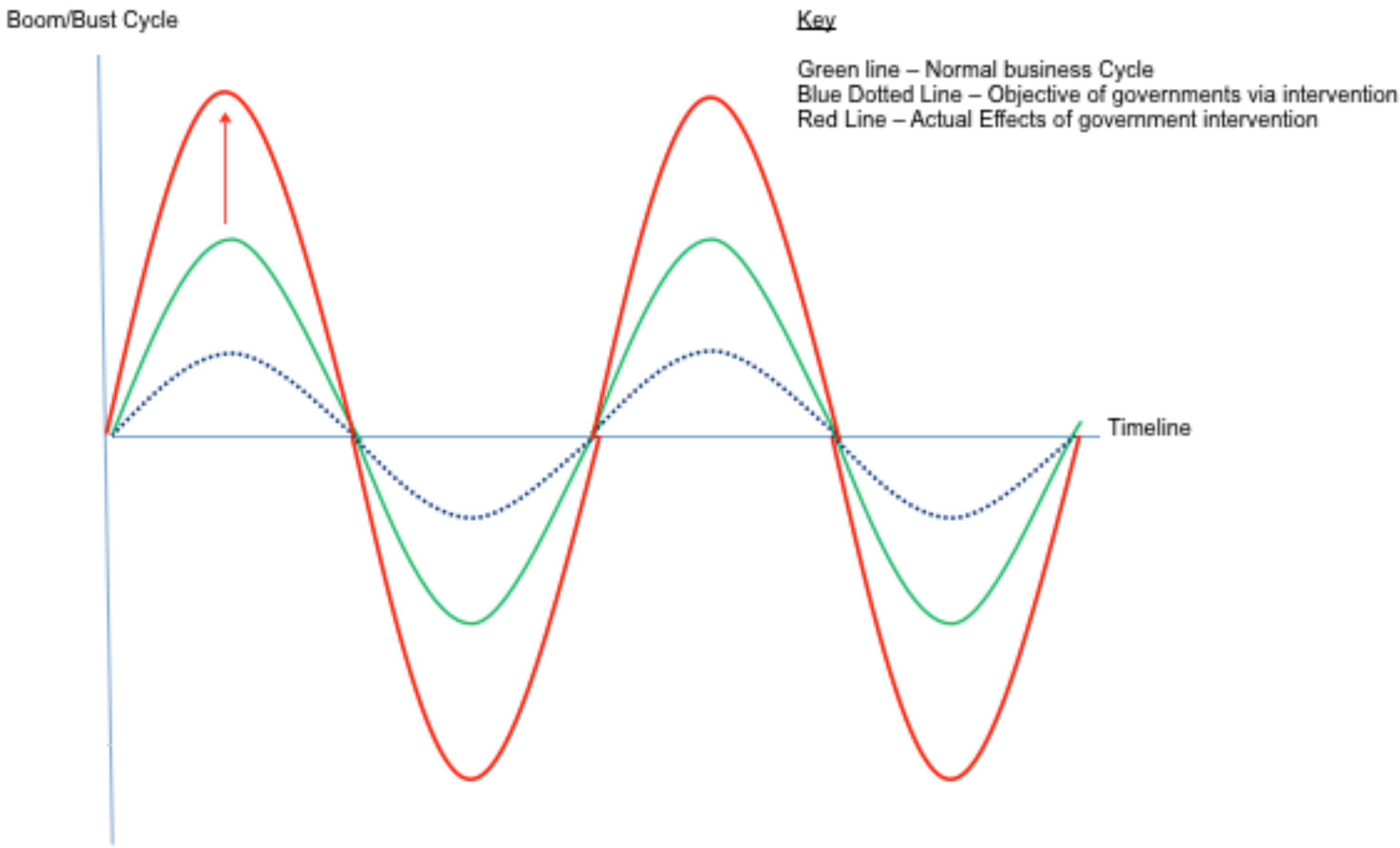
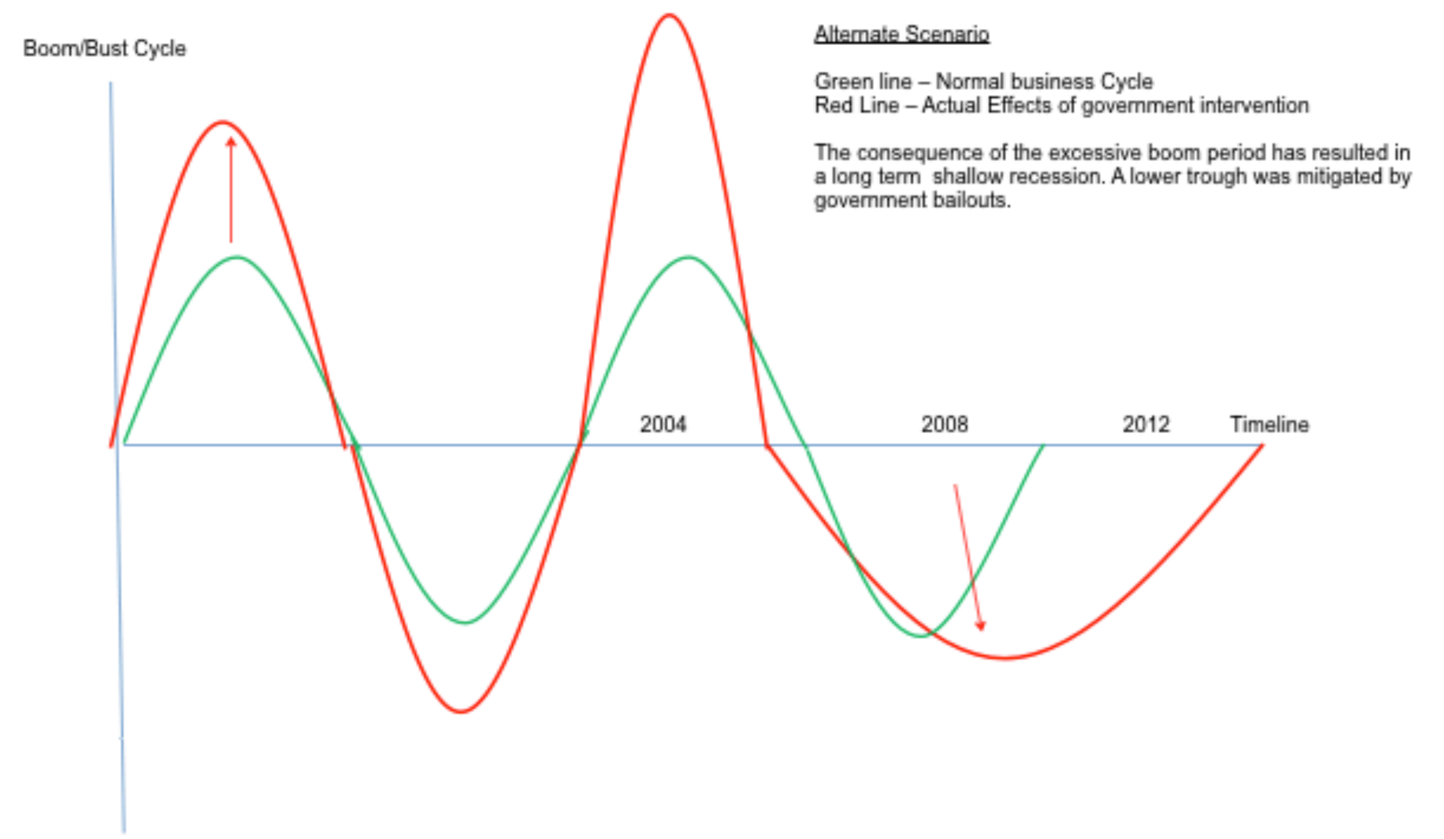


Table 30 Government Intervention in Business Cycles



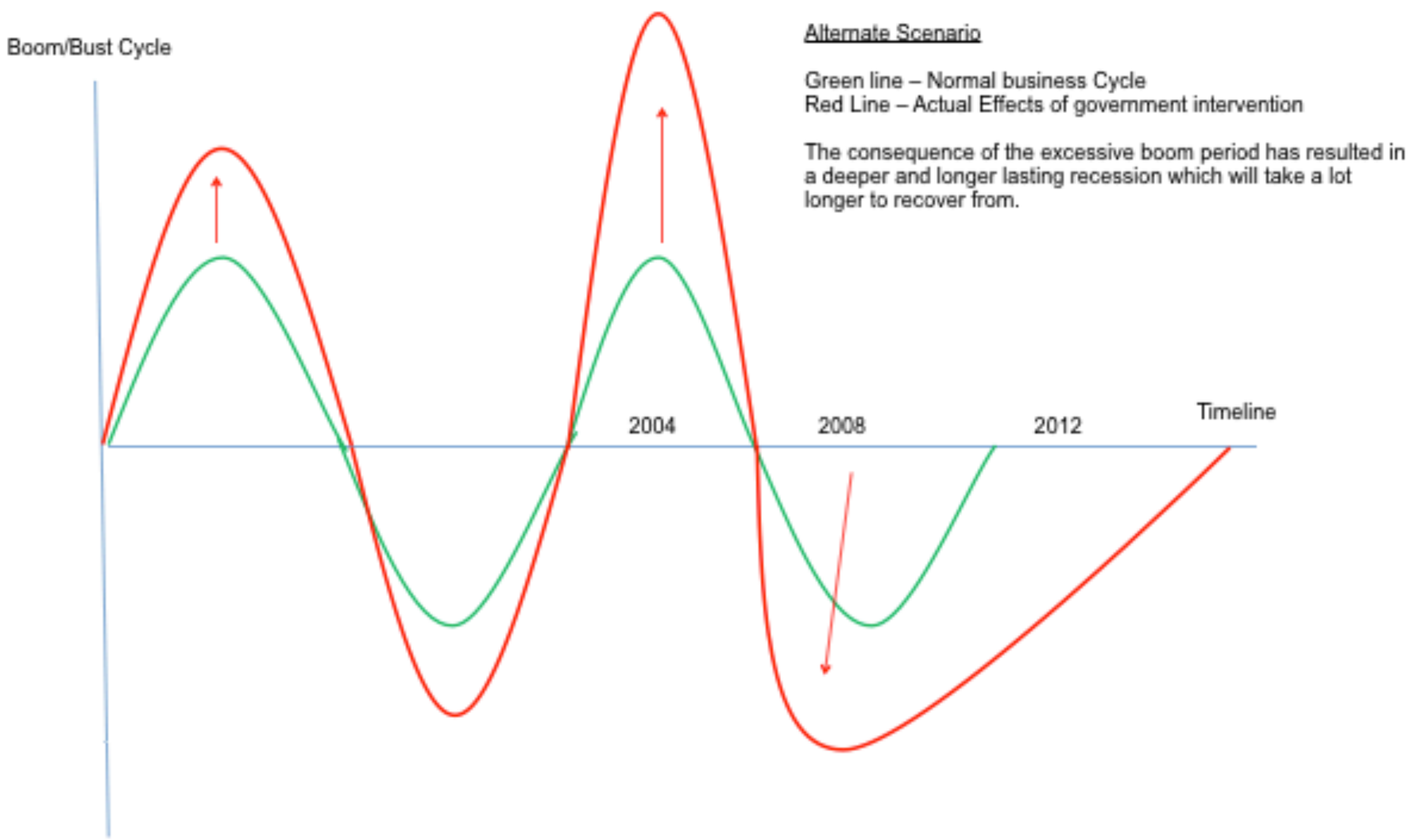


Table 31 Government Intervention in Business Cycles - Alternate Scenarios

The determination of the peaks and troughs of this line was clarified by Keynes and titled the "marginal efficiency of capital" [101] - When savings and investment levels equal one another, we have reached either a minimum or a maximum point. This can also be easily explained by speculation. When investors feel goods are relatively overpriced, they save their money in less risky projects. If the net number of market players believes this is the case, the economy moves away from its peak and towards a bust situation. The blue dotted line and red lines are the potential effects of government intervention on the market, which are shown mathematically by variables X_1, X_2, X_3, X_4 and the error term e.

So why is this equation written as the change (delta) in each of the variables in relation to the change in alpha? The answer for this is simple: the effect of a change in any of these variables depends where in the business cycle we currently are. For example, a reduction in the interest rate during a boom periods would not likely cause the same increase in consumption in comparison to during a recession.

The two alternate scenarios displayed alongside the original demonstrate the possible effects of government intervention on the business cycle. In all honesty we do not know how deep the stock market crash in 2008 would have been without government intervention, however the government felt that the bailouts were necessary to avoid a much greater recession (as shown in the third diagram). Scenarios 2 and 3 provide the alternatives to whether we experienced the trough of the most recent recession immediately or if it was delayed.

Nevertheless, the sluggish growth that has ensued in the post 2008 years is noticeable. It remains to be seen how long the low levels of growth will prevail. Of course, there is also the scenario of a 'double dip', recession which the bailouts were only able to delay. Likewise, it is also important to explain that boom and bust cycles do not occur like 'clockwork'; they are beginning to occur more frequently than before. Furthermore, government policies can skew the business cycle by prolonging the peaks and troughs of the business cycle. The alternate business cycle diagrams explain two scenarios which explain the current recession and how they come about.

With regard to the timeline, it is noticeable that in the last 12 years the stock market has crashed and rebounded completely on 2 occasions. The first crash of the 21st century occurred in 2000 from the stock market bubble. Stock prices were at record highs and slowly unwounded over the following 3-4 years. 3-4 years later, stock prices were once again at all time highs before the subprime mortgage market collapsed. This time, the effect on the

[101] Keynes Theory Explained on Economic Thought Website - www.economicthought.net/blog/?p=2092

market was a lot more sudden and stock prices fell at a much faster rate. Nevertheless, stock prices have once again rebounded and reached all time peaks, 3-4 years later. The trend that can be noticed is that it takes roughly 4 years for stock market prices to exceed previous peaks. What is particularly worrying is that stock prices are normally tied to the performance of the economy. On this occasion however, they seem to be acting independently of slow economic growth. The economy simply has not recovered enough to endure another stock market crash. This is what most investors, governments and households fear at present.

This formula is a theoretical representation of how to determine the likelihood of a crisis. It is by no means a perfect formula, but it is an attempt at explaining a crisis which can be improved upon in future working papers. Other variables which were explored in this paper, such as unemployment and inflation levels, are either covered by one or more of the variables mentioned above or have been mitigated by government policies (i.e. the U.S stockpiling of oil to mitigate the effects of oil prices). The following diagram attempts to explain the knock on effects of each of the 4 independent variables and how their affects are translated to individuals and government indicators, directly and indirectly. Additionally, a table has been included which describes the effect of a change in one variable on another. Although 3 tiers have been set up in the previous table, only the individual effects of the independent variables in considered (rather than the effects of second tier variables on third tier ones and visa versa).

