

Academic Research | YES USE Project

# United States public debt

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## Prologue

What you are about to read is our first try at writing a paper which fulfills the criteria of an academic piece of work. It was quite a challenge to write this paper, as the process was very different from what we were familiar with. Although we might have struggled from time to time, we believe we have done everything that lies within our abilities in order to make this paper readable, enjoyable and understandable for the reader. We have spent hours consuming information, understanding theorems and consciously turn the resources available into written English. We hope you will acknowledge the time and effort we have put into this paper.

Naturally, we could not have been able to write this piece of academic work all by ourselves. At times, we have had some assistance. First of all, we would like to thank Mr. De Jong, teacher in economics at the Vechtstede College, as he inspired us to choose the subject of this paper. Secondly, we would like to thank Peter de Bruin and Mathew Cornelisse for helping us with finding essential information. Thirdly, we would like to thank Mr. Van Sas who warned us that academic research could be quite frustrating. He was right. Lastly, we would like to thank our tutor during the last two months, Mrs. Keijzer. She was always willing to help us out, without being too critical.

All in all, we must say we are quite satisfied with our paper. We are also very proud of the nearly flawless co-operation we have had over the last two months.

We hope you enjoy reading and studying our work.

Jawad Bejja & Koen Koolstra,  
Weesp  
February, 2012

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## 2. Introduction

### 2.1. Introduction to the problem<sup>1</sup>

While we currently find ourselves in a euro crisis with potential disastrous consequences for the global economy, another source of potential trouble may arise. The media have mainly been focusing on the European sovereign debt crisis over the last months. However, the situation in the United States may have been somewhat overshadowed. Nevertheless, from time to time, the growth of the U.S. (public) debt has indeed reached the news. Several media corporations reported during the summer of 2011 of Obama's plan to lift the debt ceiling of the United States of America to almost fifteen trillion dollar (\$15.000.000.000.000-). Following this news, one of the leading credit rating agencies Standard and Poor's announced its plans to downgrade "the long-term sovereign credit rating on the United States of America to 'AA+' from 'AAA' ." (Standard & Poor's, 2011)

However, it has not only been the media that have expressed their worries about the United States' debt. Also, amongst the United States' politicians there has been dissension about the policies regarding the U.S. debt. The Congressional Budget Office of the United States of America has estimated the total debt will grow to 100% of the GDP in the next decade. Consequently, the American congress appointed a super committee with the task to at least cut \$1,2 trillion of the U.S. debt. The committee, however, has been obstructed, thanks to the everlasting feud between the Democrats and Republicans. As a consequence, there will be no immediate action to stop the consecutive deficits of the United States. Thus, the debt will continue to grow in the coming decade. Unless policies change, the position of the United States in the global economy could be in serious jeopardy in the near future.

### 2.2. Definition of public debt<sup>2</sup>

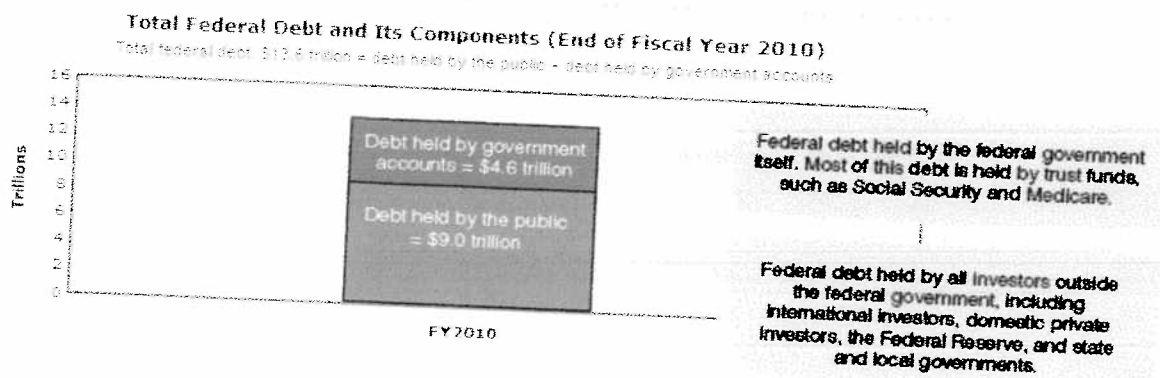
In the news, on the internet and in the journals there are a lot of different numbers and statistics to be found concerning the U.S. (public) debt. In order to avoid confusion about which numbers & statistics we will use, and which numbers & statistics we will not use, in this paragraph we will make a clear distinction between the federal debt and the public debt. Also, we will focus on some regular percentages and some jargon used when dealing with the U.S. debt.

The most important distinction to be made is the one between the United States' total federal debt, a.k.a. gross debt, and the United States' public debt. The total federal debt consists of two parts, namely:

1. The internal debt held by the United States' government accounts, like the Social Security system.
2. The public debt, this is defined by: everyone but the United States' government accounts (the Federal Reserve is therefore also regarded as the public)

<sup>1</sup> This paragraph is mainly based on: Barth, J. 2011 US Debt and Deficits: Time to Reverse the Trend, unless indicated otherwise.

<sup>2</sup> This paragraph is mainly based on the official document of the U.S. Government Accountability Office (<http://www.gao.gov/special.pubs/longterm/debt/debtbasics.html#largefeddebt>), unless indicated otherwise.



**Figure 2.1. Total Federal Debt and Its Components, U.S. Government Accountability Office, 2010**

### 1. Debt held by government accounts

The debt held by government accounts is a smaller number than the amount of money held by the public. In the Fiscal Year of 2010 the intergovernmental holdings, as they are often called, were approximately \$4,6 trillion. This debt is primarily held by trust funds. "Trust funds are accounting mechanisms used to link earmarked receipts with the expenditures of those receipts." (Department of Treasury, 2012) In other, more simple, words, trust funds can be set up to be guaranteed of a stable provided income in the future. One can loan money to another party and this amount of money will be recouped at a certain moment in time.

The Department of Treasury determines the trust funds of the United States. Medicare, for example is a trust fund. The intergovernmental debt has occurred because some parts of the American government have trust funds in other parts of the government. In this way, the government owes money to itself. Therefore, this debt is not very threatening as the government still has the same amount of money to its availability.

### 2. Debt held by the public

The publicly held debt is of much more significance, as it represents all the bonds owed by the U.S. government to other parties. These government bonds (see section 3.2) are owed to several institutions, countries and individual investors. To put it shortly, everyone but the United States government. Thus, this also includes the Federal Reserve (see section 4.3) and other domestic investors. The investors are only willing to buy those bonds, if they are able to recoup their investments. Additionally, investors want a percentage of interest. Therefore, the higher the amount of debt, the more interest a government has to pay.

An extensive overview of the ownership of the United States federal and public debt can be found in figure 1 & figure 2 in the appendix.

We intend to write this paper focusing on the public debt and its consequences, especially taking into account the international investors. The data we will use will be about the U.S. public debt, and not so much about the U.S. federal debt, unless indicated otherwise. We advise the reader to pay attention to this as, due to the unavailability of data, sometimes statistics about the federal debt have been used.

One statistic often used when writing about public debt is the public debt to GDP ratio. The percentage is calculated as follows:

$$\text{Public debt to GDP ratio} = (\text{Public debt} / \text{Gross Domestic Product}) * 100\%$$

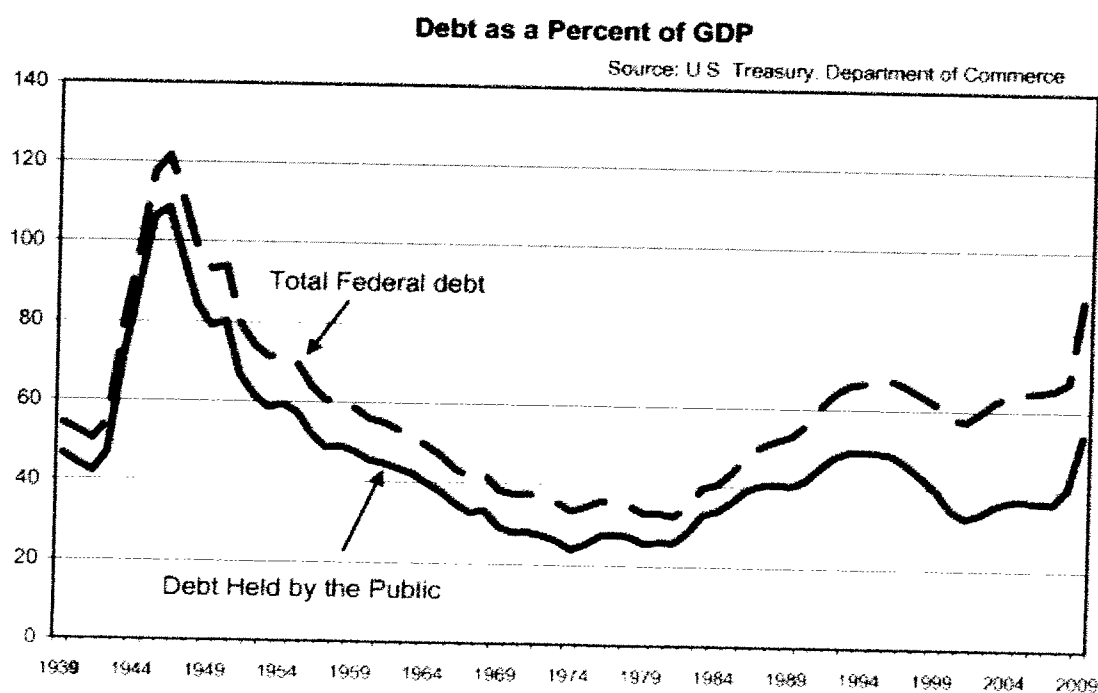
By calculating this percentage, one can more easily compare the public debt of one country to the public debt of another, as one uses relative numbers. More importantly, one can compare the historical debts with the current debt. In the same way, one can obtain the deficit to GDP ratio. This number might be useful to compare government policies over the years.

Furthermore, we want to introduce two terms which might be used at some point in this paper. When talking about the *maturity* of a debt, we mean the date when the debt has to be repaid. For example, if \$2.5 trillion of the U.S. public debt matures in 2010, the U.S. government has to repay \$2.5 trillion to their creditors in 2010. When talking about the *sustainability*, we mean "the ability of a country to meet its current and future obligations, without debt relief or repaying the debt with new debts (cumulative), while allowing an acceptable amount of economic growth." (United Nations Conference on Trade and Development, 1996)

### 2.3. The public debt in numbers and figures<sup>3</sup>

Almost a decade ago, the public debt of the United States was a reasonable 33% of its GDP. However, with the turn of the millennium, the spending pattern of the United States changed dramatically. Since 1999, there only have been consecutive deficits. In a relative short time (a few years), the modest public debt has almost doubled to 62% in 2010. {{13 Bohn, H. 2011}} This is an extraordinary fast increase, the only equivalent was the growth of the ratio during World War II.