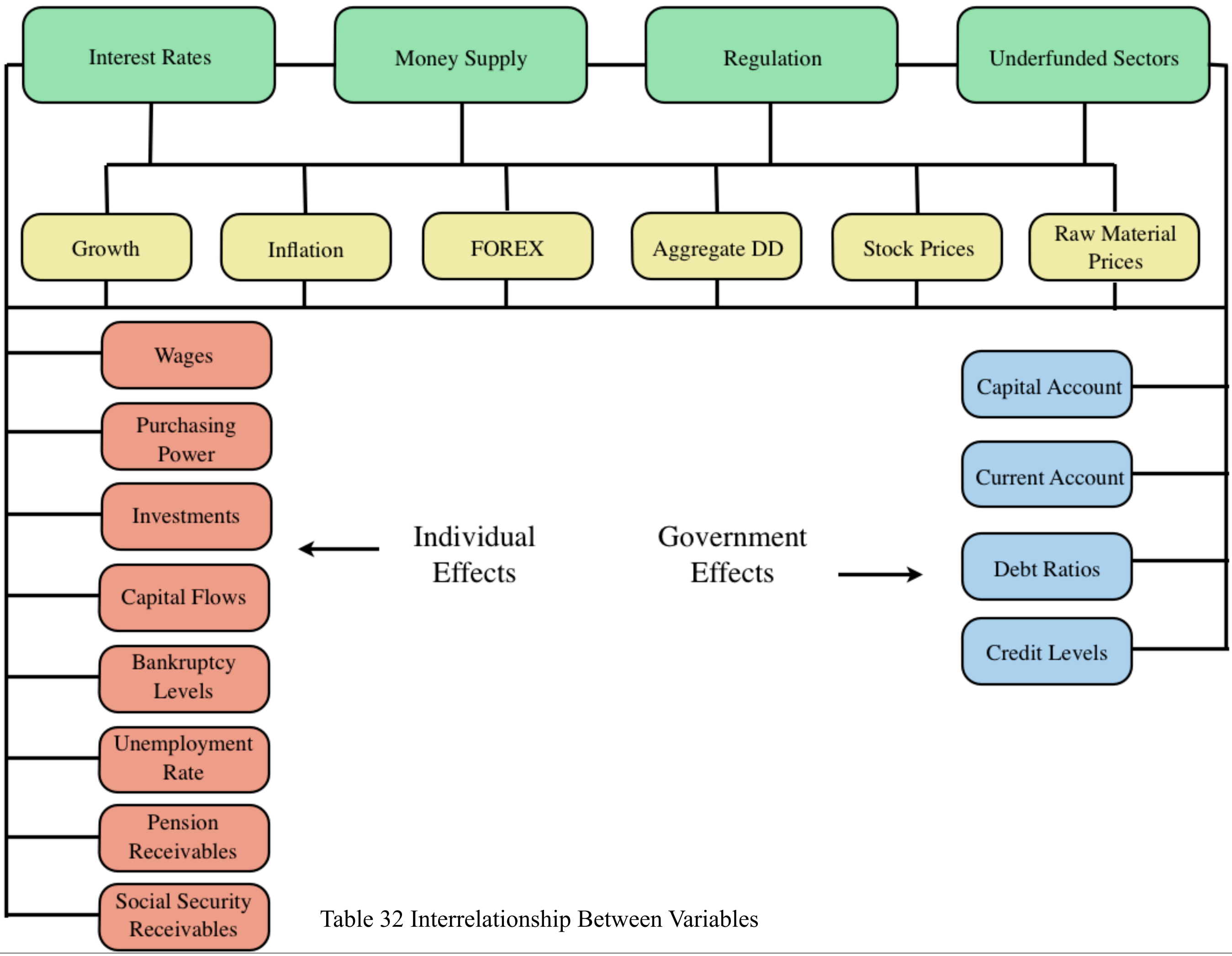


Table 32 Interrelationship Between Variables

	Interest Rates	Money Supply	Regulation	Underfunded Sectors
Growth	-	+	-	?
Inflation	-	+	-	?
FOREX	+/-	-	+/-	?
Agg. Demand	-	+	-	?
Stock Prices	-	+	-	?
Raw Material Prices	-	+	-	?
Wages	-	+	+/-	?
Purchasing Power	-	+/-	-	?
Investments	+	+	-	?
Capital Flows	+/-	+	-	?
Bankruptcy Levels	+/-	-	-	?
Unemployment Rate	-	-	+/-	?
Pension Receivables	+	+	+/-	?
Social Security	+	+	+/-	?
Capital Account	+/-	-	-	?
Current Account	+	+	+	?
Debt Ratios	+/-	+	-	?
Credit Levels	+/-	+	-	?

Table 33 Interrelationship Between Variables (2)

At present, this paper has begun with this diagram for purpose of clarity. This formula could provide the foundation for further research and acts as a blueprint to understand the variables present in crisis forecasting. Its main difficulty is the accurate measurement of alpha and the independent variables. As stock prices are now acting more independently of economic growth, they can no longer be used as a basis for the boom/bust cycle.

Chapter 3 - Theoretical Analysis of Financial Experts

3.1 Adam Smith

Adam Smith is regarded as one of the "grandfathers" of modern economics and offered revolutionary ideas in the field of economics during his lifetime. His most famous work is titled "An Inquiry into the Nature and Causes of the Wealth of Nations", written in 1776, which comprises of 5 "books" explaining his opinion on the state of economies.
In his first book, Adam Smith explains the benefits of specialisation and the mutual advantages of trade. This notion is still taught in schools and universities as the gospel of economics and whilst it might still display some merit, ultimately the current economic climate is becoming increasingly difficult to satisfy with this logic.

A significant idea championed by Adam Smith regarded the trading of public goods. In his 'An Inquiry into the Nature and Causes of the Wealth of Nations' publication, he writes the following:

"By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was not part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good. It is an affectation,indeed, not very common among merchants, and very few words need be employed in dissuading them from it." [102]

Through this quote, we can see the familiarity of modern day Republican beliefs, which were echoed by Ayn Rand in her publication "The Virtue of Selfishness" in 1964. The meaning

[102] Adam Smith - 'An Inquiry into the Nature and Causes of the Wealth of Nations' - pg. 364

behind both sources is that a citizen should endeavour to achieve the best he can by maximising self profit, and, by doing so, will actually benefit the entire economy.

In the final chapter of his publication, Adam Smith addresses briefly the concept of debt:

"They (rich men) could not well, indeed, do any thing else but hoard whatever money they saved. To trade was disgraceful to a gentle man; and to lend money at interest, which at the time was considered as usury, and prohibited bylaw, would have been still more so."[103]

In fact, Adam Smith continues by considering debt as an unfortunate necessity, albeit one which should only be restricted to governments when war breaks out. Naturally, we now live in an economy which could not have been envisaged by Adam Smith, one where debt levels have reached incomprehensible proportions to the common man. When referring to the financing of todays public goods, Adam Smith's invisible hand seems to fall short. Would education, food standards, water quality, social security and medicare be more efficiently run privately? Would organisations such as EPA exist to attempt to minimise our environmental footprint? Or would they at, as Adam Smith states, in their own best interests? It is very difficult to see the benefits to those Americans who would expect to pay considerably more for health care should Adam Smith's idea be implemented today.

The consequence which Adam Smith did not recognise was that of the inherent moral hazard of privatising public goods. As an example, the London Underground network, which entered a public-private-partnership (PPP) in 2003, is considered. This venture, proposed by Gordon Brown, was aimed at improving and repairing the severely outdated underground system.[104] [105] Contracts with private enterprises Tubeline and Metronet were signed on a 30 year basis to improve these systems, whereby the government reimbursed London for the costs. Of these, consultancy costs and fees alone were estimated to have exceeded £500 million. 4 years later, Metronet filed for bankruptcy, costing the taxpayer over £400 million. It has been claimed that this was due to insider trading and deals to enrich a few individuals at the publics expense.[106]

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[103] ibid 103 - pp. 749 - 50

[104] London Evening Standard - TFL takes over Tube Lines to end Underground privatisation - 28/06/2010 - http://www.standard.co.uk/news/tfl-takes-over-tube-lines-to-end-underground-privatisation-6485451.html

[105] Tunnel Vision The Privatisation of the London Underground - Susannah McAleese - Senior Sophister - Student Economic Review - pp. 55-56

[106] Transport Republic website - London Underground Privatization Experiment Dead as Remaining PPP is Bought Out - 11/05/2011 - http://www.thetransportpolitic.com/2010/05/11/london-undergrounds-privatization-experiment-dead-as-remaining-ppp-is-bought-out/

This modern day example serves as a reminder of the negative externalities when private interests own public goods. Tubeline and Metronet knew that if they were no longer able to provide their service, the government would be forced to intervene; the city simply could not function without an underground system. Upon this realisation, all notion of increasing efficiency and improving life for the public became a secondary objective. The primary goal was for managers to line their pockets with as much money as possible and help those who they were friends with. This is the moral hazard issue when the government acts as an insurance mechanism against private interest.

A second example was the privatisation of Bolivia's water utilities to foreign interests (some American) between 2000 - 2005. This was primarily done in response to Bolivia's large debt to America, whereby it was forced to sell off its public utility services to cover its costs. As private companies are profit maximisers, costs rose for the already impoverished citizens. When these became unaffordable (in Cochabamba) they rioted, causing the American companies to withdraw.[107] The underlying fact is that when private companies take control of public utilities or goods which are necessary to the people, it is those people who end up with the short end of the stick.[108]

Clearly Adam Smith did not comprehend the level of greed which is prevalent in society (especially in Wall Street) today, nor the consequences that such greed could have on the common man. However, it is important to identify his separation of public and private goods - if public goods were solely in the hands on the government, would the crisis of 2008 still have occurred? There is enough evidence to suggest that the crisis may still have arisen, although the consequences would not have been so great. Nevertheless, the government bailouts which occurred in 2008-2009 resulted in the nationalisation of part of the insurance industry through the federal takeover of Fannie Mae and Freddie Mac.

3.2 John Maynard Keynes

John Maynard Keynes is often cited in modern economics and his theories have been implemented by recent politicians to improve and stabilise the United States economy. Of his most famous works, the 1930 publication "A Treatise on Money" and the more famous "General Theory of Employment, Interest and Money" (1936) are considered in this chapter.

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[107] The Politics of Water in Bolivia - The Nation Website - http://www.thenation.com/article/politics-water-bolivia#

[108] Privatization of Water in Bolivia - World Savvy Monitor - http://worldsavvy.org/monitor/index.php?option=com_contentandid=731andItemid=1177

The aforementioned publications stipulate that wages are equal to the marginal product of labour and that the utility of the wage of a given volume of employed labour is equal to the marginal disutility of that amount of employment.[109]

The idea is then developed with the clarification of unemployment and effective demand. In his general theory of employment, Keynes analyses the effect of the propensity to consume, the marginal efficiency of capital and the interest rate on employment and national income.[110]

When considering trade cycles, Keynes also considers speculation, although he terms it as the *"force which is propelling the system upwards....but gradually loses its strength until at a certain point it tends to be replaced by a a force in the opposite direction"*.[111] The onset of the crisis itself and the period after the peak has been reached is, according to Keynes, not predominantly caused by a high interest rate. Instead, he points to the collapse marginal efficiency of capital, which is the present discounted value of an asset equated to its supply price. This once again points to speculation. The only thing which prolongs a boom or recession is the lack of confidence that the future price will change. However, once this starts to change, a recession will happen abruptly and painfully. This view is in alignment with the mathematical formula which was clarified at the end of the previous chapter. The interest rate is used to alter the shape of the business cycle curve but cannot permanently offset the cycle from boom to bust. The difference between the philosophy written by Keynes and the authors formula is the inclusion of additional independent variables which can also alter the business cycle curve.

Keynsian economics also advocates the intervention of governments to act as a correcting mechanism in markets which cannot correct themselves:

"Furthermore, the modern classical theory has itself called attention to various conditions in which the free play of economic forces may need to be curbed or guided. But there will still remain a wide field for the exercise of private initiative and responsibility. Within this field the traditional advantages of individualism will still hold good."[112]

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109 The General Theory of Employment, Interest and Money - Chapter 2 - The Postulates of the Classical Economics.

110 ibid 110 The General Theory of Employment re-stated

111 ibid 110 Chapter 22 - Notes on the Trade Cycle

112 ibid Concluding Notes on the Social Philosophy Towards Which the General Theory Might Lead - III

A simple notion of this is the production of pollution, whereby governments implement a tax (alongside cap and trade) to discourage a negative externality caused by market firms. In todays economic climate, Keynesian economics would encourage the policies that the U.S government are currently adopting; an increase in the money supply, low interest rates, and an expansive fiscal policy.

The interesting analysis of Keynesian economics arrives when we see the effects of these recommendations and if they really have the intended effects. What we observe today is that markets are so distorted by government intervention that prices have become impossible to accurately predict. The debate today is whether the government has influenced the market too much and created more problems than it has been able to solve. In the case of the 2008 financial crisis, the American government was convinced that intervention was the only way to avoid a catastrophic market collapse. now we can see the effects of their intervention - record high stock prices and minimal growth. Too much cheap money provided by the government to banks and not enough from banks to the public. What should be highlighted once again is that this is an unnatural state of the economy, as stock prices are positively correlated with growth rates.

The area in which Keynesian economics deserves further mention concerns wages. The wage structure has (in the authors opinion) been benefitted with the inclusion of the minimum wage, however according to Keynes the reduction of wages could have been employed to stimulate output and employment. The minimum wage therefore is a method of government intervention which makes it more difficult to help an economy out of a recession. In spite of this, I do have to disagree with the premise of Keynes argument. In todays society, production is not the problem, as unemployment has taken over as a more serious difficulty. Production over the last few decades has increased at extraordinary rates, however as people are relieved of their jobs in favour of machines, they join the increasing number of structurally unemployed Americans. Increasing production will not stimulate demand, because the minimum wage is compensated by government social security payments. The difference in purchasing power between an unemployed citizen and one which is working on the minimum wage cannot spark the demand led growth that would restore the economy to a more healthy state.

Furthermore, the extravagant bonuses of Wall Street employees must surely represent a market failure. In America today, the top 1% of the earners own over 40% of the country's wealth.[113] The disparity in wealth is becoming wider in America and is leading to the erosion

[113] Yahoo Finance - The Top 5 Facts About America's Richest 1% - http://finance.yahoo.com/blogs/daily-ticker/top-5-facts-america-richest-1-183022655.html

of the middle class, If this trend persist, the United States may start to see falling tax revenues from the poorer middle class and would be forced to change its fiscal policy by raising taxes high earners.

Additionally, Keynes brings up another important factor by describing the liquidity of savings that low and middle class consumers have.[114] A simple analogy of this would be if the government wished to boost aggregate demand by lowering interest rates. In essence this seems like a logical idea. However, if the majority of customers savings are in illiquid assets, such as houses, then the increase of interest rates will not cause demand led growth. This could be an explanation for current market observations, because a large number of Americans now have loans which exceed the value of their properties and a limited amount of liquid assets.[115]

With regard to employment levels, (currently a major issue in America), Keynes discusses the elasticity of employment as follows:

"Changes in employment depend solely on changes in effective aggregate demand....If, for example, the increased demand is largely directed towards products which have a high elasticity of employment, the aggregate increase in employment will be greater than if it is largely directed towards products which have a low elasticity of employment." [116]

This measure is also being adopted by the Obama administration, in particular the governments initiative to improve the infrastructure of American cities and the automobile industry. Both of these industries are labour intensive and in areas with some degree of elastic employment. Previously unemployed workers will now find it easier to work and can relieve the government of its social security burden. However, this measure is a short term solution for a much longer term problem.

Keynesian economics still plays a role in todays economy and his policies of market correction, aggregate demand stimulation and unemployment reduction are still attempted to solve todays economic problems. The main critique of Keynes is that he assumes the homogeneity of both demand and employment.

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[114] ibid 110 - Chapter 13 - The General Theory of the Rate of Interest

[115] Bloomberg: Bank of America Faces Bad Home-Equity Loans: Mortgages - http://www.bloomberg.com/news/2012-04-18/bank-of-america-faces-bad-home-equity-loans-mortgages.html

[116] ibid 110 - Chapter 20

3.3 Friedrich Hayek

Friedrich Hayek was also a prominent economist in the 1930's who shared a very different view than that of Keynes. In particular, Hayek was a pure free market economist who believed in as little market intervention as possible. His view on unemployment and business cycles was that their fluctuations were a result of government monetary policy, (namely low interest rates and an increase in the money supply,) which create discrepancies in the effective demand in the economy:

"Now, so long as the money rate of interest coincides with the equilibrium rate, the rate of interest remains "neutral" in its effects on the prices of goods, tending neither to raise nor to lower them When the banks, however, lower the money rate of interest below the equilibrium rate, which they can do by lending more than has been entrusted to them, i.e., by adding to the circulation, this must tend to raise prices ; if they raise the money rate above the equilibrium rate—a case of less practical importance—they exert a depressing influence on prices."[117]

Hayek's views on economics, which formed the basis of the Austrian school of economics, have not been contemplated in recent American policymaking. The only politician who believes in the no intervention free market system that Hayek is promoting is Ron Paul, however it is likely that he will have the power to enact any of these ideas.

On the other hand, Hayek does state that banks need to be kept in check and should only allowed to lend the same amount that has already been deposited, thereby maintaining the level of money in circulation.[118] This would seem to suggest that Hayek is in favour of regulation when determining todays money supply, which then in turn will allow the interest rate to reach its "natural" level.

When dealing with a financial crisis, Hayek policies would advocate the removal of government intervention to allow the market to self correct. Prices, wages, interest rates and unemployment are all restored to market rates when this occurs. In effect, the market knows best and reflects the true quantities of variables. We can draw two main conclusions from this:

i) Government intervention causes market disequilibriums which cause greater damage in the long term. A financial crisis such as in 2008 would not have ben so severe had the government not intervened so heavily.

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[117] Friedrich A. Hayek - Prices and Production - pg. 24

[118] ibid 118 pg. 27

ii) Although markets do not contain perfect information (as opposed to Keynesian economics), every participant in the market has some information which is used efficiently.[119] The inability of governments to have all the information means that they make incorrect decisions when attempting to intervene.

Naturally, it is always considered a more prudent idea to remove the boom/bust cycle during a recession rather than a boom. However, there are some area to this logic which remain somewhat dubious. In particular, markets often do not act efficiently. Information is asymmetrically distributed within the market and uncertainty defeats the concept of the markets ability to self correct. Moreover, the notion of sticky pricing is also explored (by Stiglitz), whereby the insufficient flexibility of prices and wages hinder the self correction principle.

Lastly, it is unlikely that America will ever have the chance to test Hayek's proposal due to the role of the FED and its resistance to any form of relinquishment of power. Nevertheless, we can take from Hayek the warning of the danger of excessive market intervention, something which Keynes does not discuss.

3.4 Milton Friedman

Milton Friedman is best known for his nobel prize paper on inflation and unemployment in 1976, his research on consumption analysis and his advocation of the quantity theory of money. He was one of the most high profile members of the Chicago School of Economics and was a critique of government intervention in the money supply.

Regarding the quantity theory of money, Friedman states:

"For a household, for example, the quantity of money can be expressed in terms of the number of weeks of the household's average level of consumption that it could finance with its money balances, or, alternatively, in tenns of the number of weeks of its average income to which its money balances are equal. For a business enterprise, the real quantity of money it holds can be expressed in terms of the number of weeks of its average purchases, or of its average sales, or of its average expenditures on final productive services (net value added) to which its money balances are equal. For the community as a whole, the real quantity of money can be expressed in

[119] Josef Stiglitz - Library of Economics and Liberty - http://www.econlib.org/library/Enc/Information.html

terms of 'the number of weeks of aggregate transactions of the community, or aggregate net output of the 'community, to which it is equal."[120]

Milton Friedman grounds his ideas on monetary policy by stating that the government manipulation of the money supply caused the Great Depression in the 1920's. Indeed it was true that there was significant intervention in money markets in the decade running up to the great crisis, which allowed for the rise of the large speculative bubble and its subsequent collapse.

Naturally the control of the money supply must be done carefully to also avoid the erosion of purchasing power and to stabilise prices. As a result, Friedman proposes a system whereby the money supply is raised sequentially by small increments. This would avoid a strong inflationary pressure on prices whilst still accommodating for growth.

In terms of fiscal policy, Friedman was opposed to influencing demand by government spending and taxation, preferring a more laissez-faire approach. Whilst he did admit that some public goods should be kept in control of the government, he argues that, if privatised, many of these goods could become more efficiently run.

In addition, Milton Friedman does touch on the inequality of wealth. There is nothing fair in how we are brought up, our level of education or our physical appearance. The fact that we are unequal and have some benefits and weaknesses however gives us the individuality that drives markets forward.[121] When referring to social security, Friedman describes this as a mechanism which destroys a persons independence. The most compelling case is when health care and social security benefits that an unemployed citizen receives are higher than those of a low class worker. As people are self maximising, it is obvious that they would prefer not to work and receive more money than to work many hours and receive less. Furthermore, when they have children, they are also covered and can create a social security trap which is difficult to escape from. When a citizen receives social security, they are bound by government rules and regulations, therefore losing their independence and feeling of self worth. Alternatively, if we took away social security entirely, the level government bureaucracy could be reduced and people would try a lot harder to find a job. It is easy to spend someone else's money, but a different prospect when it is your own.[122]

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[120] A Theoretical Framework For Monetary Analysis - Milton Friedman - The Quantity Theory: Nominal versus Real Quantity of Money - pg. 2

[121] Milton Friedman: Power of the Market - Fairness - http://www.youtube.com/watch?v=SW86iE-ddaI

[122] Milton Friedman: Power of the Market - Welfare - http://www.youtube.com/watch?v=bJWZ27OT16Mandfeature=endscreen

This point has implications regarding how to tax the population. A. B. Atkinson, a British economist, mentions that optimal tax rates depend on the relevant elasticities of the tax base, the externalities and the potential effect of the supply of public goods on the tax base.[123]

The author agrees with the majority of Milton Friedman's statements and can see today the disincentives in practice which raise unemployment rates. However, the assumption that the jobs to cover unemployed citizens exist is one which is now becoming obsolete. The main objective of a firm is to cut costs and maximise production, therefore goods can be offered to the market at competitive rates. There is no concept of the negative externalities which arise from this goal. There is no mention of pollution, corruption, market collusion, imperfect information, or increasing mechanisation. The bill of free market economics lies at the feet of the government, because unequal distribution of wealth and greed have no moral obligation to any other entity, whether it is our fellow humans or the sustainability of the planet. Take for example the most recent financial crisis - was this the cause of free market economics running amok or was it due to the overburdening influence of the government? I would think that most people would incline to agree with the first rational rather than the second.

Admittedly, government bureaucracy is a swollen machine which inefficiently allocates the hard earned taxes of workers, but where would these people work if if was shut down? In the case of Belgium, where a large percentage of workers are dependent on the government for their salaries, the removal of bureaucracy would have an impact on the unemployment rate. Would the market easily provide substitute jobs? If so, would there be other barriers to employment, such as structural or frictional unemployment? It seems that Milton Friedman places far too much trust in the market to correct problems on its own. In all honesty, the marketplace today is still struggling with job creation after government intervention. The notion therefore that the marketplace can simply solve the excess unemployment is a little too optimistic.

3.5 Joseph Stiglitz

Joseph Stiglitz is an economist and modern critic of free market economics. He won the Nobel Prize for his work on market asymmetry, which hinders the self correcting nature that economists such as Hayek claimed the free market possesses. In 2011, Joseph Stiglitz wrote a paper describing his views on the financial crisis titled 'The Ideological Crisis of Western Capitalism'. In this publication, he arrived at a similar conclusion to that of Milton Friedman by considering the difference between nominal and real wages. Prior to the financial crisis,

[123] A.B. Atkinson - On the Measure of Inequality - Faculty of Economics and Politics, University of Cambridge - 17/02/1969

America experienced a level of output growth that was unsustainable. Indeed, wage rises could not keep up in real terms and provide the demand which could form an optimal market equilibrium. At the same time, the wealth gap in America was becoming wider; wealth was becoming increasingly concentrated in smaller percentages of the population, while the rest became relatively poorer than before due to inflationary pressure. The result of would normally have been the stagnation of economic demand, however credit markets were able to fill in and the American population took out increasing levels of debt. Elsewhere in the markets, continuing waves of deregulation were allowing debt fuelled companies and citizens to provide the demand needed to maintain the status quo.

To expand further, wages are not flexible enough in free markets. These cause disequilibriums which lower levels of purchasing power. This was offset by accessibility to credit. If wages are not flexible enough, then employment must also be behind equilibrium levels. Does this therefore necessitate government intervention to correct this delay? Friedman and Hayek would argue no. The policy of governments to allow greater accessibility to credit, if restricted to the short term, could have risen spending power of citizens to equilibrium levels. The problem with this is human nature; in America in particular, people who have just secured extra credit will be more likely to overspend, meaning short term overconsumption and long term pain. This is the micro economic analogy of the 2008 crisis, which occurred on a much larger scale.

Stiglitz had hoped that the financial crisis would have brought about a more careful economic policy which was long term oriented. Unfortunately, he describes the resurgence of extreme right wing economics and their race towards a default on public debt.[124]

This particular brand of right wing economics advocates neither the mass reduction of government spending nor the increase of taxes, however they do push for large decreases in the public debt. This maddening form of policy is somewhat delusional and self defeating. The budget deficit needs to be correct either by raising revenues or by cutting spending. The most prudent idea would be to analyse when America was previously in a budget surplus, which was during the Clinton administration. As a result, we can see today that tax rates are lower than those in the 1990's and that spending has risen continuously over the last two decades, mainly due to the over-generosity of the Bush administration and through the financing of 2 wars.[125]

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124 Josef E. Stiglitz - The Ideological Crisis of Western Capitalism - http://www.project-syndicate.org/commentary/the-ideological-crisis-of-western-capitalism

125 See Attachment 2 - BBC excerpt on tax levels for the last 3 United States administrations.

Joseph Stiglitz offers a few ideas which should be implemented as soon as possible to improve the economy - the withdrawal of America from Iraq and Afghanistan, a raise in taxes, a reduction in government spending, pro-employment policies and an increase in financial regulation. These policies will most likely reduce the deficit and beneficially affect the future of the American economy, but will cause some degree of short term pain. They all point to a lot stricter control over the presumed excesses in the marketplace, fiscal conservatism and a move towards budget neutrality. In times of financial instability, this does appear to be the most impressive theory present, although it was not adopted in 2008. It could be argued though that government intervention through monetary and fiscal expansion was necessary to fuel the growth which is needed to pull the economy out of the recession. We can see by comparison the situation in England, which has become more fiscally conservative since the last crisis and is experiencing continual problems with growth. Nevertheless, the idea of a government which lives within its own means is a shrewd one.

3.6 Robert Mundell

Seemingly in contrast to Stiglitz, Robert Mundell is a supply side econometrician who advocates low levels of regulation and an expansionary fiscal policy to stimulate growth during a recession. He won the Nobel Prize for Economics in 1999 and is known for his views on the importance of exchange rates and their effect on financial crisis. In his speech at the heritage foundation on April 10th, 2010, Mundell cites the continuous depreciation of the dollar since 2001 as the cause for a tighter money market (as demand for dollars increased) which the Federal Exchange failed to correct.[126] The subprime bubble itself was exacerbated by this dollar demand. If the FED had bought foreign currency at the beginning of 2008, Mundell claims that the crisis would have never occurred.

Whilst Mundell does not exclude the role of the derivates markets in the lead up to the 2008 crisis, he concludes that exchange rate fluctuations were the main cause. To support his claim, he mentions that 4 banking crises have occurred when exchange rates float and none whilst they are fixed. He also is able to draw upon his previous analysis of government policy with his explanation of the impossible triangle, which states that out of price stability, domestic autonomy and free capital flows, the government is only able to control two of these variables at best.[127]

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[126] The Heritage Foundation - The Dollar, The Euro, and the International Money Order: What is the U.S. to Do? - Robert Mundell - http://www.heritage.org/events/2010/04/the-dollar-the-euro-and-the-international-monetary-order

[127] ibid 126

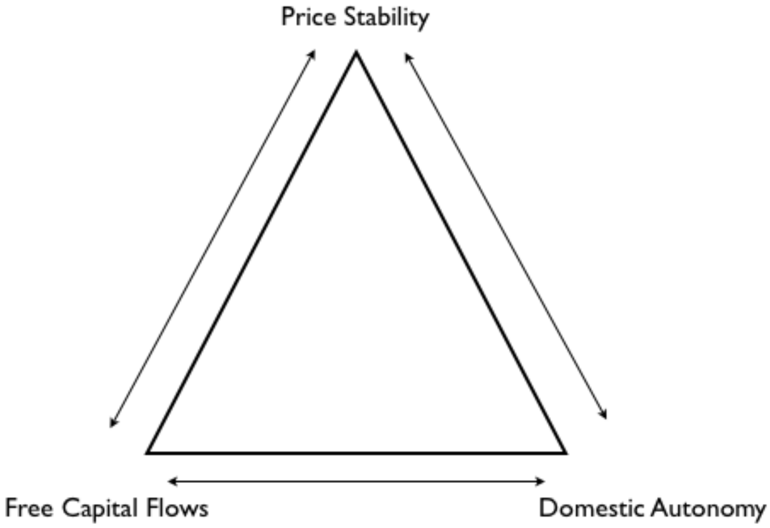

Table 34 Mundell's Triangle

Mundell's view on how to solve the financial crisis also differs greatly from that of Stiglitz. He encourages a reduction in corporation tax from 35% to 15% in order to stimulate the economy, whilst also proposing the issuance of spending vouchers to increase effective demand. When addressing the subject of the banking sector, Mundell believes in the government takeover and restructuring of banks, which then are to be privatised again. He then continues by promoting the idea to fix the Dollar with the Euro, the Yuan and the Yen alongside a 'coordination of international monetary policy' to stabilise the world economy.[128] These views have previously been open to criticism by more conventional economists and contradict the views of the policy-makers in power. Regardless of this, Mundell is considered to be the grandfather of supply side economics and his opinions do represent a new approach to a problem where others have failed.

The critique of Mundell's opinion is that while the exchange rate is important to consider, it was not the main cause of the financial crisis, nor is it likely to be the main cause of a future crisis. In the conclusion to his publication 'A Reconsideration of the Twentieth Century', Mundell states that today's monetary system is still *"inferior to that with which it began, but much improved from the situation that existed only two and a half decades ago"*.[129] However, he also clarifies that the 2008 crisis, (the biggest of its kind since 1929,) was caused by an overvalued dollar. One of two conclusions can therefore be drawn from this: either Mundell was overconfident is analysing the monetary system in 2000 or something extraordinary happened between 2000 and 2008 to the money markets which eroded the improvements of the last few decades. Whilst it is clear that the dollar depreciated considerably in value during that time, could it really have caused one of the worst crises in history?