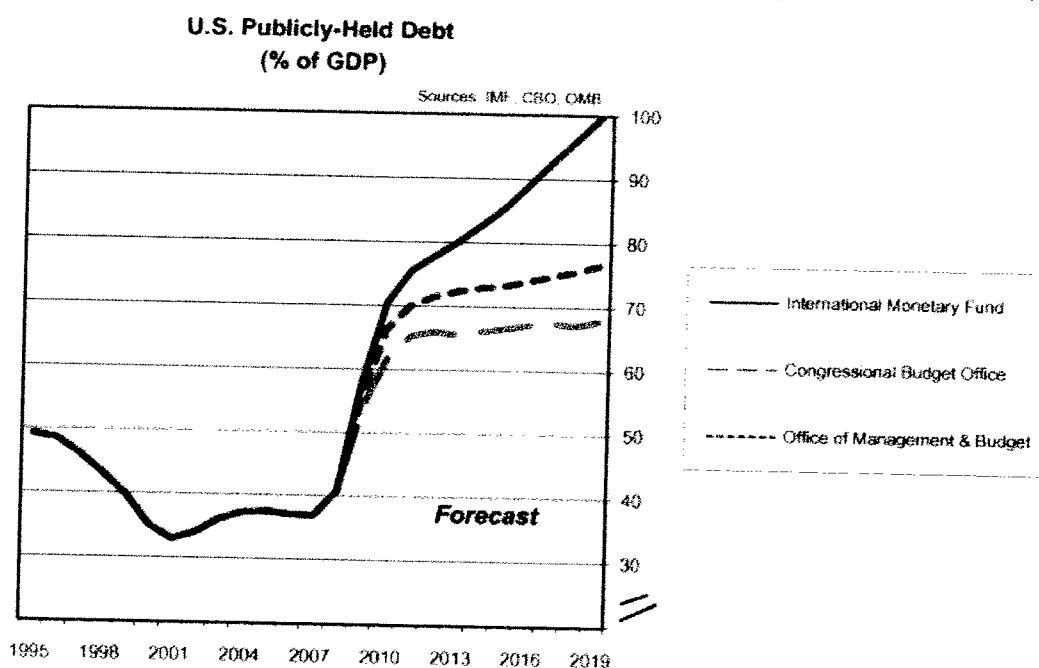
As the next graph shows, the slope of the public debt of the last years is the largest we have since World War II. To be specific, the deficit of 2009 was estimated to be 10% of the GDP. (8.9% in 2010)



**Figure 2.2.** Using inflation to erode the US public debt, Aizenman, Joshua, 2011

<sup>3</sup> This paragraph is mainly based on: Barth, J. 2011 US Debt and Deficits: Time to Reverse the Trend, unless indicated otherwise.

What will this mean for the future; will the current trend continue or will the slope flatten? Nobody knows the exact numbers of the future. However, predictions are being made. With the lack of a drastic change in policies, it is sure the debt will increase. The next graph shows the prediction for the coming decade. Note the slightly more optimistic views of the U.S. governmental institutions.



**Figure 2.3.** Using inflation to erode the US public debt, Aizenman, Joshua, 2011

## 2.4. Research questions

### Main question

*What are the effects of the growth of the U.S. public debt on the attitude of (foreign) investors towards the United States of America?*

The growth of the public debt of the United States will undoubtedly affect the global economy in several ways. We will mainly focus on the effects the growth has on investors in government bonds of the United States of America. These investors are the main financiers of the deficits of the USA. What will be their response with regards to the growing debt? Will they keep buying these government bonds?

### Sub questions

1. *What are the major causes of the growth of the U.S. public debt? (Chapter 4)*
2. *What are the consequences for the U.S. bond market? (Chapter 5)*

In our first sub question, we will dive into the causes of the U.S. public debt. Firstly, we will briefly discuss the American public debt throughout the last century, before we draw our attention to the more recent history of the U.S. public debt. We will analyze the deficits of the last decade in order to find an explanation for the sharp increase of the debt in the last years. We will look at both the income (tax) as well as at the expenditure of the government.

In our second sub question, we will focus on the consequences the growing public debt has on the U.S. bond market. What will happen to the interest rates of United States government bonds and what will happen to the trust of investors?

## **2.5. Purpose & Audience**

In this paper, we will mainly focus on writing about the growing U.S. public debt and the effects it has on the attitude of investors towards the United States of America . We will base ourselves on facts, and we will not try to introduce any normative economic statements. Besides, we will abstain from finding a solution for the problem of the growing public debt. We are not seeking to find a solution by any means, we are only focusing on exposing the effects, and possible dangers, of the U.S. public debt on the attitude of investors towards the United States of America.

Our audience will, to some extent, require decent knowledge about the system of national debts, deficits and government bonds as we will not explain this extensively. We assume our audience at least have an idea about what national debts and deficits are, and how they are financed. We will also extensively make use of graphs, as these might indicate the situation better than words and figures.



### 3. Theoretical Framework<sup>4</sup>

#### 3.1. Introduction

In this chapter, an overview will be given of the – for this paper - most important and relevant theory Dr. Frederic S. Mishkin collected, summarized and then published in the book *Economics of Money, Banking and Financial Markets*.

#### 3.2. Interest rates on government bonds

A government bond is a financial instrument to claim future assets of any type of government. In other words, the government is obliged to, somewhere in the future, pay back a certain amount of money to a bondholder. Issuing bonds can be very important, as it allows the government to cover its deficits.

Although there are numerous types of government bonds (short-term, long-term, municipal, corporate, etc.), they all share one major characteristic. Namely, the interest rates, which are nothing more than the cost of the use of capital. Interest rates are expressed in a percentage per year of the total sum of money borrowed. (e.g. 7% government bond)

Interest rates of government bonds are eagerly anticipated on within the economy. The Wall Street Journal, for example, daily publishes the rates of government bonds. Apparently, the interest rates affect some simple, everyday economic decisions, such as whether to invest or save.

The percentage on bonds are called the coupon rates. This percentage is fixed; it will not change until the moment it matures (e.g. 10 years). So if one buys a government bond for \$1000 with a coupon rate of 4%, it will logically follow one gets \$40 dollars a year as a compensation for making their money available.

Now, what happens when interest rates on the market change, which they do, within these 10 years? The interest can for example fall to 3,5%, which would mean \$35 per year on these bonds. As a consequence, people are willing to buy your bond rather than buying the bonds available on the market. Your bond will rise in value, the current bonds therefore will not be worth as much as your bond. Of course, it works vice versa when the interest rates on the market rise.

In short, there is an opposite relation between a bond's yield and the bond price. See figure 3.1.

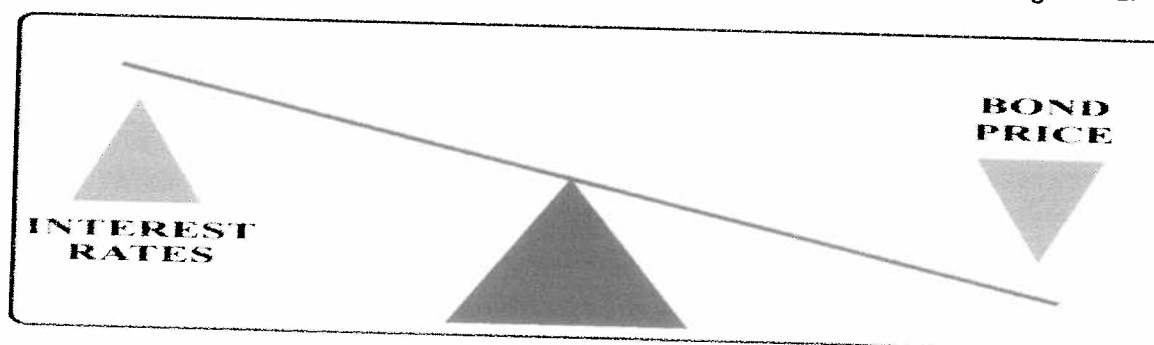


Figure 3.1. Opposite relation Interest Rates and Bond Price, based on Mishkin, 2002

<sup>4</sup> The theorems, definitions and figures used in this chapter are based on *Economics of Money, Banking and Financial Markets*; Frederic S. Mishkin (2001), unless indicated otherwise

Finally, it should be noted there is a difference between the nominal interest rate and the real interest rate. The real interest takes into account inflation, whereas the nominal interest rate does not. (real interest rate = nominal interest rate – inflation)

Hence, when a country faces high inflation (inflation > interest rate), one – as an investor in government bonds – might find oneself losing money in terms of goods and service one can buy, the real interest rate is negative in this case. In other words, there is a loss in purchasing power.

### 3.3. The Fisher Effect

Basically, there are three options when a government faces a budget deficit. The government can either increase its income by raising taxes or issue government bonds thus creating a public debt. In addition, the government can increase the money supply by letting the central bank purchasing the government bonds. This central bank does this by conducting an open market purchase, which leads to an increase of the money supply. This process is called monetizing the debt. According to Mishkin's book, monetizing the debt will lead to inflation, or in his words: "financing a persistent deficit by money creation will lead to a sustained inflation."

As explained in earlier sections, inflation has its effects on the interest rates of government bonds. In fact, expected inflation may already have influence on the nominal interest rates. If expected inflation is high, the demand of government bonds will fall since the expected return will be lower. The supply of government bonds, however, will rise as the real cost of borrowing money falls. The rise in supply accompanied by a decline in demand will result in higher interest rates. This is important observation is called the Fisher effect.

Accordingly, the Fisher effect is a very important phenomenon for governments. If a government intends to keep its interest rates on government bonds low, the inflation needs to be limited. Imagine for example a real interest rate of 4%. If the expected inflation rises from 2% to 3%, it follows the nominal interest has to rise from 6% to 7% in order to keep the real interest rate at the same level. Therefore, the nominal interest is directly influenced by the expected inflation.

### 3.4. Theory of asset demand

According to the theory of asset demand, there are four factors which determine whether to buy an asset (in this case, government bonds).

Firstly, the decision is based on wealth. If an individual's wealth increases (in times of expansion), ceteris paribus, it follows one would be tempted more to invest, thus demanding assets.

Secondly, an investor looks at the expected return of the bond, compared to alternative assets/bonds. The higher the expected return of a bond, the more an investor will be willing to invest in these types of government bond. Keep in mind, however, larger interest rates do not necessarily mean a higher expected return. In bonds with a long maturity date, high expected interest rates relate negatively to the expected return. The returns of long-term bonds are more volatile than the returns of short-term ones.<sup>5</sup> Also, one should take into account the expected inflation rate (this phenomenon will be dealt with in the coming sections) and the markets for, for example, stocks and gold.

<sup>5</sup> For an in-depth explanation, see Chapter 4, Table 2 of Economics of Money, Banking and Financial Markets; Frederic S. Mishkin (2001).

Thirdly, the risk plays a significant role. If there is a huge degree of uncertainty that goes with the return of the government, the investor might avert. The degree of uncertainty will cause the investors to ask for a risk premium, which is a kind of hazard pay for their investments. It is a form of compensation payment that makes the investor willing to take the risk. Greek government bonds in 2011 have served as an illustration to this.

Lastly, the theory of asset demand states the liquidity influences the willingness to buy. By liquidity, the quickness of the convertibility into cash is meant. Government bonds have always been relatively high-liquidity assets. However, the recent Eurozone crisis has enlightened economists that this is not naturally the case.

### 3.5. Supply of government bonds

Several factors exist that influence the demand of government bonds. Likewise, there are some factors that contribute to the supply of these bonds. The supply of government bonds depend on the expected profitability of investments opportunities, the expected inflation and, most importantly for this paper, government activities.

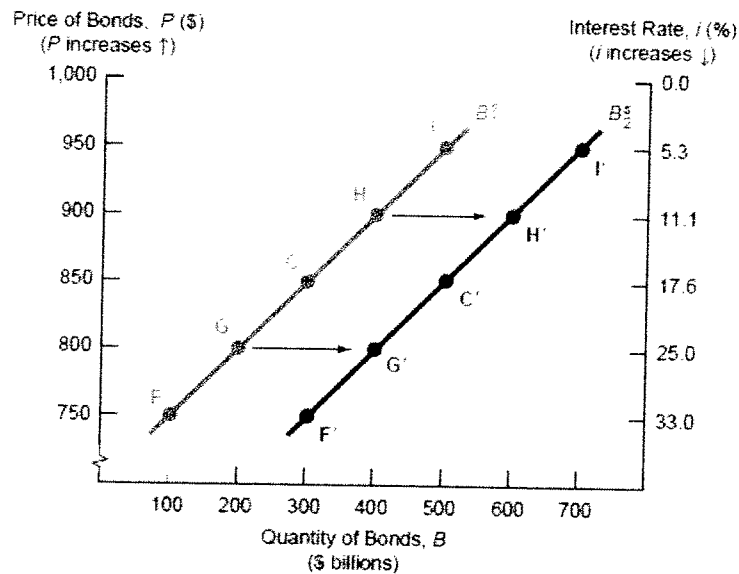
The expected profitability of investments opportunities can be simplified on macro-economical level to the economic situation in a certain period of time. In a cycle expansion, there are more expected profitable investments opportunities, thus the supply of government bonds increases. However, a government can also decide to stimulate the economy by increasing the effective demand, as economist Sir. John Richard Hicks described in his interpretation of Keynes' *General Theory of Employment, Interest and Money*. In this case, the government also creates a budget deficit which will result in an increase of government bonds.

Next to this, the expected inflation also has its consequences for the supply of government bonds. Namely, the real cost of borrowing falls when inflation rises, this means the quantity of outstanding government bonds increases, which consequently means the interest rates rise as well.

Last but not least, the policies of a government are a key in the supply of government bonds. When a government faces a deficit, it needs to issue government bonds in order to finance the deficit. Following an increase in supply of government bonds, the interest rate normally rises as there are more government available on the market. This means the price of government bonds will be lower, which will cause the interest rates to rise, as proven in section 3.2. See figure 3.2. The figure shows the price of government bonds and the interest rate in the same graph, therefore the axis of the interest rate is inverse compared to the price. (zero is the highest point on the axis of interest rates)

Shift in the  
Supply Curve for Bonds

When the supply of bonds increases, the supply curve shifts to the right. (Note:  $P$  and  $i$  increase in opposite directions.  $P$  on the left vertical axis increases as we go up the axis, while  $i$  on the right vertical axis increases as we go down the axis.)

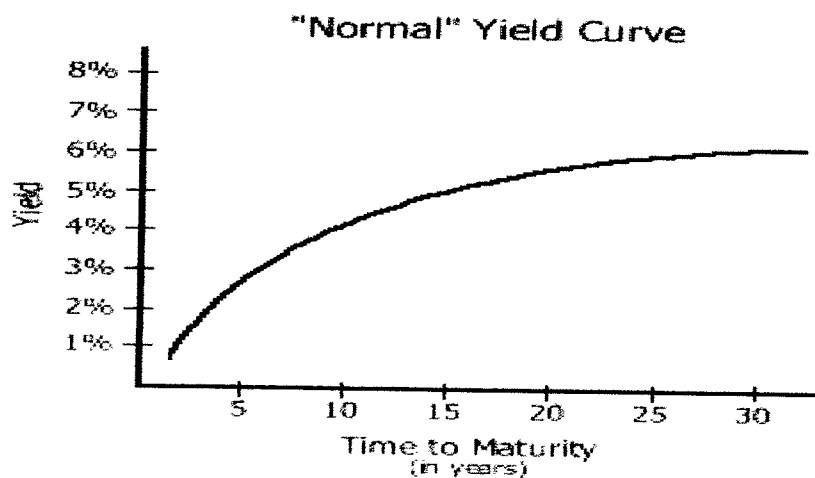


**Figure 3.2.** Economics of Money, Banking and Financial Markets (Mishkin, Frederic S), 2002.

### 3.6. Different government bonds

Every government issues its own government bonds, as every company issues its own bonds. However, even the government bonds of one country vary a lot. We look at both the term structure as well as the risk structure of government bonds. By doing this, one can obtain vital information when deciding to invest in government bonds or not.

The term structure of a government bond states the date of maturity. While some government bonds may be the same in terms of e.g. risk, the date of maturity may still influence the interest rate. Logically, a later date of maturity means a larger percentage of interest because the more years the more uncertainty. Government policies, for example, will not change within 5 years but can easily change within 30 years. The economy of a government does not drastically change in 5 years, but the situation in 30 years is more difficult to predict. This is illustrated in what economists call yield curves. See figure 3.3.



**Figure 3.3.** Normal Yield Curve, based on Mishkin, 2002

The default risk is an important fact when looking at the risk structure of a certain government bond. Default risk means the chance the issuer of the bonds is unable to repay its obligations.

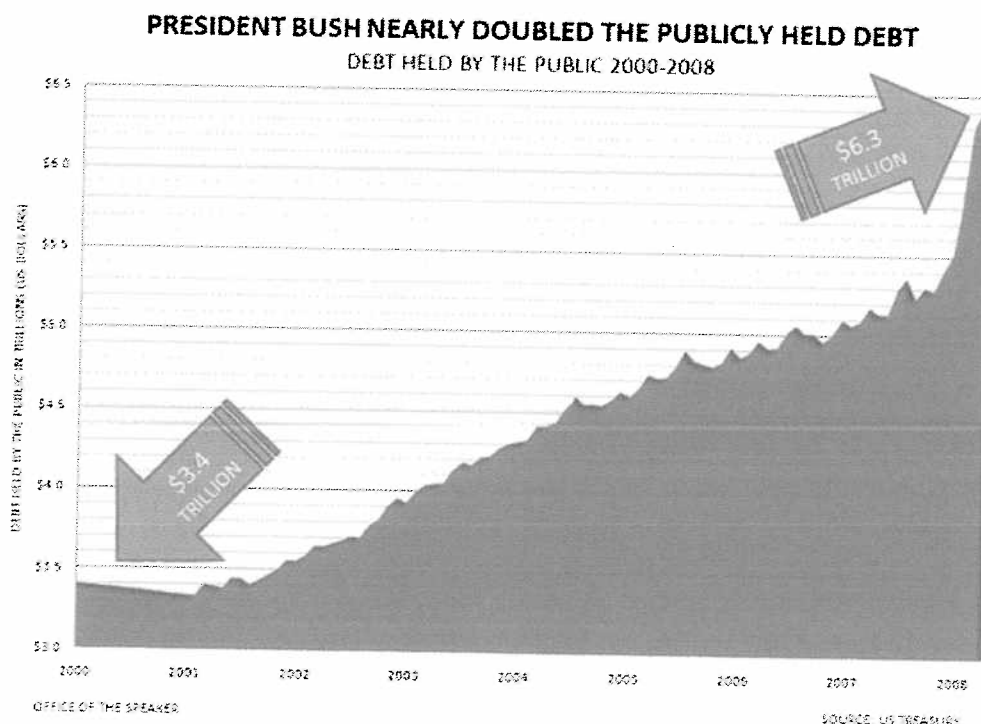
In general, most government bonds were thought to be default-free. However, recent Greek events have proved differently. The higher the interest percentage, the higher the risk investors take. For example, a 20 percentage interest on government bonds might seem very attractive as it yields a lot. However, there is a huge risk because there is a chance the government might not be able to repay the sum of money on the maturity date. In order to give an overview of the safety of (government) bonds, there exist three major investment advisory firms, namely Fitch, Moody's and Standard & Poor's. These companies examine and rank the different bonds. These ranks (AAA – D, Aaa – C, AAA-D) are important stats for investors. A downgrade of the risk-default status of a bond might mean a shift to the left in demand of that bond. For a broader overview of the different credit ratings, see figure 3 in the appendix.

## 4. Analysis of the United States public debt

### 4.1 Introduction

The United States debt is continuously growing. Before the inauguration of George W. Bush as president of the United States the federal debt had a value of \$ 5,807,000,412,000.06 (NOS, 23-06-2011). The debt meanwhile increased to a value of more than \$15 trillion and is rising every second with approximately \$ 48.000, the *public* debt is still smaller than yearly GDP, which means the U.S. is still producing more in one year than the total amount of their public debt (USdebtclock.org, 17-12-2011). The debt clock of some other countries shows that this is not the case for all countries, for instance, in Italy public debt is equal to 119% of their GDP (USdebtclock.org, 17-12-2011). In the U.S., public debt as a rate of GDP is equal to 63% (CIA Factbook, 28-11-2011)

Nevertheless, the value of the public debt is certainly alarming. The question, however, is: How has this enormous public debt come to existence? To answer this question, one has to explicitly analyze the interval from the inauguration of George W Bush to the era of Obama. In that period, a number of events occurred which have led to a sharp increase of the public debt, see figure 4.1. below. In this chapter, first a brief overview of the development of U.S. public debt will be given. After that, the factors that have caused the enormous increase of the public debt in the past decade will be analysed. Therefore, the focus lies on the presidency of George W. Bush (and of Obama.)



**Figure 4.1.** Public debt 2000-2008, U.S. Department of the Treasury, 2008

#### 4.2 Post-2000<sup>6</sup>

Since its inception, the United States has dealt with a public debt. The first debt occurred as a consequence of the American Revolutionary War. The war in 1812 led to the first sharp increase of public debt. After the war of 1812, the U.S. paid off 99,97% of its debt in the following 20 years.

The second sharp increase of the U.S. public debt was in 1861, when the civil war in the United States occurred. At the beginning of the civil war, the public debt had a value of \$ 65 million. In 1865, at the end of the civil war, the public debt rose to a value of \$ 2,7 billion. The U.S. paid off 50% of its debt in the following 47 years.

The next significant increase of U.S. public debt occurred during the First World War. Public debt increased to an amount of \$ 25,5 billion. So far, this was the biggest increase of public debt. In the following years, the U.S. reduced its debt by 36%.

In the interval between 1930 – 1950 the U.S. public debt accelerated enormously and reached a value of \$ 260 billion. This excessive growth of the U.S. public debt was a result of the Great Depression in 1929, policies of Roosevelt and Truman in the 30s and 40s, and the Second World War.