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[128] ibid 126

[129] Mundell: A Reconsideration of the Twentieth Century - Chapter 4 - Conclusions

The financial crisis inquiry report itself did not consider the exchange rate to be one of the underlying factors behind the financial crisis. Furthermore, whilst we can observe the high exchange rate volatility over the last 4 years, the 2012 dollar/euro and dollar/pound exchange rates have now returned to pre crisis levels. This would seem to suggest a longer run exchange rate equilibrium.

Secondly, Mundell has not addressed the consequences of fiscal policy expansion on public debt, which currently stands at a precarious level. Most economists can agree that low interest rates (and a weaker dollar) during the boom period helped create the stock market bubble, however it is the simultaneous pre-crisis accumulation of public debt that has made this recession so long and deep, rather than the disequilibrium in money markets. As mentioned in the paragraph above, exchange rates of major currencies have returned to pre-crisis levels. However, confidence in currencies and government bonds has been called into question. As a result, public debt levels have a knock on effect on capital flows to and from currencies, which in turn affect yields of government bonds and general confidence in markets. It is only post 2008 that this concept has come to light, however it does change the dynamics of money markets.

Thirdly, since the financial crisis of 2008 was truly global, as shown by its effect on European, Asian and American markets, then a policy by the Federal Exchange to appreciate the Dollar prior to the crisis would not have mitigated it. This policy would have potentially added greater deflationary pressure to American stock markets as the currency becomes stronger, however it was the actions of the banking sector (coupled with low levels of regulation) which artificially inflated the subprime market. Additionally, bankers had already seized a large amount of the capital which supported the market through extravagant wages and bonuses. In the authors opinion, the causes of the 2008 financial crisis were therefore much more complex than just the disequilibrium in money markets.

3.7 Paul Krugman

Paul Krugman is another recipient of the Nobel prize in economics, this time for his work on International Trade and Economic Geography. He is also a regular columnist for the New York Times and advocates an expansionary fiscal similar to Mundell to promote demand led growth and reduce unemployment. His speciality lies in the analysis of the east asian financial crisis at the end of the 1990's, whereby the conventional measures to reduce the negative effects of a crisis (i.e. monetary expansion) cause a large currency devaluation. Companies which took out loans in foreign currencies, especially in dollars, were in danger of being unable to repay their costs. This provided the asian governments with a dilemma. A reduction in interest rates may promote demand led growth but reduce the value of the currency, whilst an increase in interest rates may dampen the economic recovery.[130]

In his speech to the Nobel prize lecture in 2008, Paul Krugman disagrees with Mundell on the speed at which the federal exchange react to the onset of a crisis and during the crisis itself. Whilst Mundell criticises the federal exchange for delaying, Krugman points out that if they had acted quicker, it would not have caused much of a difference.[131]

Krugman is also pro regulation, through which he cites the trend of deregulation as one of the major causes of the financial crisis in 2008. In order to fix this current crisis or at least to accelerate the recovery, he promotes a further increase of government spending into infrastructure repairs alongside measures to encourage consumers to spend. As a liberal Keynesian, he believes that quantitative easing into the banking system has failed to increase aggregate demand, a theory known as the liquidity trap. Instead more consumption focussed projects should be preferred, some of which have already been implemented. Although Dr Krugman advocates some of the job creation idea the government has had, they were not large enough to pull America out of the recession. He also voiced his opinion against the Bush administrations tax cuts, saying that they only increase the deficit, enrich the wealthy, and have no effect on demand.

A critique of Paul Krugman's proposal stems from the notion that public debt is already too high and can ill afford another large burden of increased government spending. Currently the United States public debt is 110.17% of GDP.[132] According to Reinhardt and Rogoff, once public debt levels surpass 90% the negative mean effects on growth of 4% and median growth by 1%, something which would cause a long term problem for America.[133] In fact, by this analysis America should be reigning in on government spending considerably so that growth is not hampered.

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130 Paul Krugman - What happened to Asia - January 1998 - http://web.mit.edu/krugman/www/DISINTER.html

131 Paul Krugman - Nobel Prize Lecture 2008 - http://www.nobelprize.org/mediaplayer/index.php?id=1072

132 ibid 47.

133 Reinhard and Rogoff "Growth in a time of debt, American economic review, May 2010 p 575

3.8 Tony Judt

Whilst not as renowned an econometrician as those mentioned above, Tony Judt has provided a completely different perspective on the United States economy in his book 'Ill Fares the Land' which the author feels is important to consider.

His analysis of the American economy starts with unemployment and the historical trends. The employment sector itself is made up of three sections, namely the primary (agriculture), secondary (manufacturing) and tertiary (services) sectors. Over the last century, we have seen economies develop from the agricultural intensive to the more service sector dominated, mainly due to improved technology. In fact, the latter of these industries now employs over 70% of the American workforce. This sector is now also becoming increasingly mechanised, whereby workers are less efficient than machines and are sequentially replaced. Before, when the primary and secondary sectors increased their automation, workers were able to switch to the service sector for employment. This is no longer the case, although the implementation of machines instead of human workers continues to increase.

In addition, the workforce requires increasing levels of specialisation to find new jobs. 70 years ago workers were employed as bell boys in elevators and shoe polishers. Nowadays, these practices have become redundant. Instead, the workforce is required to have a background in economics, sciences, engineering or other "purer" subjects to get a good earning job. In simple terms, no redundant miner can become a scientist overnight. The level of technical unemployment therefore encompasses a greater percentage of those without work. This seems perfectly natural evolution of economics, however we can also see that the educational system has not provided children with the proper skill sets to be employed in the working world. Nor has it adapted to the different demand of the economy today.

So what implication does an improvement in technology, the lack of a growth sector to absorb the unemployed and a poor educational system in America have for the future? A rising unemployment rate over time.

On a side note, in 2010 America ranked 25th in mathematics, 14th in reading and 17th in science in OECD countries.[134] This shows that the future workforce will have trouble competing in a global marketplace for future jobs. The implication of mechanisation and a lack of a growth sector is obviously a large increase in the unemployment rate. Not only will

[134] OECD statistics - tests for 15 year old pupils.

this be a continual rise, it will also be a long term one, which will only serve to widen the wealth gap further. Tony Judt writes this, saying:

"Mass unemployment - once regarded as a pathology of badly managed economies, is beginning to look like an endemic characteristic of advanced societies." [135]

Even Keynes stated that capitalism could not be perpetuated if it was solely catered to the rich to become wealthier, however this seems to be the case today. Previously, the view was that as one sector begins its decline another will develop to take its place. This we have seen with the emergence of past inventions ranging form the steam engine to the internet, unfortunately we must consider a 'this time is different' approach, as no new growth industry has appeared to employ those who have lost their jobs to machines. As a result, the levels of unemployment we see today are completely logical and will be extremely difficult to resolve.

Tony Judt is also not an advocate of Hayek's view that low taxation will create growth in the marketplace. America has often been chastised as a 'welfare state', but the problem is the creation of a long term initiative to promote continuous job regeneration as automation increases.

"Only when the welfare states whose failure they (Hayek and von Mises) had so sedulously predicted began to run into difficulties did they once again find an audience for their views: high taxation inhibits growth and efficiency, government regulation stifles initiative and entrepreneurship, the smaller the state the healthier the society, and so forth." [136]

The book proceeds with its views on regulation and criticises the measures of Margaret Thatcher, Gordon Brown and Tony Blair, declaring that a minimally regulated financial system was glorified as people saw the wealth of the economic elite. Together with this admiration came a level of trust. As bankers were doing so well financially at the time, they therefore must be particularly good at what they do. It is no wonder therefore that unwitting pension funds and private investors lost so much money in investment that were deemed to be 'safe'.

Likewise, perhaps the high level of skepticism today is what hinders the resurgence in the economy. We have already ascertained the importance of speculation when dealing with stock

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[135] Tony Judt - Ill Fares The Land - pg. 177

[136] Tony Judt - Ill Fares the Land - page 102

prices, so why should speculation also not be tied with growth? Perhaps the financial crisis has caused such doubt among investors that it will take years for confidence to be restored.

When regarding the privatisation, the political and economic consensus in particular during the 1990's was that through privatisation, public goods could become more efficient and cheaper for the public. The government likewise benefits by ridding itself of an inefficient financial burden, whilst private firms gain revenue streams in a market with little competition.

Tony Judt offers his counterargument with the example of Fannie Mae and Freddy Mac:

"For some years before the 2008 debacle, Fannie Mae had been borrowing money from the government (at artificially depressed rates) and lending it commercially at a very substantial profit. Since the company was private, those profits constituted public monies recycled to the companies shareholders and executives."[137]

Keynesians are also wary of privatisation of public services. They however make an important distinction; since the transition is normally costly and the greed of the private sector is now prevalent in this new market, the benefits must outweigh the privatisation and transition costs together.

So how are the views mentioned above translated into the current world and the topic of financial crises? Firstly, a growing unemployment rate may not accurately represent a financial crisis, instead it may depict the increased automation in the country. When this occurs, the strain on government social security and medicare rises, which could equate to a budget crisis rather than one of credit. Mechanisation could therefore cause a greater instability of government debt ratings and their long term debt goals.

By contrast, the United States government anticipates a steady decline in welfare payments over the next few years. Therefore, either the government does not anticipate the effect of mechanisation or welfare payments are going to fall considerably. In the case of rising unemployment levels, the government must then re-evaluate the effect of its aggregate demand stimulating policies, such as a reduction in taxation and interest rates. The existence of a large unemployment rate will dampen any of these measures, prolonging a recession and changing aggregate demand very little. This brings us back to the mathematical formula in the previous chapter - i.e. it is not the policy that is so important, but where we are in the business cycle. Only then can the correct policy be decided upon and the governments goals achieved.

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137 Tony Judt - Ill Fares the Land - page 112

3.9 Erich Streissler

Erich Streissler is currently an economics professor at the University of Vienna, a member of the Austrian academy of sciences, and former governor of the Vienna stock exchange. His views on the current financial crises comprise of a blend of the aforementioned economists ideas and his own view on the growth economies of the future, especially the development of green technology.

In one of his recent publications, Streissler forecasts that the necessary environmental changes that need to take place in the future will require labour intensive technical changes.[138] Naturally, we do not yet possess the technology for machines to carry out the level of complexity of these operations, therefore the labour force will be rejuvenated by the unavoidable task of improving infrastructure, reducing pollution and upgrading the sustainability of environmental products. Likewise in his second prediction, Prof. Streissler states that investment costs to improve growth are becoming more and more costly due to the need to be as up-to-date as possible. This will also promote the transition from labour saving to labour intensive investments.

So who will pay for these improvements? Will firms actively seek to improve the environment or will they require a governments stick in the back to prod them in the right direction? Alternatively, if the government bears the responsibility for the improvement of public goods, as it is doing now, where will it be able to raise the capital to do this? We have seen recently that the Obama administration is attempting to "put Americans back to work" through legislation designed to increase jobs (The American Recovery and Reinvestment Act), including the improvements of bridges and roads. Despite this, America is reported to still require $3.6 trillion by 2020 to make adequate improvements to its infrastructure (which includes, surface transportation, water and waste infrastructure, electricity, airports, dams, railroads, schools etc).[139] It is paramount that this investment is conducted wisely, provides a significant environmental improvement and remains cutting edge for many years. Professor Streissler covers this point and adds that public investment bear high risks in terms of environmental improvements.

In this particular concept, the future growth is of great importance when forecasting financial crises. The most difficult variable to estimate is when new technology will be implemented,

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[138] Erich Streissler - Forecasting Present day Long-term Macroeconomic Prospects - pg. 3

[139] Think Progress Website - Stimulus Improved Infrastructure, But U.S Needs $3.6 Trillion In Investments By 2020 - http://thinkprogress.org/economy/2013/03/20/1747791/stimulus-infrastructure/

by whom, and to what degree. Furthermore, we cannot confidently say that innovation will come from either the public or private sector; a mix could also occur. By referring to the automobile industry, we can see the hand of government intervention by the subsidies in place. Likewise, the trend towards more green and fuel efficient methods of transport has been adopted by the private companies in this sector. Japanese firms have looked at cars which run on hydrogen, water, natural gas and vegetable oil, whilst oil companies themselves are investing in renewable alternatives to oil (e.g. BP Alternative Energy). As a result, we can assume one of two opinions regarding the emergence of the green industry; the first is that this technology on the brink of implementation and will help pull the economy out of its most recent recession, providing jobs for some the unemployed in the process. Naturally any prognosis regarding a future financial crisis will have to accommodate this logic. Alternatively, we can also speculate that this industry has been highlighted for many years as 'the next big thing', often with little substance. Consequently, we could assume that this industry is still far away from present day implementation and still requires more research. In this event, unemployment rates will not be affected and the economy will have to find a new source of prosperity.

Furthermore, Professor Streissler looks at the economic indicators which could signal if a country has recovery potential. He expands this insight by saying that the United States has very little potential (due to its exporting potential) and that reasonable GDP growth rates do not display the real truth. Instead, the growing inequality of wealth and unemployment figures show America's real plight. The real purchasing power of the United States, especially that of the middle class, has been eroding for the last 2 decades.[140]

In one of his most recent publications titled "Financial Crises and Sovereign Bankruptcies", Professor Streissler is highly critical of the government in the most recent crisis of 2008 and discusses the possibility of forecasting a future downturn. As mentioned earlier in this paper, the United States debt level is simply too high and should be resolved as soon as possible. However, the US is not unfamiliar to exploding debt levels, which stood at 120% of GDP between 1945 - 1955.[141] The remedy for such excessive debt was inflation, which watered down the real value of the debt.

By comparison, attempts to devalue the currency in America (low interest rates, high increases in the money supply, encouragement of bank lending and further deregulation) remain unseen, as European countries are also adopting the same depreciative measures.

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[140] Erich Streissler - Forecasting Present day Long-term Macroeconomic Prospects - pg. 14

[141] CNN Money - U.S. deficit biggest since 1945 - http://money.cnn.com/2009/10/16/news/economy/treasury_deficit/

Ultimately one currency, either the dollar or the euro, will have to endure the short term pain of a currency appreciation. At present, the big losers have been Japan and Switzerland, whose currencies have risen continuously.[142] Before 2008, one Dollar was worth over 115 Yen and approximately 1.2 Swiss Francs, today that value is under 80 Yen and roughly 0.93 Swiss Francs. By comparison, the euro-dollar exchange rate, although volatile, has converged to pre 2008 levels once again. Therefore, the future depreciation of the American currency will determine its ability to reduce its public debt and the likelihood of a future financial crash.

This paper has mentioned the level of regulation as a major influence on the occurrence of a financial crisis. Whilst Prof. Streissler agrees with this, he casts doubt on the ability of the government to regulate. It is often mooted that there is a revolving door between working for the private sector (in particular Goldman Sachs) and the United States government - Nick Paulson and Tim Geithner are perhaps the most famous people for holding high positions in both offices. Mario Draghi, the current head of the European central bank, also was a previous employee of Goldman Sachs. Would these people really help enforce regulation and reduce the power of their old employers who propelled them to these positions? Most likely not. Are the ties between the government and the financial sector the reason behind the lack of penalties given to bankers and the banking sector? Most probably. There is now a concerted public movement to remove the strong ties between the American government and Wall Street, especially with regard to campaign financing, however this task is made nearly impossible due to the level of integration between the two already. As a result, we can assume no imminent wave of regulation which could avert or delay the next financial crisis.