Between 1950-1980 the U.S. public debt was constantly growing. In 1980, public debt amounted to \$ 909 billion. In this interval, it was especially the war in Vietnam that caused the increase of the debt.

During the presidencies of Regan and Bush (senior) the public debt kept on growing. However, as of the inauguration of Clinton, the debt decreased in relative terms. This decrease coincided with – and may be attributed to – the surplus the U.S. government had on the balance of payments.

Since 1962, the U.S. has lifted the debt ceiling 74 times (Congressional Research Service, 7-3-2011). Most of the times the lift of the debt ceiling have occurred after heavy discussions in Congress. Recently, during the summer of 2011, the debt ceiling was extended again because otherwise the U.S. government would risk a default. Because of the lifts of the debt ceiling, the public debt of the U.S. was allowed to increase to an enormous amount.

The U.S. public debt is mainly realized by the many wars in which the U.S. were involved in. The figure 4.2. below shows the growth of the U.S. public debt as a consequence of the wars. Needless to say, the figure shows that deficits are associated with an increasing public debt. Since the Second World War, the U.S. economy was continuously growing. For that reason, as shown in figure 4.3., between 1945 and the inauguration of Carter, the U.S. public debt decreased in relative terms. After this, the U.S. government has, except for the presidency of Clinton, frequently had a huge deficit, which resulted in an increasing U.S. public debt, in relative terms. The public debt as a percentage of GDP is a key for measuring the public debt.

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<sup>6</sup> This paragraph is mainly based on: United States public debt; Anonymous (2011), <http://www.scribd.com/doc/52474317/United-States-Public-Debt>, unless indicated otherwise.

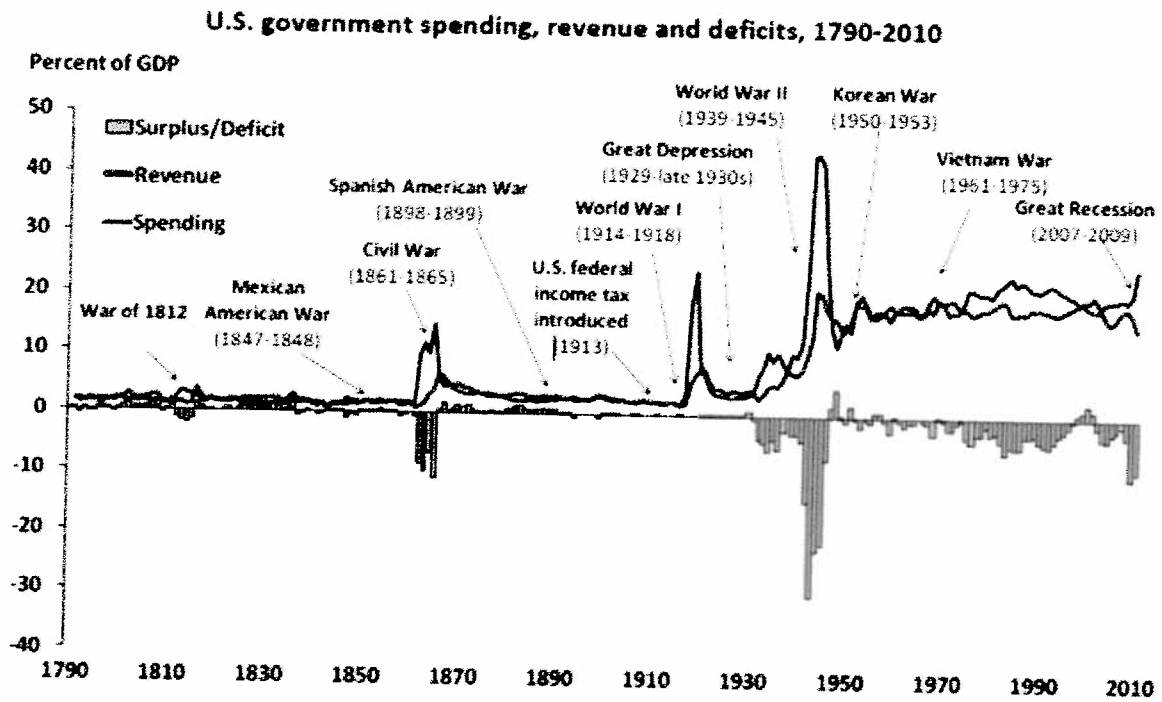


Figure 4.2. U.S. spending, revenue, deficits 1790-2010, Milken Institute, November 2011

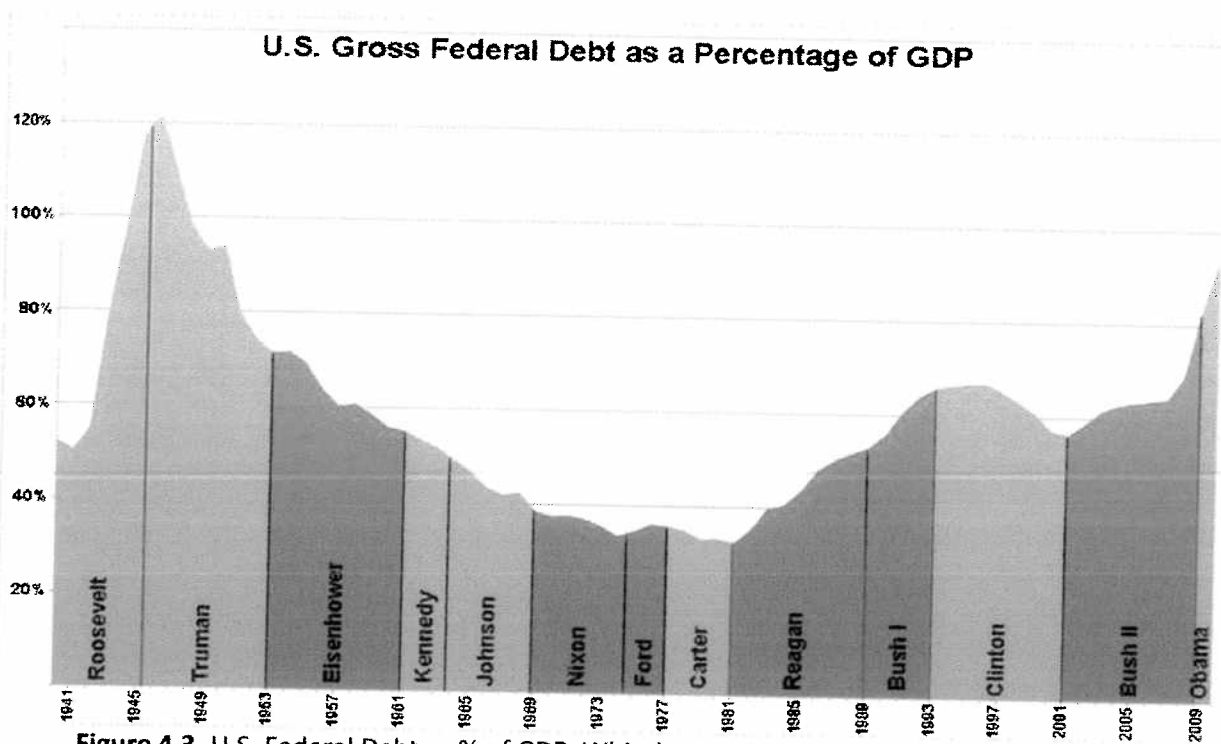


Figure 4.3. U.S. Federal Debt as % of GDP, Whitehouse Government, 7-04-2010



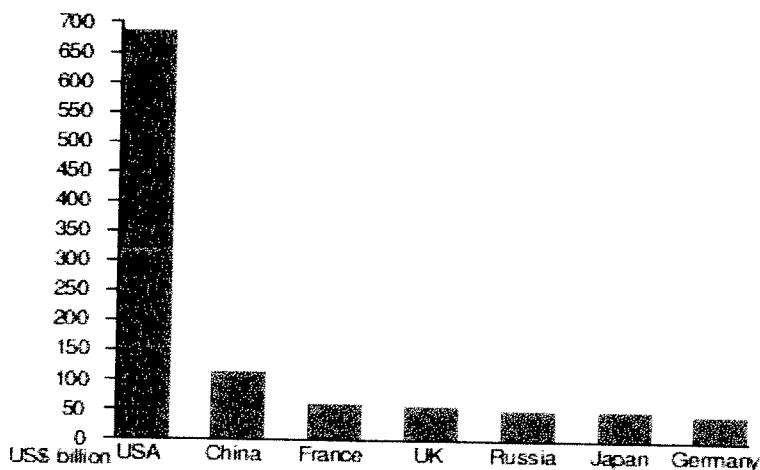
### 4.3 The Bush Era 2000-2008

#### 4.3.1 The United States Deficit

Since the inauguration of George W Bush the public debt has increased sharply. In 1999, the U.S. government reached a surplus of \$ 200 billion, but from the presidency of George W Bush until recently, the government ran consecutive deficits (NOS, 01-02-2010). As a result, public debt has annually increased from 2000 onwards. According to budget experts in Congress, the U.S. deficit will increase in 2010 to a record height of 1,500 billion dollar, that is 100 billion dollar more than in 2009. (NOS, 27-01-2011). In short, the U.S. government is currently spending much more than it is earning from tax revenues. Therefore, we will analyse the earnings and the remarkably high expenditures of the government.

#### *Expenditures*

Within the expenditure of the government, the spending on national defense is enormous. As of the inauguration of Bush, the U.S. have been involved in the War on Terror, especially in Afghanistan and Iraq. All these wars have had their impact on government spending. "In 2008, the U.S. spent 696.3 billion dollar on defense. This amount nearly equals half of the expenditures on defense all over the world. (See figure 4.4) The budget available for defense for the fiscal year 2010 was \$ 720 billion, 67% more than the \$ 432 billion in 2009, as adjusted for inflation." (Laicie Olson, 21-05-2010) The expenditures on defense are undoubtedly a major contribution to the annual deficit of the U.S. and to the increasing public debt going with it.



**Figure 4.4.** The world's top 7 largest military budgets in 2011, SIPRI.org, 29-11-2011

Not only the expenditures on defense can be seen as a cause of the deficit, but also the rising expenditures on ageing, health care, the Great Recession of 2008 and the increasing interest rates. As a consequence of these other factors, government expenditures have increased to 24% of GDP (Peter de Waard, 27-07-2011). Moreover, rising expenditures on public health, increasing unemployment, spending on the space program and assistance of development are also causes.

### *Earnings*

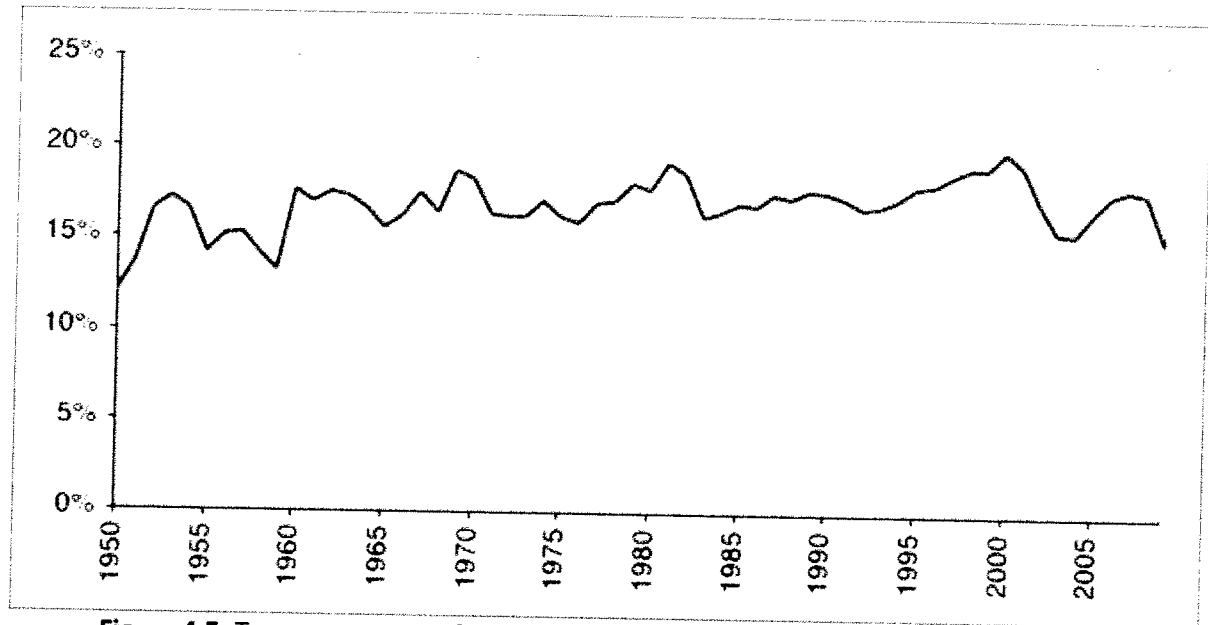
In 2000 George Bush was elected as the president of the United States, mainly due to his promise to reduce taxes. His plan was to reduce taxes with \$ 1,600 billion over ten years by introducing, among others, 'lower income' taxes for top incomes. (TheUSA.nl, 2011) In short, a promise of minimum tax rates for U.S. citizens.

As of the inauguration of Bush, economic growth was shrinking. The growth of the economy in the long run was most important in his plans. {{25 Lizza,Ryan 2001}} According to Keynes' theory, in a recession the government should intervene in the economy by tax cuts or by increasing expenditures. As a consequence of tax cuts the American citizens had to pay less to the government, which resulted in increasing purchasing power and consumption. Therefore, effective demand increases. Hence, the demand for products rose and the demand for labor as well, etc. (IS/LM model, John R. Hicks interpretation of Keynes) This phenomenon is known as the 'multiplier effect.' The final result of the government intervention in a recession should be an uplift of the economy in the short run.

However, the theory based on Keynes idea's suggested that a tax cut results in a higher effective demand if the taxes of a particular group of consumers – i.e. poorer households – are cut. Bush' policy was intended for the top incomes. His plan reduced the highest marginal tax rate and cut the number of tax brackets in half. Additionally, it lowered the tax rate on dividends, capital gains and interest. The most important aspect of his plan was the simplification of a number of costly tax deductions aimed at micromanaging U.S. citizens' economic lives {{27 Salam,Reihan 2010}}. The reasoning was, if one taxes the top incomes more, it will discourage them to invest which will not lead to job creation. Therefore, if one cuts taxes for that group, the top incomes will have more capital, which can lead to more investments, thus more jobs. However, it is not guaranteed that this group will invest the additional capital in the economy. Furthermore, top incomes have already provided most of their desires. Because the marginal consumption quote for top incomes is small, a tax cut will lead to an insufficient increase of consumption. On the other hand, if the tax cuts apply to the lower and middle incomes, which have a significantly larger marginal consumption quote, this will result in a larger increase of consumption but Bush wanted to stimulate the supply side instead of the demand. To put it differently, lower and middle incomes will spend a larger part of their marginal income. Besides, the group of richest people in the USA consists of 2% of the population. A tax cut can lead to a significant incentive for the economy, provided that the right taxes are reduced.

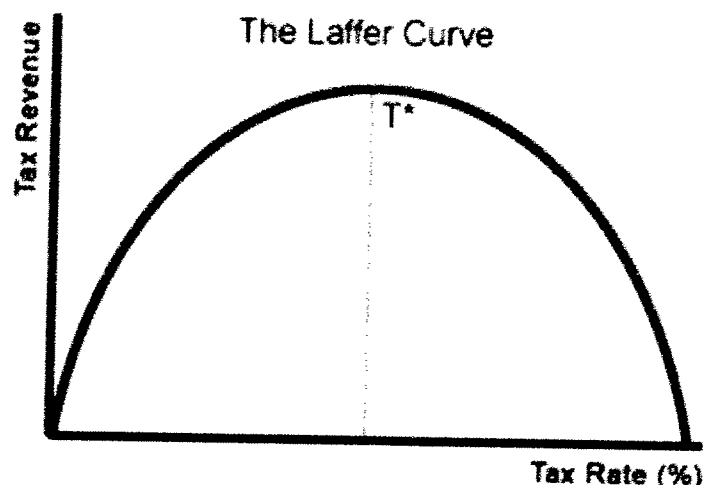
In short, the implementation of Bush plans for tax cuts were especially in favor of the richest people in the U.S.{{27 Salam,Reihan 2010}} The tax system of the U.S. is notorious for the numerous possibilities for tax deductions. This is also shown by the letter of Warren Buffet. Warren Buffet, the CEO of Berkshire Hathaway paid 6,9 million dollars on taxes in 2010. According to his letter, he believes this amount to be too low. (Jeanne Sahadi, 12-10-2011) In his letter, he explains that what

he paid for taxes corresponds to a tax rate of 17,3%. This rate is on average lower than what most people in the U.S. are required to pay in taxes. As a consequence of the tax cuts of George W. Bush, the tax revenues and thus the income of the government decreased. The figure below shows that tax revenues as a fraction of GDP decreased relative to 2000. In turn, this has led to an increasing deficit, and is the least in part a cause of the growing U.S. public debt.



**Figure 4.5.** Tax revenues as a fraction of GDP, Department of Numbers, 05-08-2010

The 'Laffer Curve' also supports the fact of decreasing revenues, when one cuts taxes. 50% would be the optimal revenue percentage, the United States have adopted a much lower tax percentage. See figure 4.6.



**Figure 4.6.** The Laffer Curve, Investopedia, 04-01-2012

In short, U.S. public debt has increased since the inauguration of Bush as a consequence of the annual government deficits. The deficits were especially established through high expenditures. Moreover, the tax cuts have reduced the earnings of the government, while the expenditures of the U.S. government increased. In figure 4.7. below, the causes of a change in average surplus to deficits are shown.

Causes of Change in Average Surplus / Deficits Forecasted by CBO for 2009-2012

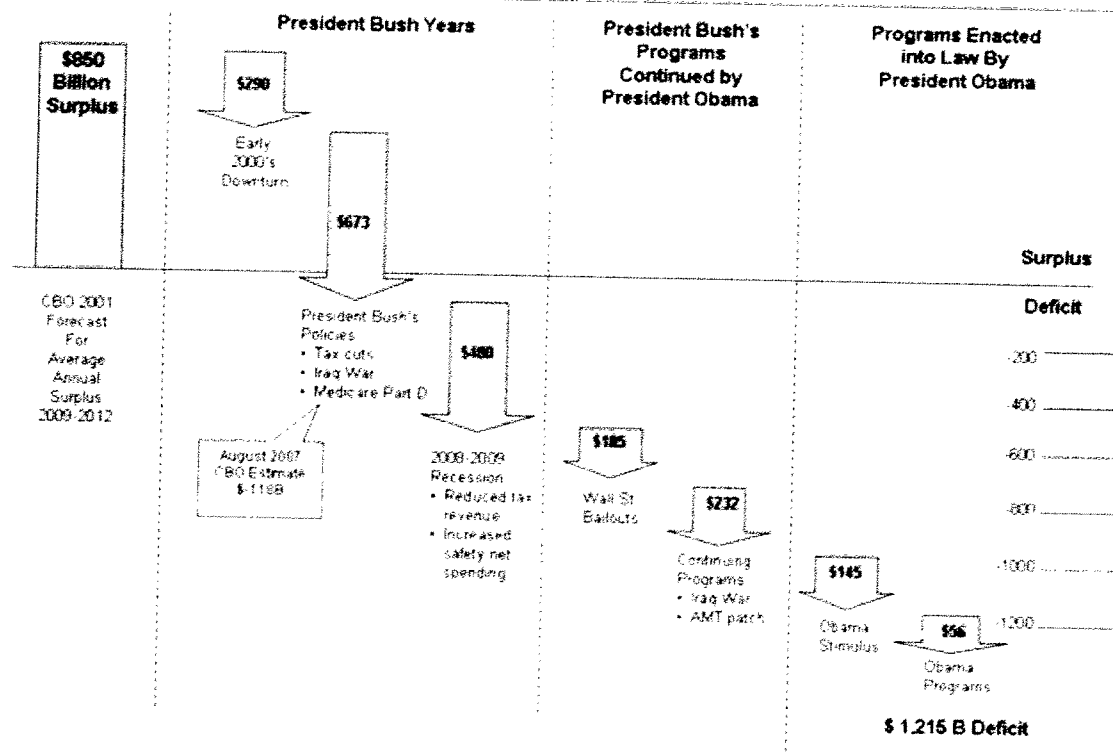


Figure 4.7. Causes of Change in Average Surplus/ Deficits, NY Times, 2010

#### 4.3.2 The balance of payments of the United States

The balance of payments is an overview of all the incoming and outgoing transactions with foreign countries in a given year. As a consequence of the annual deficit of the U.S. government, foreign investors invest heavily in the U.S. economy. The balance of payments consists of two accounts, which we both will relate to the U.S. public debt. The current account is related to the input and output of goods and services, payments of income from and to foreigners and unilateral transfers. The capital account records the U.S. net sales or purchases of asset-stocks, bonds, loans, foreign direct investment, and reserves with other countries during the same period.

##### *Current account*

The U.S. has a current account deficit which has expanded to record levels as of the inauguration of Bush {{17 BERTAUT,CAROL C. 2009}}. Between 1996 and 2004 the deficit of the current account increased by \$ 650 billion, from 1,5% to 5,8% of GDP. Running a current account deficit means that imports exceed exports, which has been the case for many years in the U.S. This is a systemic weakness of the U.S. economy. As a consequence of developments in the U.S. and in the world, the purchase of goods and services increased dramatically, which has led to an enormous current account deficit. However, the high consumption in the U.S. is the engine of the biggest economy in the world. We will address the prospects for the U.S. current account deficit.

The function for consumption is:

$$C = Y - S - T$$

Where C equals consumption, Y aggregate income, S savings and T taxes.