Professor Streissler also offers his reasoning on the level of inflation with respect to the huge increases in the money supply:

"The US central bank lent money to the commercial and investment banks at ridiculously low interest, and the banks used that additional money to buy up the exploding government debt. So the money never got to the business firms or private individuals who might have invested it. At best the money flowed out to finance foreign countries (to Greece, e.g. secretly) – once more bypassing US private finance." [143]

If the governments quantitative easing programs simply circulated around the private sector or was transferred out of the country, it is therefore no wonder that we see little inflation. However, we can observe the tremendous rise of stock prices. Therefore, stock markets seem

[142] The New York Times - Dollar Rallies After the Swiss Say Their Franc Is Overvalued - http://www.nytimes.com/1996/11/01/business/dollar-rallies-after-the-swiss-say-their-franc-is-overvalued.html

[143] Streissler - Financial Crises and Sovereign Bankruptcies - pg. 13

to be the recipients of quantitative easing funds, which never managed to 'trickle down' to home owners and investors.

The discussion of war expenditures has been avoided in this paper because of the uncertainty of war occurring. Nevertheless, we can observe the timing between the beginning of the war (2001 - Afghanistan, 2004 - Iraq), the effects of these wars and a link between war and a future financial crisis. 4 years after the beginning of the Iraq war, The most obvious effect of war is the upward spike in government debt to fund the campaign. The recipients of this government expenditure are military affiliates who provide the latest technology and weapons to ensure success. Naturally, war is very profitable for these companies. So, is there a correlation between the length of the war and the future economic problems? The Iraq and Afghanistan wars are both still ongoing in some capacity, which has accumulated billions of dollars worth of debt at the american taxpayers expense. Had those funds been allocated elsewhere, much more good could have been done to improve the standard of living of every living individual. The most noticeable conclusion is that whilst war does not have a direct affect on when the crisis occurs, it can act as a barrier to quick recovery by draining governments of the ability to use public funds to encourage growth.

Finally, Prof. Streissler writes the following when considering crisis forecasting:

"Economic forecasting is but analysing expected future prices. Speculation is acting on expected future prices. Both forecasts and speculation are nowhere as important as on financial markets."[144]

This quote adds credence to the difficulty of crisis forecasting and the necessity for a model to understand all the factors which influence a crisis. All the variables mentioned in the mathematical formula written at the end of chapter 2 don't magically create crises, but they do have an impact on the future expectations of prices (the alpha value in the equation). Governments should therefore look towards policies which improve the future expectation of prices to restore the economy and manipulate monetary and fiscal policies accordingly.

[144] Streissler - Financial Crises and Sovereign Bankruptcies - pg. 3

Chapter 4 - Additional Economic Drivers

4.1. - Introduction

What we have seen in the lead up to this chapter is a conglomeration of causes of past crises, a general formula which explains the formation of crises and the views of the leading economists. Many of the views of financial experts contradict one another, which suggests that we have still not come to a consensus regarding the correct strategy. Therefore, the idea of this paper was to put a mathematical spin which could be agreed upon, namely the factors which influence a crisis, how deep it is, and how long it will take to recover from. We recall the formula as follows:

$$P(C) = \alpha + \frac{\delta X_1}{\delta \alpha} + \frac{\delta X_2}{\delta \alpha} + \frac{\delta X_3}{\delta \alpha} + \frac{\delta X_4}{\delta \alpha} + \varepsilon$$

The author accepts the problems of multicollinearity, autocorrelation, and the difficulty in quantifying the effect of changes to each of the variables. Nevertheless, the primary aim is to identify the significant variables first and their knock on effects on firms and individuals.

In this chapter, the author will present his views and forecasts of the major topics in economics today. All of these topics have significant influences on markets today, the recovery of the economy and the potential for future crises.

We often see the same economic difficulties repeat themselves alongside the renewed interest in old ideas. Today, we have a more liberal youth who advocate universal health care, social security and other liberal notions. Their views represent old socialist ideas which have been repackaged. There is, however, a lack of innovation and development of new solutions to century old problems. It should be every authors duty to not simply live in the shadows of his predecessors notions but to promote ideas of his own. Therefore, the author feels it is worth exposing his own ideas for rational discourse. Some of these may be dismissed out of hand. If this is the case, then at least the author will learn something from the rebuttal (!), but new ideas should be present for economics as a subject to develop. It brings no wellbeing or satisfaction to simply glorify our previous economic geniuses when the development of our economy has made their concepts outdated or less relevant. Indeed, the world economy has developed considerably since Keynes and Hayek wrote their 'Magnum opus'. The idea that someone is a pure 'Keynesian economist' is somewhat frightening as it shows how rigid we have become in our analysis of economies. Both Keynes and Hayek produced wonderful ideas which aided the progression of our economic knowledge, but also some negative externalities. These of course should be taken into consideration when new theories are developed.

4.2 Balance of Payments Implications

The Balance of Payments is normally looked at from a country specific point of view, which misses the principle that it is a zero-sum game. When countries such as Germany and China amass large balance of payments surpluses, an equal and opposite deficit must exist in other countries. Whether this is due to the comparative advantage in exporting countries or the inability of importing countries to produce these goods internally is peripheral, the balance of payments deficit in net importing countries still accumulates.

Although it can be (rightly) argued that countries are responsible for their individually balance of payments, Germany and China have both taken extreme surplus positions. Their economic strength has benefitted greatly from this position and Germany's economy remains the shining light of the Eurozone. In the long run this cannot be sustainable though. As countries build up ever greater deficits in their current accounts, they take measures to produce goods internally and import less. Therefore, it is the authors view that **a long term current account surplus will create protectionist pressure in importing countries and less long run trade.**

We have seen particularly in China the benefits of export led growth. Over the last few years, China has now attempted to utilise this surplus and develop its internal infrastructure and portfolio of foreign assets. Despite this, China is finding it harder to export its goods.[145] The accumulation of a long term current account surplus has sequentially sapped away the wealth from other countries. Whilst this is a normal and highly regarded focus of capitalism, it does not benefit all interests in the long run. If this effect is prolonged, countries such as Germany and China will erode away the demand base for their exports.

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145 International Centre for Trade and Sustainable Development - China firms face staff bottleneck for exports - http://ictsd.org/i/press/ictsd-in-the-news/75260/

The inevitable outcome is a future downturn in both the importing countries, who now have run up an excessive deficit, and the exporting countries, who previously relied on export led growth and now have lower demand for their products. The end effect is a lose-lose scenario.

Naturally, it is expected for a country with a long term current account surplus to experience appreciation of its currency over time. This has happened in China, with some experts and newspapers (most notably the economist) expressing the view that the yuan is now fairly well valued against the dollar.[146] However, Germany has proven to be somewhat of an exception. Due to the poor economic positions of its fellow european union members, Germany's current account has maintained its profitable position without a significant currency appreciation. This has put Germany in an unique situation whereby its current account surplus can be prolonged.

So what effect has this had on financial crises? Is it pure coincidence that Germany and China, the countries with the highest current account surpluses, have also relatively escaped the brunt of the recession? It is also impressive that Australia's current strength is primarily derived from demand (of raw materials) from China.[147]

Germany, with its strong current account position, has led the eurozone in negotiating bailout packages, especially for Greece and Cyprus. Although there are several problems which have increased the severity of the situations in these countries, an accumulated current account surplus definitely has not helped. Additionally, Germany's exports to Greece have risen dramatically over the last decade, which has contributed to Greece's plight. Similarly, Greece's exports to Germany have hardly changed over the last 20 years. This is displayed in the table below. Its seems therefore a little hypocritical of Germany to be criticising Greece's policies when Germany has itself helped contribute to their current account deficit.

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[146] The Economist - The Plan Worked - http://www.economist.com/blogs/freeexchange/2012/10/currency-manipulation?zid=306andah=1b164dbd43b0cb27ba0d4c3b12a5e227

[147] Why is the Australian Dollar so Strong? http://www.ssfs.com.au/news/why-is-the-australian-dollar-so-strong

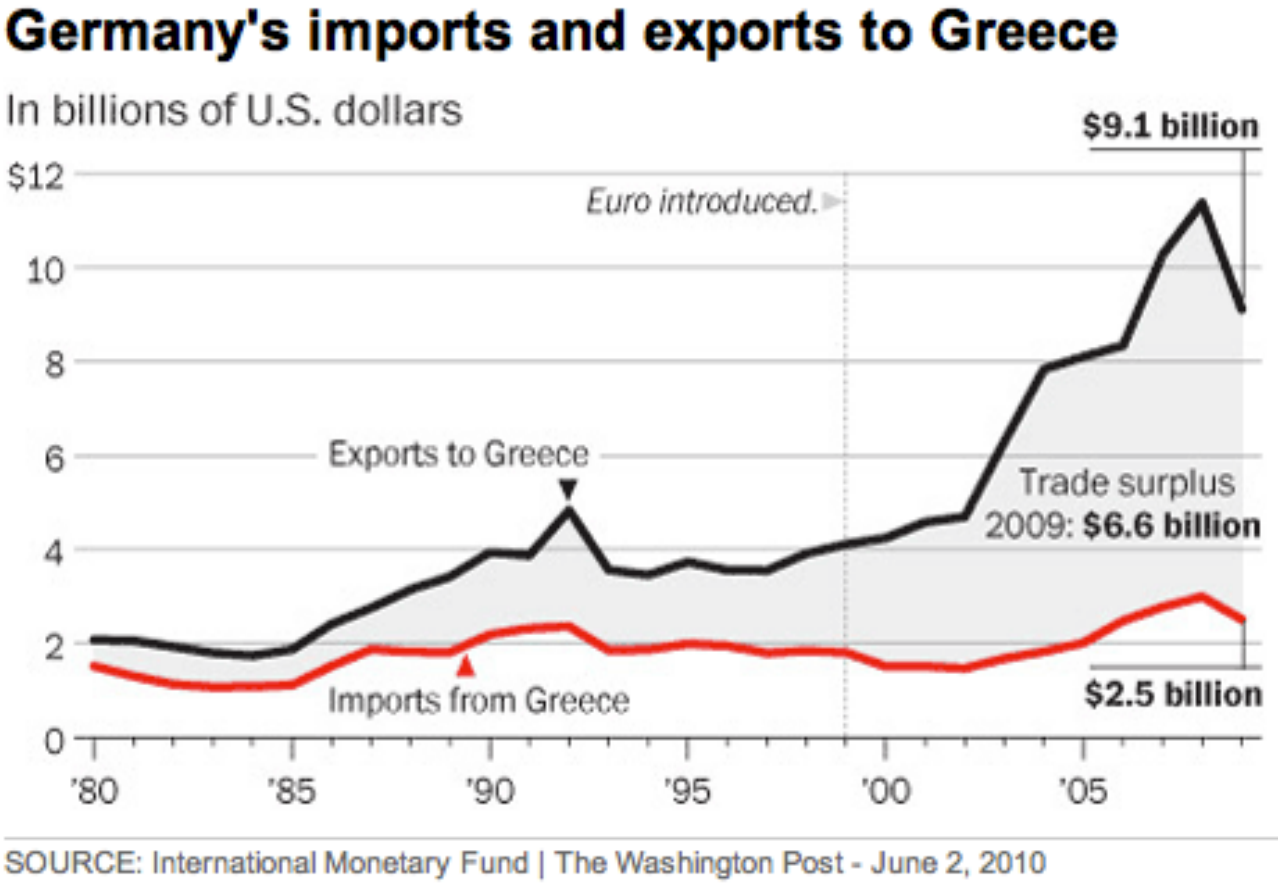

Table 35 - Germany's imports and exports to Greece

So how do we reach equilibriums within the European Union when countries have the same monetary policy, currency and restrictions on their fiscal policies? The main characteristic which therefore can be changed is wages. When wages diverge, firms will look to take advantage of cheap labour in order to maximise profits. This does not happen overnight though. Furthermore, when countries significantly cut their public services through austerity measures, (coupled with social unrest and government insecurity,) the areas become less attractive to new investors. As a result, areas such as Greece have stubborn unemployment levels which are difficult to solve. In addition, countries such as Spain, Portugal and Italy are also suffering with high unemployment, providing competition with Greece for the 'cheap labour' advantage. In the long run though, we do see changes in wages to accommodate developing countries, such as in China.[148]

[148] The Economist - The End of Cheap China - What do soaring Chinese wages mean for cheap manufacturing? - http://www.economist.com/node/21549956

4.3 The Imbalance of European Countries

When analysing Greece and the other newer members of the European Union, we can easily observe the differences between them and their western European counterparts. Greece in particular is experiencing not just a liquidity problem, but a solvency one. This raises the question whether these countries should have been allowed into the EU in the first place, or if we should have been more prudent with our EU expansions.

The European Commission website describes the single market for goods as one of the four 'freedoms' of the european union and writes:

"Lower-risk sectors have not in general been the subject of legislation on a European level. Trade in this "non-harmonised" sector relies on the "mutual recognition" principle, under which products legally manufactured or marketed in one Member State should in principle be able to move freely throughout the EU."[149]

In comparison to west European neighbours, new entrants to the EU have relatively underdeveloped infrastructure and immature global industries. As soon as they enter the European market though, they must open up these industries to trade. This seems rather detrimental to the local industries of the entrant. How can these countries compete with German manufacturing, French agricultural programs or England's financial service sector? They simply can't, as these are long standing industries which have experienced high levels of economies of scale. Whilst the population enjoys lower prices and new products in the short run, the subsequent deficit to the current account cannot be overlooked. Is it ethical to therefore adopt this policy, whereby entrant country can only export their workforces, who accept jobs at reduced pay? The author believes that this would go against the goals of the European Union and waters down the sovereignty of individual nations.

Let's take for example Greece. They adopted the Euro in 2001 and therefore have no control of their money supply or interest rates. The exchange rate is determined by cumulative appreciation and depreciation pressures of each individual european member state. Their fiscal policy is also now largely dictated by the terms of their bailout. They simply have very little control of their own country's macro-economic factors. As this trend continues, the underlying difficulty how countries can rid themselves of recessions without the conventional

[149] European Commission - A Single Market for goods - http://ec.europa.eu/internal_market/top_layer/goods/index_en.htm

macro-economic tools. Perhaps this is why social unrest and unemployment have been growing figures in countries such as Spain, Greece and Italy.

So what measures can Greece take to improve it's economy? Firstly, regardless of whether it remains in the EU or not, it should cut the number of civil servants it employs. Indeed, this idea is already in place as part of the austerity measures, which dictate that Greece cut its number of civil servants by 150,000 by 2015[150] Secondly, it needs to correct its balance of payments deficit by exporting more and importing less. Unfortunately, many countries today are striving to become more internally self sufficient (China through development of its infrastructure, America through its reduction of oil imports etc.), which decreases possible export opportunities. In addition, Greece and other eastern european countries first need to develop an industry in which they can specialise. Greece is attempting to do this at the moment through agriculture and mining, however this process will take time to implement.[151]

The European Union needs to realise that each members requires some form of internal economy (in the form of a specialisation in an industry etc) to succeed: simply adding new members does not guarantee the prosperity that is seemingly offered. What the author proposes is that when countries are considered for EU membership in the future, areas for specialisation must be considered which can be kept internal. Perhaps a form of protectionism at first is also required to allow them to start with EU competitors on an equal footing. Failure to do so will result in continued extreme current account positions which could worsen future financial crises.