Over the past two decades, the personal saving rate in the U.S. has declined from about 10% to 1,2% among others due to the low interest rates. {{29 Periodical, The dot-com bubble, the Bush deficits, and the US current account 2004}} Considering the low interest rates, it is not attractive anymore to save income. Consequently, consumers tend to spend almost all of their income in the short-run instead of saving for future consumption. It can be said that the 'near zero personal savings rate' has resulted in the enormous imports by the U.S. ((Savings – Interest) + (Taxes – Government Spending) = (Export – Import )) Since both the saving rate as well as the government results are negative for the United States, it follows America imports a lot. Additionally, according to the U.S. Commerce Department's Bureau of Economic Analysis, U.S. citizens spent more than they earned in 2005. This corresponds with a negative savings rate of 0.5 % for the year 2005 (Laura Bruce, 08-03-2006). In other words, households dipped their savings, or borrowed in order to provide in their consumption. This is also known as the consumption boom hypothesis {{29 Periodical, The dot-com bubble, the Bush deficits, and the US current account 2004}}. The economy of the U.S. is the largest economy in the world because of the exuberant consumption behavior of U.S. citizens. Remarkably, the savings rates of the households have decreased sharply as of the year of 2000, corresponding with the inauguration of Bush {{30 Feldstein, Martin 2006}}. This probably was due to the expected economic growth, which resulted in fewer saving, which has led to an increase of consumption and therefore is a factor contributing to the current account deficit.

Furthermore, because of the rising prices of stocks and homes, U.S. citizens became wealthier {{30 Feldstein, Martin 2006}}. Despite the fall of the stock market in 2000, the average stock market prices almost doubled {{30 Feldstein, Martin 2006}}. This affected the income of U.S. households in a positive way, which enabled them to consume more.

As a consequence of the tax cuts of Bush, expendable income increased. However, as we know from the previous analysis, the tax cuts were especially in favor of the higher incomes. This group has a small marginal consumption quote. The large increase in consumption cannot fully be explained as a result of tax cuts because the wealthier people have indeed saved some money, while the poorer households, on the other hand, have not saved their money. In fact, this group of people have spent more than the income they received.

On the other hand, the government can also be seen as a consumer. According to the Economic Report of the President (Chapter 6, 2006), savings declined. For example, the expenditures of the government on national defense have been excessive. Additionally, the policies of Bush have definitely had a considerable effect on the current account deficit {{9 Kraay, A. 2007}}. This has led to dissavings, or net borrowing. Especially the excessive expenditures of U.S. government were the dominant factor in the 'over consumption' of the United States government.

Another possible cause for the rapid increase of the U.S. current account deficit in the last decade is the technological restructuring of the U.S. economy {{9 Kraay, A. 2007}}. This has resulted in a higher labour productivity. Households expected these productivity gains to continue in the future, which influenced the value of future expected income in a positive way. For that reason, households have reduced their savings for future consumption. As a result of the technological restructuring, the private consumption increased. However, the real employment income, as adjusted for inflation, did not increase in the U.S. between 2001 and 2005 (Maarten Schinkel, 25-11-2005)

Furthermore, the high exchange rate of the dollar has remained roughly the same, which makes import inexpensive. This is caused by the Asian countries buying dollars. As a result of buying dollars, the Asian countries keep their currency low with respect to the dollar. Therefore, U.S. import is cheap and U.S. export is expensive. Hence, imports are stimulated and exports discouraged, which has also affected the current account deficit. The situation in Europe might also have had effects on the import of the United States as the dollar has been stronger than the euro, which again caused more import than export. A figure on the U.S. Trade Balance can be found in the appendix, figure 4.

In short, especially the low interest rates have led to a near zero personal savings rate. If one looks at the consumption function, one sees that the savings became smaller and therefore the consumption higher (mostly in the lower-class of the society). Additionally, the technological restructuring has also affected the behavior of the households, because many expected that this prospect would affect the present value of future expected income in a positive way. Nevertheless, in many cases it has reduced savings while income did not increase. Also, because of rising stock market prices and real-estate prices the American citizen became wealthier. The expenditures of the government were also excessive. Because of the role of Asian countries with regards to the exchange rate, import became cheap and export expensive.

### *Capital account*

As we know, the U.S. has a current account deficit. The question now is, who is financing the current account deficit? For an answer to this question see figure 2 in the appendix. If the U.S. runs a current account deficit, other countries must be running a current account surplus. The current account can only be financed through capital inflows from foreign countries. Since 1980, the U.S. has attracted almost \$8 trillion of foreign investment, which has provided U.S. companies with capital to start or expand (Mark J. Perry, 25-10-2010). So the counterpart of a current account deficit is a capital account surplus. In that case foreign investors purchase more capital than the U.S. invests abroad. Foreigners invested more than \$2 trillion in U.S. assets in 2007, which was more than the approximately \$1,4 trillion invested by Americans abroad (Mark J. Perry, 25-10-2010). The U.S. received net capital inflows. This may be explained as follows: a foreign investor buys American firms, invests in the U.S. and opens an establishment or buys American stocks or bonds. However, the purchase of U.S. Treasury bonds is the main source of funding for the current account deficit. This has kept the economy of the United States, which is the biggest economy of the world, going.

Especially the Asian countries (China and Japan) have bought the U.S. Treasury bonds. "The Asian countries have used the U.S. as a take-off market for their goods and services. Because the U.S. consumes above their ability, the Asian countries find a rewarding market" (Irene Cheung, Maarten Schinkel, 25-11-2005). A take-off market can be defined as an abstract market where goods and services are offered. The Asian countries buy dollars and stock their own currency. This results in a high exchange rate of the dollar with respect to the Asian currencies. The international competition position (ICP) of the Asian countries will improve as a result, which corresponds with a relatively cheap export by the Asian countries and, thus, relative cheap import for the U.S. According to the IMF, the currency reserves of Japan and China, which consist for the largest part of dollars, were in 2005 respectively 500 billion and 600 billion dollars. However, in 2005 Japan reduced the purchase of dollars (U.S. Treasury bonds), while China increased the purchase of dollars (Maarten Schinkel, 25-11-2005). In 2011, foreigners owned \$4,45 trillion of U.S. public debt. Chinese investors are one of the main holders of U.S. public debt (see figure 2 in the appendix). In short, it can be said that the main cause of the current account deficit, the over consumption of the poorer and largest part of the population, has encouraged the foreign investors, especially China and Japan, to finance U.S. public debt.

Additionally, in the period between 1995 and 2004, GDP and therefore the U.S. economy grew at an average rate of 3,2%, while the economic growth of Japan equaled 1,1 percent and that of the Euro zone 2,3% in the same period (Economic Report of the President Ch. 6, 2006). For that reason, the U.S. became very attractive for foreign investors. Economic growth improves profit forecasts and the efficiency of investments, and these factors are decisive for foreign investment.

Furthermore, the technological restructuring of the U.S. economy has resulted in an increasing productivity and support economic growth {{23 Hervey, Jack L. 2000}}. According to the Organization for Economic Co-operation and Development, the efficiency of inputs in the U.S. for the period between 1995 and 2003 was relatively high compared to other countries. Canada, Great Britain and Germany did not have excessive rates of growth, while Japan had a low rate of productivity growth (Andrew Balls, 11-2005). For this reason, the U.S. was seen as a safe haven, suitable for foreign investors.

Moreover, the tax cuts of George W. Bush the business climate improved. It reduced the tax rate on dividends, capital gains and interest {{27 Salam,Reihan 2010}}. This improved the efficiency of investments and profit forecasts. Besides, it might also have encouraged entrepreneurship and therefore stimulated the economy. All this supported U.S. capital inflows.

Because of a current account deficit, the U.S. had to import capital from foreign countries. Several factors encouraged capital net flows into the U.S. Especially China and Japan hold U.S. public debt. Because of the fact many (poor) people in the United States live above their standards, even the U.S. government itself, the Asian countries have been encouraged to invest in the U.S. It follows that the poorer part of the United States is over consuming while the Asian countries are at the same time supplying and financing their own products. This is stimulated by China's exchange rate policy. Other factors that support U.S. capital inflows are economic growth, productivity growth and the tax cuts of Bush. In short, as a consequence of the availability of capital inflows, the U.S. is allowed to run a current account deficit. This ensures that U.S. public debt can continue to be funded and it can increase relatively unhindered.

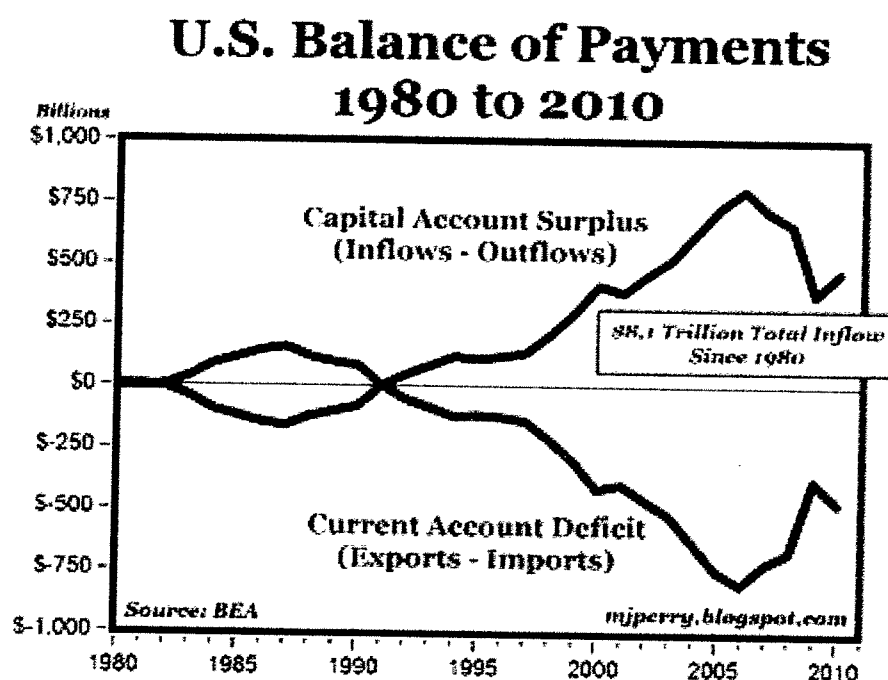


Figure 4.8. U.S. Balance of Payments, Bureau of Economic Analysis, 2010



## 5. The United States bond market

### 5.1. Introduction

Last year, one of the world's prominent credit rating agencies, Standard & Poor's, downgraded the "long-term sovereign credit rating on the United States of America to 'AA+' from 'AAA' " (Standard & Poor's, 2011). Although a lot of other factors than the U.S. public debt might have influenced the credit rating agency to do so, the action suggests a certain degree of distrust to investors. Once known as the safest investor's heaven, the position of the United States as a safe haven for investors might be in jeopardy.

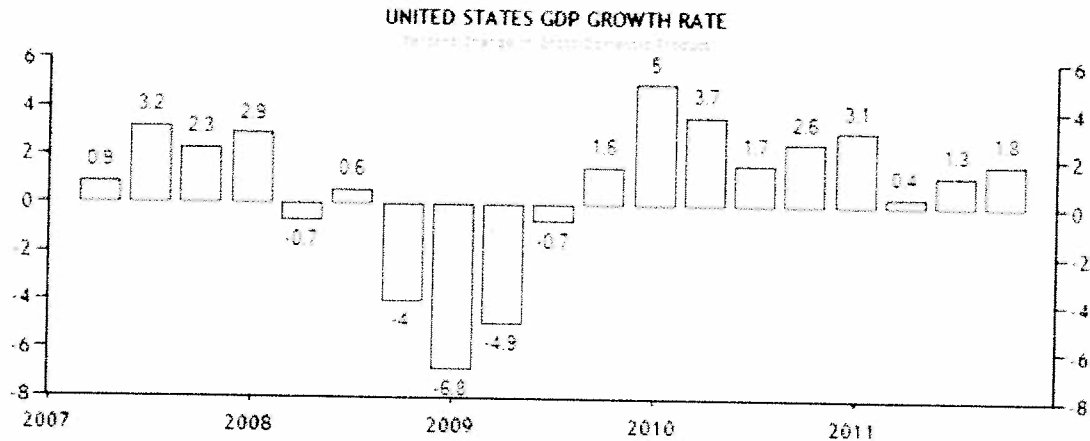
In this chapter, we will try to find out whether the downgrade by S&P is due to the growing United States public debt. We will do this by using the economic theorems concerning financial markets as proposed in chapter 3, we want to find out whether these theorems are applicable to the current situation in the United States, or not. If not, we will attempt to give an explanation. By doing this, we hope to be able to clarify the position and attitude of (foreign) investors towards the United States on the financial market.

We will have a look at the United States to see if the monetary theory summarized by Mishkin corresponds with the ongoing phenomena's in the United States of America. Additionally, we expect the theory will help to predict the behaviour of investors. In the theoretical framework, three important factors are which determine the attitude of investors. Firstly, the economic situation is an important factor for investors to consider. Secondly, the inflation plays an important role in a decision whether to invest or not. Thirdly, and perhaps most importantly, the demand for U.S. government bond is extremely an important determinant. By analysing these three factors, we hope to be able to explain and predict the attitude of investors towards United States government bonds.

### 5.2. Economic situation of the United States

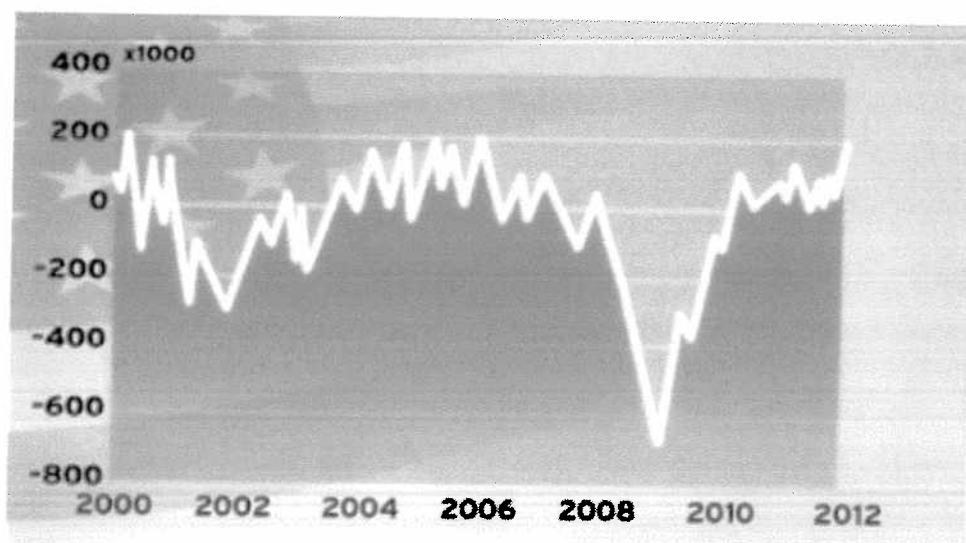
As became clear in the previous analysis, a country with a growing economy attracts (foreign) investors. Namely, economic growth supports profit forecasts and efficiency of investments. A booming economy will lead to optimism on the bond market. This will perhaps give the government the ability to finance its debts.

As a consequence of the recession of 2008, the U.S. economy was shrinking. In that period, the public debt increased sharply, especially as a consequence of declining tax receipts. For that reason there have been sold less long term treasury bonds in this period of time. Due to recovery on the financial and credit markets, the U.S. economy has started to grow again in the latter half of 2009. As shown in figure 5.1. below, the U.S. economy is continuously growing since 2009. However, the figure shows that this has not gone gradually. For many investors, economic stability is sometimes decisive when deciding where to invest.



**Figure 5.1.** United States GDP Growth Rate Bureau of Economic Analysis, 22-12-2011

However, the U.S. public debt increased in recent years, which means despite the recession there still have been investments in U.S. government bonds. This can be explained by the situation in other countries, for example in the Eurozone. Because of the euro crisis, there have been capital flows from Europe to the U.S. The situation in the Europe has not been what it used to be and many investors have avoided Europe. They hoped to find a rewarding market in the United States. The situation in Europe also has had its negative effects on the U.S. economy. However, at the moment, the numbers about the U.S. economy have been somewhat favourable. Surprisingly, the U.S. has shown relatively good job numbers. In December 2011 the number of jobs increased with 200.000. Therefore, the unemployment rate has decreased to 8,9%, which is a better percentage than in the midst of the crisis (Peter van Zadelhof, 06-01-2012). This has also resulted in increasing loans and hours worked. As shown in the figure below, the number of jobs increased since 2009, which supports the previous figure about GDP growth rate. Another sub-indicator of the economy is the number of factory orders, which has also been quite good. See figure 5 in the appendix.



**Figure 5.2.** U.S. Job Numbers changes 2000-2012, RTLZ, December 2011

All these sub-indicators are positive and have supported the economic growth. With these positive signs, the U.S. economy shows resilience, whereas Europe does not. Because of sovereign-debt crisis in Europe, China and other major foreign investors have increased their holdings of U.S. Treasuries. Among all foreign investors, the purchase of treasury bonds rose to \$84.52 billion in November 2011 from \$60.13 billion in August that year. {{32 BATER,JEFF 2011}}. Additionally, data has shown that foreign investors sold a significant amount of stocks and co-operate bonds compared. {{32 BATER,JEFF 2011}}. This advocates that the U.S. Treasury bonds became interesting for (foreign) investors.

"The US economics team of Goldman Sachs expects a fifth straight year of sub-trend economic growth with 1.6% GDP growth forecast in 2012 and the environment persisting in 2013 with 2.2%." (David Kostin, 11-12-2011). However, the economic growth mainly depends on the policy makers of Washington and Europe. Standard & Poor's predicts that the U.S. economy will accelerate in 2012 (Mark Zandi, 15-12-2011). These predictions make the U.S. attractive for (foreign) investors.

However, due to the positive news events about the U.S. economy, the public debt has been somewhat overshadowed. Many economists have discussed whether the U.S. public debt has reached an alarming level. John Chambers, chairman of the sovereign rating committee at Standard & Poor's argued that a good policy of the government is just as important as the debt/GDP ratio. His answer to the question was: "The debt of the U.S. is not at an alarming level." In paragraph 5.4, the term 'alarming level' will be analysed in more detail.

### **5.3. Inflation and the role of the Federal Reserve<sup>7</sup>**

The United States public debt has been growing throughout the last decade. The last surplus dates back to the year 1999. In order to understand the reaction of investors, it is essential to understand the consequences of a budget deficit.

In the United States, over the past few years, the Federal Reserve has monetized the United States debt by creating money to, via complex constructions, buy U.S. government bonds, thus covering the deficits of the government. (Mecking & Hoogervorst, 2011) These operations are known as 'quantitative easing'. (ibid) By doing this, the FED makes sure there is a lot of demand for United States government bonds, which will mean lower interest rates. (ibid) This is positive for the American government, as the government will have to pay a lower amount of interest in the future. (ibid) The first QE-rounds were in 2008 and 2009, followed by operation QE2 in 2010. Until June 2011, the FED bought an amount of government bonds which is approximately equal to \$600 billion. (ibid)

Ben Bernanke, president of the Federal Reserve, has defended his Quantitative Easing policy by stating the United States has no other option other than to start adopting QE policies, otherwise it would have to default. According to Bernanke, defaulting would be the stupidest option as it would have disastrous consequences for the United States as well as for the global economy.

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<sup>7</sup> This paragraph is mainly based on an interview with Peter de Bruin, Economist (specialization United States) at ABN AMRO Bank N.V.

*"Clearly if we went so far as to default on the debt it would be a major crisis because the Treasury security is viewed as the safest and most liquid security in the world. It's the foundation for much of our financial system. And the notion that it would become suddenly unreliable and illiquid would throw shockwaves through the entire global financial system." (Ben Bernanke, 2011)*

This indicates that even the president of the Federal Reserve has considered a situation of defaulting.

According to the theorems collected by Mishkin, monetizing the debt will lead to inflation, or: "financing a persistent deficit by money creation will lead to a sustained inflation." Then, corresponding the theory, what the FED has done over the last few year, should lead to high inflation expectations. However, this has, until now, not been the case as there has been an ordinary inflation rate in the United States over the last months. There are a few factors which can explain why the expected inflation rates do not differ too much from the ordinary rates.

First of all, the inflation will not rise in the short-term because the money the FED has used to perform the Quantitative Easing rounds will not reach the economy in the near future. Since the American banks do not necessarily have to lend out the money to citizens or companies as a consequence of the economic situation, the money created by the FED does not reach the 'real economy' – not yet.

Secondly, the oil prices contribute for a large part in the measurements of the American inflation. These prices have indeed been rising over the last few years, but this increase has stopped quite recently. Therefore, the inflation rates for the United States have lowered. However, as the situation in the Arabic can be described as unstable, it remains the question for how long the oil prices will continue to be stable.

Thirdly, the expected inflation rates are quite low in the United States . This leads to, what economists call, a low self-fulfilling prophecy. If the expected inflation rates are low, the working class will not demand an excessively high rise in loan because the cost of living will be expected to be more or less the same. Therefore, the inflation will be tempered.

Fourthly, the low inflation is illustrated by the unused capacity of the economy, one of the determinants of inflation rates.

All these determinants contribute to the fact the inflation has not risen yet and will not rise excessively in the short run. In the long run, however, it is difficult to say whether the inflation rates will rise. If the money created by the FED in order to finance the Quantitative Easing rounds will reach the real economy, inflation will obviously be a problem. Nevertheless, there are no indications as of yet which show when this is going to happen. Therefore, there is a certain amount of unpredictability with regards to the inflation in the long-run. Bernanke, however, has pledged he is capable of making sure the inflation rates will be kept stable for a long time.