4.4 The Role of Banks in America

Throughout this working paper, regulation has been continuously mentioned as THE factor which can prevent financial crises. It is therefore important to divert our attention towards the role of banks in the economy today, how they are regulated and the power that they really exercise in the market. Recently, we see more and more cases of bloated corruption within the banking industry. Whether it is through the laundering of criminal money (Standard Chartered), the manipulation of LIBOR rates, or the artificial expansion of the sub-prime market through excessive risk taking, it is abundantly clear that banks need to be regulated.

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[150] Press TV - Greek Civil Servants Protest Against Austerity Cuts - http://www.presstv.ir/detail/2013/03/14/293483/greek-civil-servants-protest-against-cuts/

[151] Financial Post - After painful restructuring, Greece attempts to grow - http://business.financialpost.com/2012/04/11/after-painful-restructuring-greece-attempts-to-grow/

The purpose of a bank is to provide financial services to clients - which seems simple enough. Clients can invest capital in a bank for saving or speculative purposes, and receive loans to purchase property or other assets. Ultimately, the bank is here to serve the client, a fact which has been forgotten in the industry. Instead, bankers work to increase quarterly profits and expand client bases.

The idea of a bank making billions of dollars per quarter seems somewhat unfair, particularly when the majority of the population would not even dream of such figures. For example, Goldman Sachs posted in the 4th quarter of 2012 alone a **profit** of \$2.89 billion.[152] When banks make these unbelievable profits, should they have a moral obligation to contribute to the resurgence of the economy through providing jobs? Apparently not, because earlier the same year Goldman Sachs cut 2,400 workers who can be replaced by technology.[153] Therefore, we can see the present and future models of banks - less costs, less personnel and higher profits.

In all fairness, banks do perform the function of expanding the money supply, which can also be considered a calculative measure of risk taking. The purpose of this is to increase the liquidity of markets by providing as many loans as possible to the public. This is an honourable service to the public. However, the denial of credit to clients, the risk management methods themselves and the excessive interest demanded is not.

The Federal Exchange in America has come under criticism, in particular from Florida representative Alan Grayson, Vermont Senator Bernie Sanders and former presidential elect Denis Kucinich. All 3 have expressed their desire to audit the Federal Reserve, have criticised the terms of the bailouts of financial institutions in 2008 - 2009, and believe that banks are purposefully restricting credit given to local home owners. Bernie Sanders expressed his opinion that not only are banks 'too big to fail', but that bankers are now 'too big to jail'.[154] The implication is that Wall Street and the Federal Reserve have surpassed the power of the judicial system.

So how can this problem be solved? Can the model which Iceland adopted post 2008 be implemented in America, and how would this affect the prognosis of future crises? The belief

[152] The Boston Globe - Goldman's profit reaches \$2.89 billion - http://www.bostonglobe.com/business/2013/01/17/goldman-profit-reaches/t4EB3R4lQAr4cr2j6QJTNO/story.html

[153] The Huffington Post - Goldman To Fire Employees Who Can Be Replaced By Technology, Miss Performance Targets - http://www.huffingtonpost.com/2012/03/19/goldman-sachs-layoffs_n_1365511.html

[154] Bernie Sanders website - http://www.sanders.senate.gov

of the 3 individuals above is that the more we regulate Wall Street and the Federal Exchange, the more equal the distribution of wealth will be and the easier it will be to create and sustain a healthy middle class. A healthy middle class in turn provides more revenue to the government in the form of taxes and allows the growth of small and middle sized businesses, which can help reduce the unemployment rate.

The American Federal Reserve and the top American banks have an extreme amount of power and a troubling influence on American politics. If the American government changes its policy and decides to secure the savings of citizens, rather than the banks themselves, then banks suddenly lose their moral hazard of going bankrupt and are forced to act more rationally. Therefore, the authors second prediction is that **the severity of the next financial crisis depends on the level of regulation and the attitude of the government towards financial institutions which will be hardest hit. Through greater regulation and the securement of savings, the next crisis could be partially averted.**

Lastly, the severity of the punishments for illegal financial activity must become more severe. For example, Standard Chartered were fined **$340 million for aiding in the laundering over $250 billion and lying to regulators -** does this seem like a sufficient punishment?[155] 2 months later, Standard Chartered agreed to also pay $327 million for violating United States sanctions against Iran, Sudan and two other countries.[156] It is about time that banking institutions return to their roots and serve the public rather than just themselves.

4.5 America as a 'Welfare State' - The Unemployment Burden

America has been increasingly labeled a 'welfare state' under the Obama administration, whereby workers are now (apparently) dis-incentivised to work, due to the large unemployment benefits they receive. This claim, which was highlighted by Milton Friedman and explained earlier, creates a form of class warfare, such that tax payers become resentful of the recipients of their 'hard earned tax-dollars'.

Government fiscal policy was of great importance in the last election. Therefore, an analysis regarding government spending on welfare payments in relation to income tax receipts has been undertaken and concluded below. The figures have been obtained from 2 reliable

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155 The New York Times - British Bank in $340 Million Settlement for Laundering - http://www.nytimes.com/2012/08/15/business/standard-chartered-settles-with-new-york-for-340-million.html?pagewanted=alland_r=0

156 Reuters - Standard Chartered to pay $327 million in U.S sanctions case - http://www.reuters.com/article/2012/12/10/us-stanchart-settlement-idUSBRE8B90OT20121210

sources, namely the Bureau for Labour and Statistics and the Office of Management and Budget of the White House. Both of these departments record extremely up to date and accurate information regarding expenditures and people in the work force.

The purpose of this exercise will be explained further in the final section of this paper, however the basis lies in the trade off between contributions which the government receives from income tax and government expenditure towards welfare. Do tax payers in fact cover all of the costs for living for non tax payers? If not, how much is the additional cost which needs to be footed by the government? The following set of equations show how the net contribution and net expenditure is calculated. Naturally, it is impossible to determine individual tax contributions, as wages vary. Some taxes are also either 'evaded' or 'avoided'.

Trade off between Contributions and Receivables

i) $$\frac{\text{Total Revenue Received from Income Tax}}{\text{No. of Employed People in Workforce}} = \text{Average Contribution per employee}$$

ii) $$\frac{\text{Total Welfare Expenditure}}{\text{No. of Unemployed People}} = \text{Average Welfare received by Unemployed people}$$

iii) $$\text{Average Contribution per employee} - \text{Average Welfare received by Unemployed people}$$
$$= \text{Net Government Contribution/Expenditure per Worker}$$

iv) $$\text{Total Revenue Received from Income Tax} = \left\{ \begin{array}{l} \text{Income Tax from Employed Work Force} \\ \text{Income Tax from Self - Employed Work Force} \\ \text{Income Tax from Unemployed Work Force} \end{array} \right.$$

iv) $$\text{Total Welfare Expenditure} = \left\{ \begin{array}{l} \text{Unemployment Compensation} \\ \text{Housing Assistance} \\ \text{Food and Nutrition Assistance} \end{array} \right.$$

Table 36 - Trade off between Contributions and Receivables

It is worth mentioning that employed members of the workforce also receive benefits from the government in the form of food stamps and in some cases housing benefit. This factor is also included in government expenditure calculations. The net expenditures and receivables were analysed for both 2010 and 2011, yielding the results which are shown in the table below. The blue area represents money received by the government from taxes, whereas the red area comprises of government outlays. Both of these areas are the numerical results of the equations shown in Table 35, the final outcome of which is shown in the green boxes.

	2010	2011
Income Tax from Employed Work Force	$1,175,989,528,000	$1,346,182,227,000
Income Tax from Self - Employed and Unemployed Workforce	$824,188,337,000	$767,504,822,000
=> Total Receipts from Income Tax	$2,000,177,865,000	$2,113,687,049,000
Total Number of Employed Citizens in Work Force	139,092,000	139,450,000
Average Tax Payed By Employed Workers	$14,380.25	$15,157.31
Unemployment Compensation	$160,145,000,000	$120,556,000,000
Housing Assistance	$58,561,000,000	$55,440,000,000
Food and Nutrition Assistance	$95,110,000,000	$103,199,000,000
Total Welfare Expenditure	$313,816,000,000	$279,195,000,000
Total Number of Unemployed Citizens in Workforce	14,593,000	13,908,000
Average Welfare Received By Workforce	$21,504.56	$20,074.42
Difference Between Expenditure and Contributions (per person)	-$7,124.31	-$4,917.11

* Note - It is not specified how much financial assistance is split between employed & unemployed citizens. For example, both employed & unemployed people receive food stamps. As a result, the ‘average welfare received by workforce’ value may higher than it should be. However, the majority of financial support is given solely to unemployed people & should therefore not impact the outcome or its implications. Other government outlays, such as pension funds, are not considered in this analysis, only the workforce is considered.

Table 37 - Difference Between Expenditure and Contributions Receivables

Providing the validity of this argument, the government on average had to pay \$5000 - \$7000 extra to every unemployed individual in relation to what it received from tax paying workers. Whilst this number is not particularly high, a 6-8% unemployment in America represents a significant outlay in welfare, which shows the importance improving the number of employed citizens. The author will make a further forecast that **unemployment levels will remain stubbornly high for the next 1-2 years. The longer this number remains high, the higher the probability of a severe financial crisis in the next 2 years.**

Chapter 5 - Economic Implications of Rising Populations

5.1 Introduction

As a supplement to the main theme of this paper, it is worth exploring a particular facet of econometric analysis which has a profound effect upon the economy, but which is hugely overlooked. Indeed, there is available research in the field of "demographic economics" and "population economics", but these studies refer to the social impacts of rising populations, rather than the economic ones.

This section is therefore dedicated to the economic implications of rising populations. This independent variable will be isolated and correlated with the severity of a financial crisis. It is the authors prediction that **as population levels rise, so do the severity of financial and welfare crises**.

The role of scarcity, stated as the fundamental principle of modern economics, will serve as the basis for this analysis. This simple explanation explains that humans have unlimited wants that can never be fulfilled, which we attempt to satisfy with the worlds finite supply of resources. The pricing of goods and services therefore is dependent upon our relative demand for them and the amount of resources required for each unit of that good. Likewise, the existence of scarcity forces people to make optimal consumption choices and also acts as a method to explain the pricing of goods and services.

When applying this to the American economy, we look at this principle in a much larger scale. The wants and desires of America as a nation serve its own perpetual growth and wellbeing. However, America is not a country which is self sustainable, and in fact the preservation and continuation of the United States is tied to the fulfilment of its appetites in the form of resources from many countries. As America is classified as an industrialised country, this also shows that it has been using or has exhausted a large proportion of its own raw materials and requires more from elsewhere, normally from Lesser economically developed countries (LEDC's) through trade and other means. The main obvious conflict arises when America's economy, and therefore its demand, still grows alongside increased scarcity of raw materials. In fact, this paper has already demonstrated the price increases in oil and other raw materials which simply cannot be sustained. There is a growing drive for some countries to become more self sufficient, shown by policies of conservation and energy preservation in Norway and Sweden. However America is so addicted to consumption of oil, as well as having a growing demand for many scarce resources, that we see an increasing strain on its economy.

America consumes roughly 18.7 million barrels of oil a day, of which between 9-12 million barrels are imported (48%-64%).[157] Contrary to popular belief, America is not entirely dependent on the middle-east for oil, as it imports the majority from Canada and Mexico. However, there are several sources of oil which are from countries which are not on the best political terms with America, notably Venezuela (944,000 barrels a day), Nigeria (494,500 barrels a day), Iraq (433.000 barrels a day).[158] The bottom line is that unless America develops its renewable energy, or become significantly more energy self sufficient (attempts are being made by the Obama administration in this regard), a growing population represents a higher demand for energy and raw materials. The implications on economic factors should not be underestimated: raw material prices, unemployment levels, growth and stock prices all hinge on population levels and the development of green technology. This is explained in the next sections.

5.2 Growing Population Implications

We have seen above that with our current levels of consumption, the world is having trouble providing for our unlimited wants. We now take the independent variable of population growth into consideration and the effect on the supply and demand for resources. Population levels are rarely talked about as economic drivers, in particular because having children falls under a basic human right.

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157 US News - Energy - Increase in U.S. OIl Production Won't Lower Gas Prices - http://www.usnews.com/opinion/blogs/on-energy/2012/10/24/increase-in-us-oil-production-wont-lower-gas-prices

158 U.S. Energy Information Administration - http://www.eia.gov/dnav/pet/pet_move_impcus_a2_nus_ep00_im0_mbbl_m.htm

Nevertheless, as populations rise, they will also rise at a faster rate. Indeed, the table below shows the growth of the population over the last 50 years and makes a projection of the population in 2050.

Humans are now living longer and still having families of 2 or more children (world average), which is more than a simple replacement value. In essence, it is a variable which sooner or later will become very important - the population cannot endlessly rise on our planet and hope for increasing standards of living. When looking at America, its population has risen three-fold over the last century, which is displayed below.

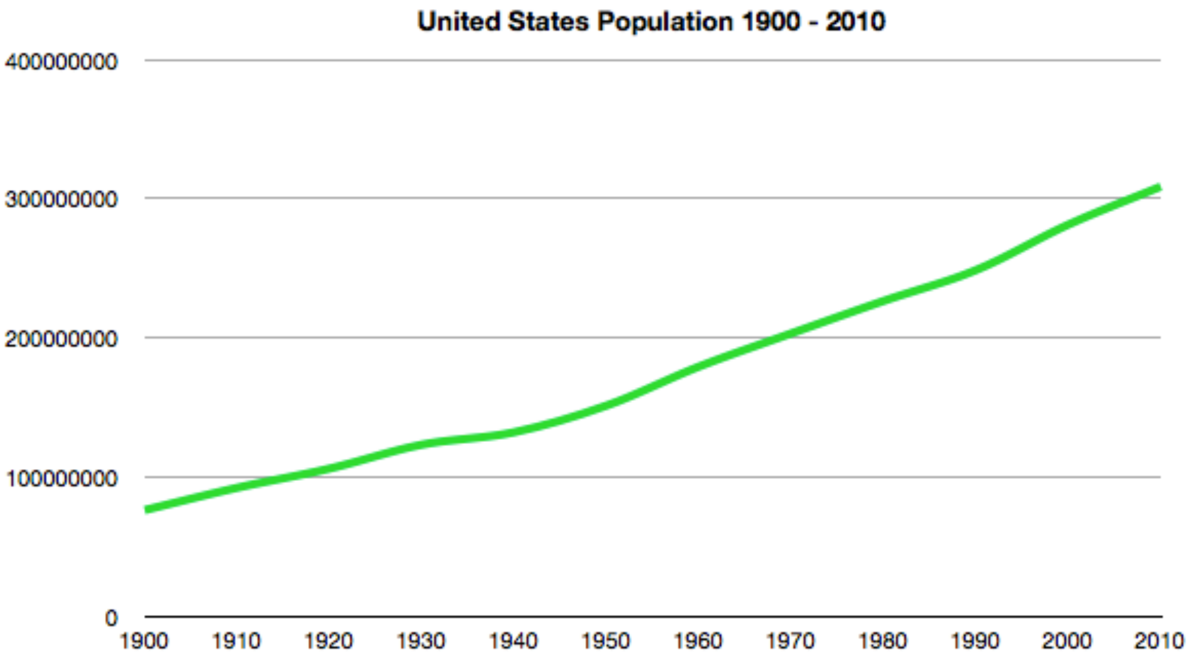

Table 38 - United States Population 1900 - 2010 - Source: National Centre for Health Statistics

This chapter deals with the question: "Does an increasing population change the demand and supply for goods and services in the economy?" The best way to answer this is to analyse these two sides separately and then consider their joint implications.

In the analysis of the demand side, it is easy to overlook the number of people in the population and declare that the level of demand is always infinite. However, the faster a population grows, the higher the rate that our overall demand rises. This naturally puts an added strain on our finite resources. As each person needs to cover the minimum of their standard of living, increased populations result in an increased minimum requirement for basic resources such as food, water and shelter. For the sake of simplicity, the remainder of this segment will look at this minimum level rather than the general demand for all goods, which would be harder to quantify.

Demand and Supply Breakdown

i)	$\frac{\text{Finite Supply}}{\text{Infinite Demand}}$	=>	Distribution of Goods & Services Based on Prices
ii)	Infinite Demand	=>	Demand per Person * No. of People
		=>	As Population Rises, Rate of Demand Increases
iii)	Finite Supply	=>	Supply of Natural Resources + Supply of Labour
		=>	As Population Rises, Supply of Labour Increases (For as long as full employment level is not reached)

Table 39 - The Scarcity Problem - Breakdown

The supply side of this concept would indicate that the supply would remain finite with larger populations. However, it is worth mentioning that human capital is also a "finite resource", and there exists the argument that a higher population would result in the ability to produce more goods and services, in particular when looking at the minimum requirements to sustain life. Therefore, we can assume that supply will also increase, but we cannot see the extent of this increase.

If we are already at full employment in an economy, an increase in population would have no supply side effect, however with any level below full employment, an increase in population could help raise productivity (and a rise in the supply side of the equation). Of course, technical and geographical employment are negated, as only the bare minimum requirements for life are required, in which we assume no exceptional skill set is a prerequisite. The real difficulty lies in the interrelationship between the increase in both demand and supply sides (i.e. with higher populations, does demand increase faster than supply, or, better put, does every extra person contribute more resources than he/she consumes?).

Nevertheless, it is clear to see that we need to consider the first order conditions of the role of scarcity when discussing the implications of a rising population. Furthermore, we can hypothesise the added strain of a growing population upon a country by looking closer at equation i) on the page above. We recall that that demand in this sense is restricted to that of necessity goods which are needed to survive. Therefore the cost of such goods could theoretically be calculated using the consumer price index (CPI), which also includes the affect of inflation. A prudent suggestion would be to use the total value of a basket of necessity goods.

The supply side is significantly easier to quantify, as the output of a country is measured by its GDP. This is also important as both the demand and supply side can be quantified using currency (e.g. Dollars) We then look at the interrelationship between the demand and supply side as follows:

$$\text{iv)} \quad \frac{\text{Finite Supply}}{\text{Total Demand for Necessities}} \Rightarrow \frac{\text{Gross Domestic Product}}{\text{Price of Basket of Goods for One Person} \; * \; \text{Number of People in Population}} \Rightarrow \text{Population Strain on Resources}$$

From this equation, we can clearly see the ‘strain’ on a country due to population changes. The next step in this line of thought would be to quantify this data between two time periods in the same country. If the end result is lower than previously, then resources are spread more thinly in the population. The implication of this logic is that we can see whether a country is providing on average more resources for each member of its population or less. Naturally, a higher value will represent a better quality of life and reduction in poverty (providing it simply doesn’t increase the wealth inequality in the country). In addition, it will become very clear whether a country is heading towards prosperity or ruin by showing the long run change in this figure. A ‘welfare crisis’, as opposed to a ‘financial crisis’, could be now quantifiable.

5.3 Effects of Population Growth

The population of a country has a much larger effect on all economic indicators than it is given credit for. Indeed, population levels can be correlated with unemployment levels, inflation rates, money supply levels, prices of goods and services etc. For example, if a country with a population of 100 million grows by 1% a year and the money supply stays the same, we should expect the value of each unit of currency to also increase by 1% (to maintain an equilibrium), as there is less money to go around for each individual. The outcome of this is shown through a currency appreciation and a deflation in the price of goods and services. **As a result, a growing population should have a deflationary impact and cause an appreciation of a currency unless the money supply grows by the same amount as the population.**

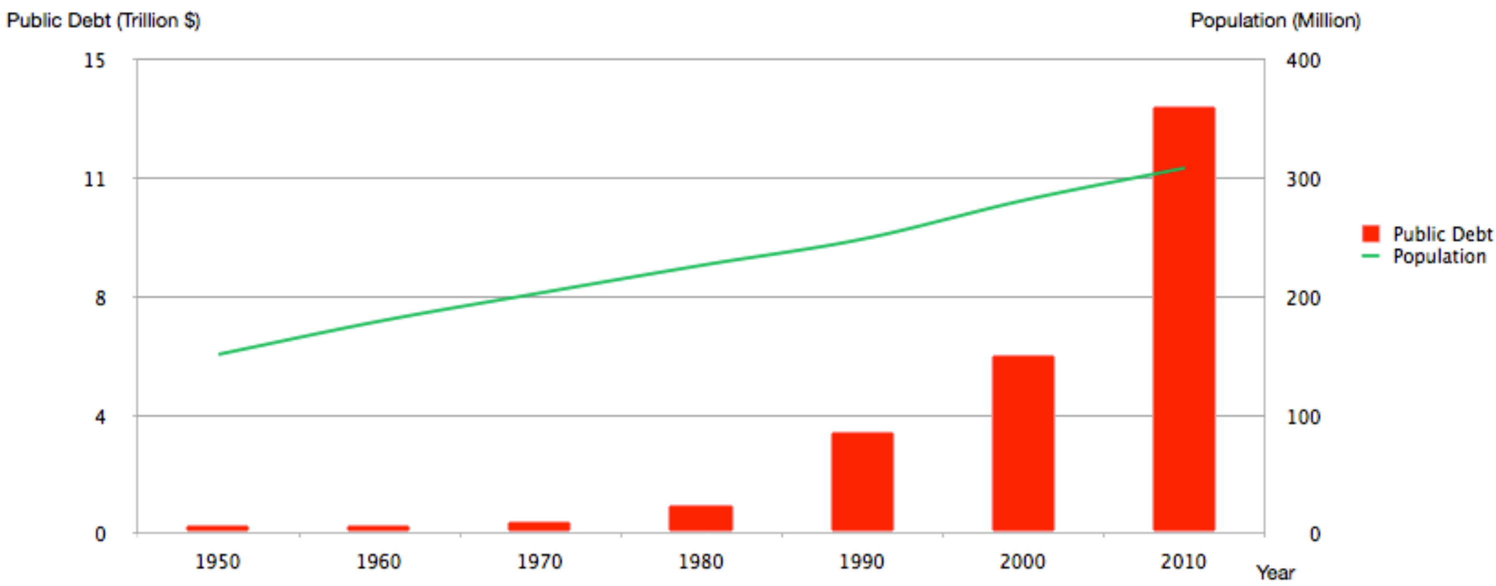

Table 40 - Interrelationship between Population Growth and Public Debt

In reality, we see a trend of **inflation** within an economy, despite population growth. This seems to suggest that increases in the money supply should be rising at higher rates than population growth. As we can see below, between 1950 and 1980, this was not happening. Since the 1980's, the money supply has increased dramatically, although the rate of population growth has stayed relatively steady. What causes this extra rise in the money supply? It is the capital required to purchase raw materials and other imports (which add significant pressure on the current account) and, most importantly, the funding 2 very expensive and long wars.

The basis of this idea remains the same:

i) The more money in circulation (which is created by the Federal Reserve in America), the higher the level of public debt.

ii) The larger the population, the greater the amount of resources required. These resources are either bought and paid for internally or imported from abroad, both of which point to an inevitable increase in the money supply.

iii) As a result, population growth will cause increases to public debt.

Similarly, a country should pose the question whether it can continuously create the jobs necessary for a growing work force such that prosperity is maximised. High unemployment rates are of course undesirable for every country, however the government may be attempting to create as many jobs as possible to simply keep its citizens content - which is an increasingly difficult endeavour as population rates increase.

Referring back to subtopic 4.5, it has been estimated that the government is losing a significant proportion of its income in the form of welfare expenditure. If once again a growing population is assumed, this burden on public funds will only increase. When a greater proportion of public funds is diverted to welfare expenditure, less is available for important sectors such as education, science, infrastructure and health care, thus decreasing the welfare of the entire country. The worst case scenario is that this burden is unaffordable by the government.

Population growth is a topic which is likely to receive growing attention in the next few years. Do we have enough jobs for everyone in the world? Is there enough space? Is there enough food? Will financial crises become more frequent? Some reports today state that we have already exceeded the Earth's "limits of sustainability"[159]. The effects at the moment are speculative but rather pessimistic.

In terms of job availability, we can already see that countries such as Spain have extreme youth unemployment levels. Likewise, we see that there is an increased strain on governments and resources alike. By extreme contrast, if there was only one village on the entire planet with a population of a few hundred, none of these problems would exist; There would be

[159] BBC - Earth population 'exceeds limits' - http://news.bbc.co.uk/2/hi/science/nature/7974995.stm

plenty of room for expansion. This is no longer the case - hence factors such as population rates must be considered.

A further point for consideration is the effect of growing populations on the boom and bust cycle. With more people, it is logical to assume that both crises and booms will be both prolonged and exacerbated - such is the nature when more people are either becoming better off or losing money together. The increased instability of our markets therefore might not just be due to globalisation and market interaction, it may be because there are more people participating in the markets themselves.

To summarise, the U.S has experienced some inflation, though not as much as expected when we look at the increases in the money supply. The population is growing and public debt is at record highs. America also has relatively high levels of unemployment and wages are not rising by any noticeable amount. This is the indication of a very unhealthy economy. Citizens are likely to get relatively poorer and able to pay for less with their quasi fixed salaries, whilst the government cuts public services, social security and welfare to cover its excessive debts.

Chapter 6 - Conclusions and Evaluation

The purpose of this paper was to analyse particular variables which could potentially cause a future crisis. Furthermore, the aim is to look at the current economic climate and identify the possible weaknesses in the economy today where a crisis could occur. To gain some much needed perspective on this topic, five previous crises were analysed. The specific economic climate prior to these crises was used and compare with the one today. From this, several factors were proven to have significant influence on the formation of bubbles and future economic crises. A mathematical formula was then developed to provide the framework for future research and to demonstrate the interrelationship between variables.

The following chapter considered the opinions of past and current economic experts, using their ideas to attempt to explain the current and future economic situation. Finally, a number of additional areas were brought up and considered, some highlighting the flaws inherent in the economy today, whilst others evaluating government intervention as a whole. This paper concludes by considering one complementing factor, population growth, and its role in the economy. This variable was chosen as prior research into this area was insufficient and its importance in the world is growing. Theoretical ideas were developed to explain how population growth has a (generally) negative impact upon developing countries with regard to unemployment, welfare expenditures and public debt. Moreover, this paper also suggests a much closer link between population growth and government intervention in the market today, notably with regard to monetary and fiscal policy. This paper has suggested several avenues for further research into this interesting and dynamic area.

With regard to upcoming financial crisis, this paper concludes that the United States economy is in a unique situation which would be vulnerable to a financial crisis. The extreme levels of public debt, together with the lack of coherence within government, has already resulted in forced measures to curb government spending. Stock prices are at record high levels and regulation remains lax in areas such as the derivatives markets. Furthermore, pension funds are severely underfunded and require re-capitalisation. Therefore, the prognosis of this paper is that the United States will experience a large economic contraction within the next 2 years

Returning to the 5 major factors which cause a crises, this paper can conclude the following:

a) Boom/Bust Cycles - The crisis of 2008 represented the worst economic environment since 1929. The fear of a double dip recession seems to have been abated by government intervention so far, however the strong position of the stock market, together with the weaknesses in growth and employment, remain worrying. As a result, it is very difficult to determine how long it will take before the next ‘cyclical recession’, we can only conclude that the current boom/bust cycle is experiencing very high levels of intervention.

b) Interest Rate Levels - If interest rates rise, even (as speculated in this paper) by a few percent, a recession could possibly be the result. Growth is fragile at best in the economy at present and adding deflationary pressure by raising the interest rate would have undesired effects in America. Luckily, this does not seems to be the case. Interest rates have remained at record low levels of 0.25% for the last 8 quarters and will continue to do so until confidence is restored. Only then will then begin to rise again. As a result, interest rate changes will not contribute to the next crisis unless they are increased significantly in the next few years.

c) Money Supply - This variable could potentially cause the next crisis, or rather the effects of the huge increase in the money supply post 2008. This large increase has provided the stability that stock markets desired and liquidity to banks. However, the government is now feeling the pressure of overextending its balance sheet through the accumulation of excessive levels of debt from the FED and toxic assts from the private sector. The consequence of this seems to be the erosion of the value of the dollar, although this has only been seen by its downgrading rather than by high inflation. Growth in America will never return to desired levels unless it regiments its debt level and returns it to acceptable levels. If it fails to do this, debt levels will reduce investor confidence, devalue the currency and make it more difficult for America to acquire new capital. Investor trends are very important in keeping America afloat - if the opinion suddenly converges that America is too risky an investment, it will experience a significant crash.

Fiscal policy in general needs significant improvement when budget reports are analysed. Growth in industries, rather than a focus on short term job creation should be a priority. There is still a justified fear that America is still spending beyond its means and that a tipping point will be reached very soon. This requires a bi-partisan agreement which worryingly looks very unlikely.

d) Regulation - This variable is the key to all the doors when it comes to economic stability. The deregulation of derivates markets is simply farcical - a clear demonstration was the ulterior motive bankers and lack of accountability. Whilst it is not likely in the short term that bankers will attempt to distort the market to the same extent as they did in the years prior to 2008, a lack of regulation will once again cause the build up of run-away bubbles in certain markets. If regulation is left at such low levels, a crisis will occur following the formation of a 'subprime market - like' bubble.

e) Other industries - We have seen that pension funds are undervalued. This is a ticking time bomb that requires serious government intervention. The welfare system as a whole is of particular concern too. It is the authors belief that if reform is not forthcoming in the next 2 years, a number of funds will default and cause a severe crisis. If the American economy deflates its currency and the real value of these funds, or achieves positive reform in these sectors, the severity of a crisis may be avoided.

f) The withdrawal of TARP funds and Quantitative Easing - The promise of the FED that extra liquidity provided was only 'short term' is particularly worrying. Whilst it is true that markets are unable to self correct and need the removal of government intervention, this needs to be done in a delicate manner. **As government support in markets is withdrawn, it should be replaced by consumer confidence and sound growth forecasts, which would benefit from the emergence of a new labour intensive market.** Any deviation from this will cause a crisis.

g) Population growth is having an undocumented and unforeseen impact on the economic climate today. This area requires more research to determine the extent of its effects, however it is the authors opinion that growing populations inherently cause added instability in markets, thus increasing the influence of many economic variables. A population of 100 million with a 5% unemployment rate has significantly less problems than one of 250 million. Figures such as nominal unemployment need much greater thought than just real values. In real life terms, the world's current and future population is displayed below:

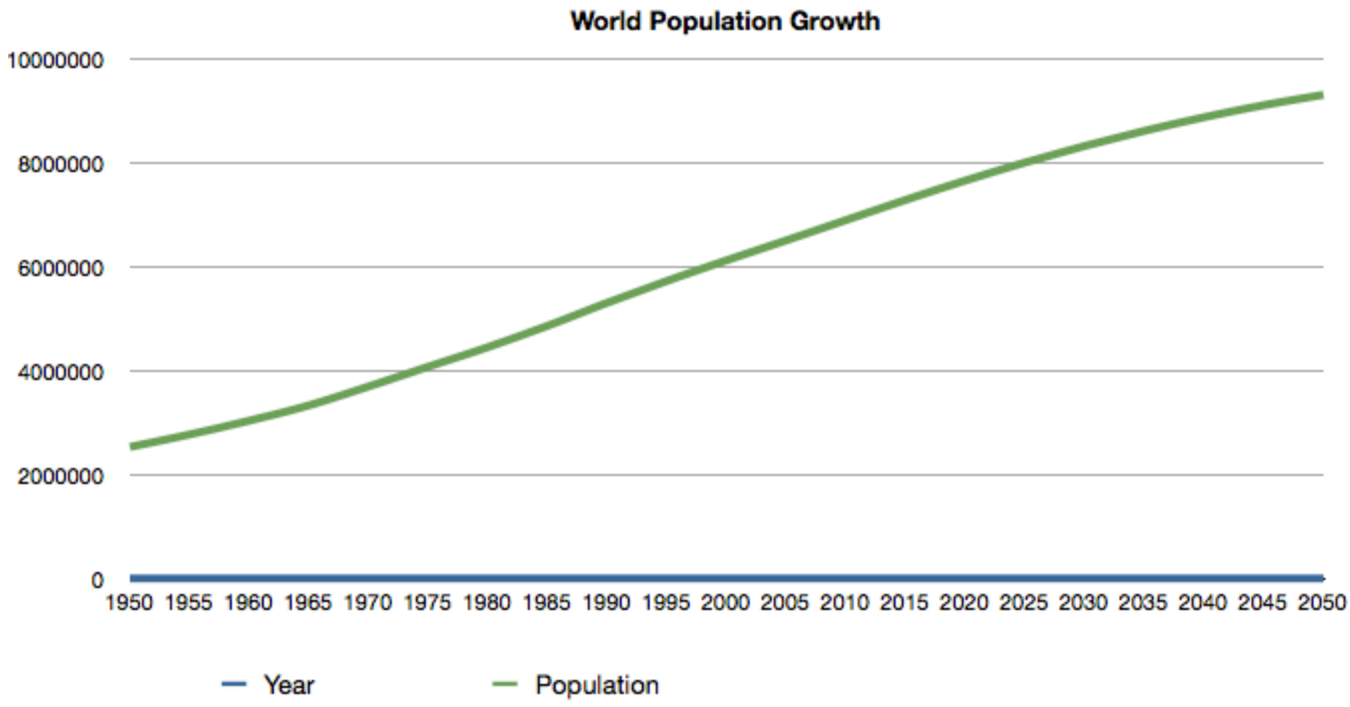

Table 41 World Population Growth - Source - United Nations Department of Economic and Social Affairs - Population

Considering all of the variables covered in this paper, the likelihood of a recession within the next 1-2 years in America is relatively high, provided economic trends prevail. No significant progress has been made in terms of hindering the build up of artificial bubbles, something which is of great concern. Once an artificial bubble has formed, whether it be in commodities such as oil, housing prices, sub-prime mortgages, or even in currencies, it is inevitable that investors (upon the realisation of the overvalued nature of their investment) will withdraw their funds and deflate the bubble by moving their investments away from that particular sector and into safer investments. With this comes a crash - something we have seen with every single financial crisis in the past.

In order to avoid the real threat of a strong economic crises in the future, America desperately needs to change its policy on debt and regulation. There is still time to correct the most alarming problems, but there is very little room left for economic mistakes. The one thing that can be taken from this paper is that the system of perpetual debt through the creation of money is difficult to rationalise when high debt levels start impacting growth. Something really needs to change to accommodate our new economic environment, for which new policies are necessary.

On a more general note, we should be aware of our continued inability to control markets in a beneficial and sustainable way. We simply are not economically or environmentally mature enough to bear the heavy responsibility for our financial system and understand all the consequences of our actions. This is in part due to the fact that government officials always adopt short term interests - the length of their tenure is self defeating. In addition, the next goal of a more forward thinking society should be to question not when a crisis should occur, but if one should occur at all, and if there is a way we can permanently avert a crisis.

Furthermore, America must also improve the health of its workforce. At present, the costs of health care in America are exploding and the workforce feels tired, unmotivated and neglected. Restoring the health of the workforce and the general population would be a corrective method and free up some of the budget to other important sectors such as pension funds, education and social security.

Lastly, America and western european countries need to stop the erosion of the wealth of the middle class. This is a very important topic today, especially when referring to the allocation of government tax increases. A healthy middle class represents a healthy economy - the concentration of 40% of the wealth to just 1% of the population creates an imbalance in the market which the author believes needs correcting.

This paper will conclude with 2 important quotes. The first was written upon the dissolution for the first Federal Exchange in America. The second was written by United States President Woodrow Wilson 1 year before the 1913 Federal Reserve Act was passed in congress.

"If the American people ever allow private banks to control issue of their currency, first by inflation, then by deflation, the banks and the corporations will grow up around them, will deprive the people of all property until their children wake up homeless on the continent their fathers conquered. The issuing power should be taken from the banks and restored to the people, to whom it properly belongs." - Thomas Jefferson in the debate over The Re-charter of the Bank Bill (1809).

"Our great industrial nation is controlled by its system of credit. Our system of credit is privately concentrated. The growth of the nation, therefore, and all our activities are in the

hands of a few men who, even if their action be honest and intended for the public interest, are necessarily concentrated upon the great undertakings in which their own money is involved and who necessarily, by very reason of their own limitations, chill and check and destroy genuine economic freedom." - Excerpt from 1912 campaign speech - Woodrow Wilson

Source Material

Books, Articles and Documentaries

A.B. Atkinson - On the Measure of Inequality - Faculty of Economics and Politics, University of Cambridge - 17/02/1969

Stephen E. Ambrose - Nixon (Ruin and Recovery 1973 - 1990)

Olivier Blanchard, Gerhard Illing - Makrooekonomie

Gordon Brown - House of Commons Footage, 21st March 2007 - An end to Boom and Bust

Dana Cimilluca - Wall Street Journal - 06/03/2012 - Clock Ticks on European Buyout Debt - Wall Street Journal

Alan Greenspan - The Age of Turbulence 2007

Charles H Fergusen - Documentary - Inside Job - 2010

Peter Ferrara - America's Ever Expanding Welfare Empire - Forbes Online

Milton Friedman - Markets with Asymmetric Information - October 10, 2001

John Kenneth Galbraith - The Great Crash 1929

Daniele Ganser - Peak Oil and the Arab Awakening (Interview) - March 2012

Friedrich A. Hayek - Prices and Production - September 1931

Liaquat Ahamed - Lords of Finance - 1929, The Great Depression and the Bankers Who Broke the World

Jensen and Meckling - Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure 1976

Tony Judt - Ill Fares the Land

Max Keiser - Soaring Oil Price and Weakening US Economy - March 2012

John Maynard Keynes - The General Theory of Employment, Interest and Money

Paul Krugman - National Conference Speech 2008

Sir Andrew Large - Financial Stability Oversight, Past and Present pg. 25 - 22/01/2004

Roger Lowenstein - Origins of the Crash - The Great Bubble and its Undoing

Susannah McAleese: Tunnel Vision: The Privatisation of the London Underground - Student Economic Review - pp. 55-56

Lawrence E. Mitchell, Arthur E. Vilmarth - The Panic of 2008: Causes, Consequences and Implications for Reform

Reza Moghadam - Reserve Accumulation and International Monetary Stability - Supplementary Information - April 13, 2010 - International Monetary Fund

Robert Mundell - A Reconsideration of the Twentieth Century

Robert Mundell - The Heritage Foundation: The Dollar, The Euro, and the International Money Order: What is the U.S. to Do?

David Nakamura - Obama asks Congress for debt limit hike - The Washington Post

Cynthia O'Murchu, Helen Warrell, Steve Bernard, Norma Cohen - The Pensions Crisis - The Financial Times

Henry Paulson - On the Brink: Inside the Race to Stop the Collapse of the Global Financial System:

Pearson Education - First Mover Advantage - www.pearsoned.co.uk/Bookshop/article.asp?item=312

Ser-Huang Poon - A Practical Guide to Forecasting Financial Market Volatility

Federal Reserve Working Paper - Changes in the Number and Size of Banks in the United States 1834 - 1931 - http://fraser.stlouisfed.org/docs/historical/federal%20reserve%20history/frcom_br_gp_ch_banking/changes_in_banks_1834_1931.pdf

C. M. Reinhard and K. Rogoff - Growth in a time of debt - American Economic Review, May 2010

Sean Rushton - Robert Mundell on the Financial Crisis - National Review Website

E.F.Schumacher - Multilateral Clearing

Adam Smith - An Inquiry into the Nature and Causes of The Wealth of Nations

Joseph Stiglitz - The Ideological Crisis of Western Capitalism - 2011 Publication

Joseph Stiglitz - The Library of Economics and Liberty - http://www.econlib.org/library/Enc/Information.html

Erich Streissler - Forecasting Present Day Long Term Macroeconomic Prospects

Erich Streissler - Financial Crises and Sovereign Bankruptcies

Ellis W Tallman, Jon R. Moen - Lessons from the Panic of 1907

Ellis W Tallman, Jon R. Moen - The Bank Panic of 1907: The Role of the Trust Companies - The Journal of Economic History

Abigail Tucker - The Financial Panic of 1907: Running from History - Smithsonian.com

Lars Tvede - Business Cycles: History, theory and Investment Reality

Fiona Venn - The Oil Crisis

Klaus Werner-Lobo, Hans Weiss - Das Neue Schwarzbuch Markenfirmen - Die

Machenschaften der Weltkonzerne

Zach Weissmueller - Stockton, California Went Bankrupt. Is your City Next? - Reason t.v. Online

Wiley Investment Classics - Once in Golconda: True Drama of Wall Street, 1920-38:

Mark T. Williams - Uncontrolled Risk - The Lessons of Lehman Brothers and How Systematic Risk Can Still Bring Down the World Financial System

John. H. Wood - A History of Macroeconomic Policy in the United States

Other Websites and Government Institutions

2010 Trade Policy Agenda in America: Office of the United States Trade Representative

BBC Finance

Bernie Sanders Website

Bloomberg Press - Collateral damage: The Marketing of Consumer Debt to America

Bloomberg Businessweek

Business Insider Online

Center for Medicare and Medicaid Services - www.cms.gov

Chris Cook - Spikes and Speculation in the Oil Market

CIA Website

City of Stockton Government Website

CNET Online News

CNN Money - http://money.cnn.com/2002/05/01/pf/banking/subprime/

Crisis Watch Network - Dot-Com Bubble Documentary

Current and Historical Oil Prices - www.oil-price.net

Daily Mail Newspaper

Energy Information Administration - Official Energy Statistics from the United States Government

Energy Statistics - Oil Consumption - Nation Master Website

European Central Bank - Exchange Rate Information - www.ecb.int

European Commission - Law on Free Movement of Goods and Services http://ec.europa.eu/

Financial Crises Definitions - Investopedia.com

Federal Reserve Website - www.federalreserve.gov

Financial Stability Plan – United States Treasury Publication

Financial Times - The Pension Crisis - Norman Cohen, Matthew Vincent

Fiscal Year 2013 Historical Tables - Budget of the U.S Government - Office of Management and Budget

Forbes Magazine - Money Section

G20 Seoul Summit Declaration 2010 - http://www.g20.org/Documents2010/11/seoulsummit_declaration.pdf

Gold Price Information - www.onlygold.com

Governmental Affairs Subcommittee - Investigation into the Financial Crisis - Online Videos

Huffington Post Website

International Monetary Fund - The Structure and Operation of the World Gold Market:

International Monetary Fund - Greece: Staff report on request for stand-by arrangement

Investopedia Definitions - www.investopedia.com

Mid Session Review - Budget of the U.S Government - Fiscal Year 2012

Modern Money Mechanics - A Workbook on Bank Reserves and Deposit Expansion - Federal Reserve Bank of Chicago

National Health Expenditure Data - http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html?redirect=/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp

New York Times - News on Iceland

Presidents American Jobs Act Includes Big Construction Plans - For Construction Pros Website

Panic of 1907: JP Morgan Saves the Day http://www.u-s-history.com/pages/h952.html -

ProPublica Website - The Bailout: By the Actual Numbers - www.propublica.org/article/the-bailout-by-the-actual-numbers

Reuters Magazine

Senate Government Affairs Subcommittee - Live on CSPAN News Network

St Louis Federal Exchange Website - http://research.stlouisfed.org

The Boston Globe

The Financial Crisis Inquiry Report - Financial Report of the National Commission on the Causes of the Financial and Economic Crisis in the United States

The Financial Express Website

The Nation Website - The Politics of Water in Bolivia

The White House Website - Our Dependence on Foreign Oil is Declining

United States Bureau of Labor Statistics - Unemployment Data

United States Census Bureau - U.S. Bureau of Economic Analysis - U.S International Trade in Goods and Services 2012

United States Centers for Medicare and Medicaid Services - National Health Expenditure Highlights

United States Energy Information Administration

United States Debt Levels - Treasury Direct Website

United States Energy Information Administration - 2012 Import Highlights

United States Health Care Costs - kaiserEDU website

United States Inflation Data - www.inflationdata.com

United States National Center For Health Statistics - Population Figures

United States Healthcare Website - Healthcare Law - www.healthcare.gov/law/full

United States Treasury Website TARP Tracker - http://www.treasury.gov/initiatives/financial-stability/about-tarp/Pages/default.aspx

Wall Street Journal Articles

Yahoo Finance

Attachments

DECEMBER 24, 1913–SIXTEEN PAGES. PRICE TWO CENTS

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"The purpose of the act is one

FOUR PENS USED BY PRESIDENT

WASHINGTON, Dec 23—President Wilson signed the Glass-Owen Currency bill at 6:01 o'clock tonight in the presence of members of his Cabinet, the Congressional Committee on Banking and Currency and Democratic leaders in Congress generally.

With a few strokes of the pen, the President converted into law the

How the Bush tax cuts were brought in

							2013 scenarios	
Tax year	**1993-2000**	**2001**	**2002**	**2003-2008**	**2009-2012**	**2012 tax brackets**	***Tax cuts expire***	***Tax cuts expire for top incomes***
President	 Bill Clinton	 George W Bush			 Barack Obama			
Bottom rate	15%	10%	10%	10%	10%	Up to $8,700	*15%*	*10%*
		15%	15%	15%	15%	$8,700-$35,350		*15%*
	28%	27.5%	27%	25%	25%	$35,350-$85,650	*28%*	*25%*
	31%	30.5%	30%	28%	28%	$85,650-$178,650	*31%*	*28%*
	36%	35.5%	35%	33%	33%	$178,650-$388,350	*36%*	*33% or 36%**
Top rate	39.6%	39.1%	38.6%	35%	35%	Over $388,350	*39.6%*	*39.6%*

*President Obama has previously called for the tax cut to expire for those earning over $250,000

SOURCE: TAX FOUNDATION, IRS
TAX BRACKETS SHOWN FOR UNMARRIED INDIVIDUALS

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