#### 5.4. The demand for United States government bonds

Although there does not exist an absolute number which measures the demand for United States government bonds, there are several numbers which give an indication of the demand for these bonds. In a report by the U.S. House of Representatives Republican Caucus called "The perils of the rising government debt", several indicators are proposed such as the interest rate itself, the treasury actions results and the bid-to-cover ratio. In this section, these terms will be explained and recent statistics will be analysed in order to find a appropriate answer to whether the demand for U.S. government bonds has declined in 2011 – or will decline in the short-term.

First of all, there are the actual interest rates. Although both the nominal as well as the real interest rates can give an indication of the demand for U.S. government bonds, the nominal interest rates can give a clearer view upon the demand for government bonds, as nominal interest rates tend to be slightly more fluctuant than real interest rates. (over 2011 nominal dropped by 1.6%, real by 1,2%)



Figure 5.3. Treasury Yield 30 years, Yahoo Finance, 29-01-2012

In this graph the nominal interest rate on 30-year treasury bonds over the latter part of 2011 are shown. The yield on these bonds has dropped in 6 months from approximately 4.40% in July 2011 to 2.80% at the end of the year. The nominal interest rate has dropped with 1,6% in a space of time of six months. This pattern (although less drastic) has been the same for treasury yield for 5,10,15 and 20 years. In other words, the yield curve has dropped down. This indicates that is likely that the demand for government bonds has increased. Notably, the short-run nominal interest rates for 1/3/6 months, also called the overnight rates, dropped to 0% in November 2011 and have not recovered since then. The last time this phenomenon occurred was during the crises of 2008. Before that, the rates used to be quite high, around 3% or 4% on government bonds with a maturity of 1 or 3 months.

The demand on the United States bond market has increased, thus the price has increased and since there is an opposite relation between the price and yield of bonds, the interest rate has dropped.

Secondly, one can use the treasury auction result as an indicator for the demand. Treasury auction results show the difference between the highest bid and the median bid sold at the auction, the moment the U.S. bonds are bought. The difference between the yield before the auction and during the actual auction, is known as the 'auction tail'. By using this indicator, one can easily derive which new securities can be sold. A large auction tail would be a sign of declining interest in the market. Since the auction tail has sharply fallen over the last year, the demand for U.S. government bonds has increased.

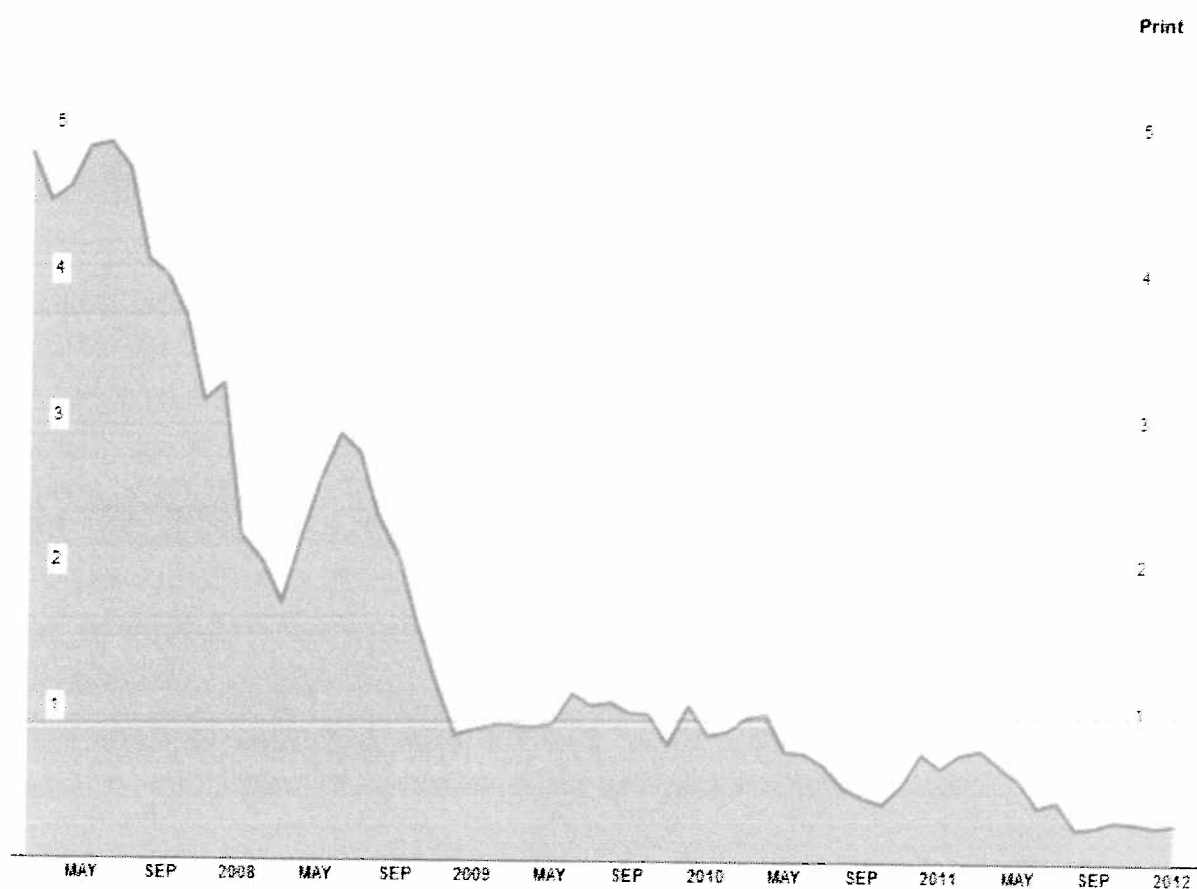
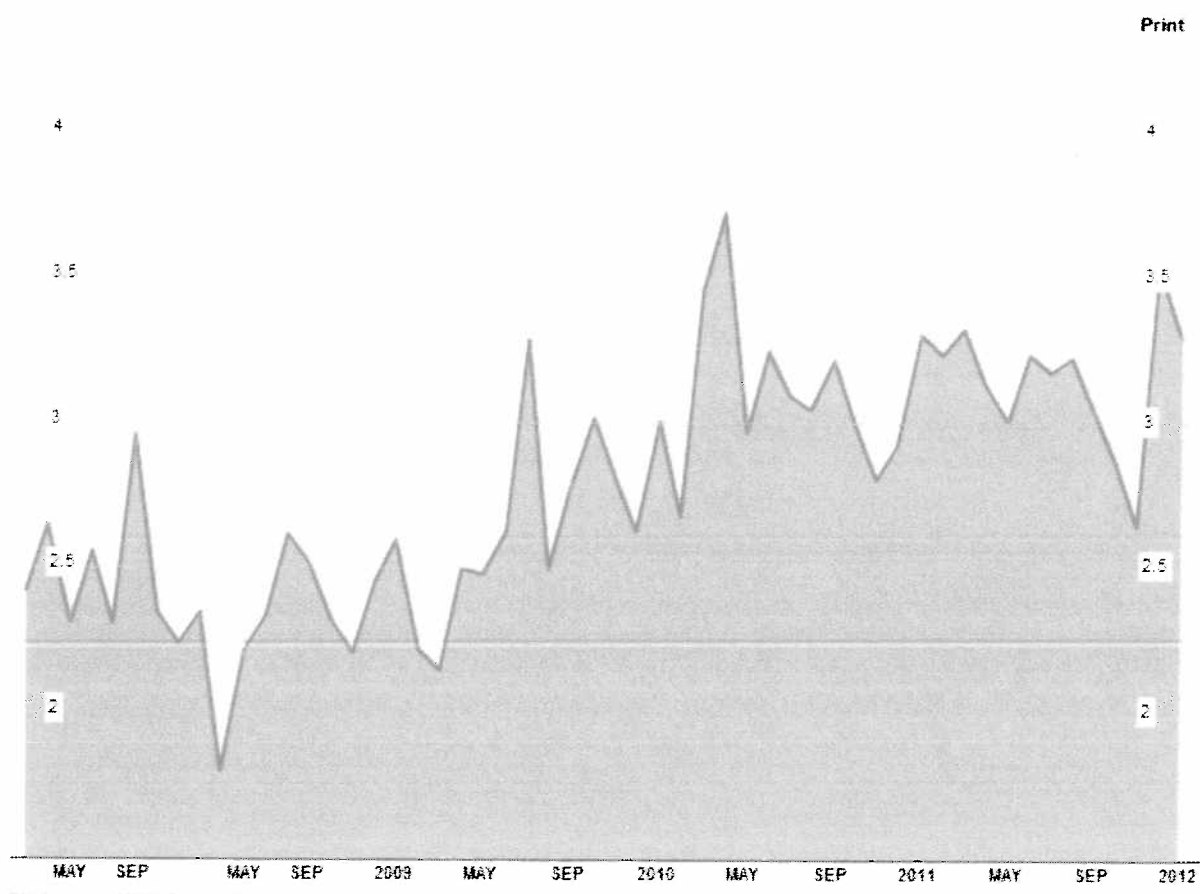


Figure 5.4. Treasury Auction results, Bloomberg, 29-01-2012

Thirdly, one can use the bid-to-cover ratio as an indicator when looking at the demand for U.S. bonds. This index shows the ratio between the total amount of treasury bids received and the total amount of treasury bids accepted on a competitive basis. Generally, this number is positively correlated to the demand of Treasury bonds, which means the larger the number, the greater the demand. The auction of Treasury bonds commonly has a bid-to-cover ratio of 2.0 or higher. By way of explanation, there are at least twice as many bids for U.S. bonds than the number accepted. With this index, one can derive information concerning the investor behavior. The figure below shows the concerning index from 2008 and 2012. In that period, the ratio remained above the 2.0, which suggest adequate bidding and relatively strong demand. In April 2008, in the midst of the Great Recession, the bid-to-cover ratio dips below 2.0, which tends to indicate that its more difficult for the government to sell its bonds.



**Figure 5.5.** Bid-to-Cover ratio 2008-2012, Bloomberg, 29-01-2012

Although U.S. public debt is continuously growing, considering the trend in the figures of the interest rates, the treasury auction results and bid-to-cover ratio, one can conclude the increasing public debt/GDP- ratio has not affected the demand for treasury bonds until now.

In the long-run, it is difficult to forecast what will happen. There are no facts which can give a prognosis of when the U.S. (public) debt will affect the attitude of investors. However, economists have general presumptions of when a country's debt might be on an alarming level. For example, in recent studies economists argue that a country might be in trouble when the debt reaches a level of 90% of the GDP. {{33 Reinhart, C.M. 2010}} Accordingly, if a country reaches this debt/GDP level, it will face an economic phenomenon called stagflation. (ibid) See figure 5.6. In this situation, there is no economic growth while inflation rates are high. (ibid) Since the inflation cannot be demand-pull inflation, probably cost-pull, or another type of inflation, approached from the supply-perspective, causes the phenomenon. However, the conclusions are based on research in numerous other countries, as well as on the history of the United States (esp. after World War II) where a debt/GDP of around 90% caused economical trouble. (ibid) Since the U.S. debt has already passed the ratio of 90% one might argue the situation of the United States is different. Nevertheless, the conclusion that stagflation might occur when a country has a high debt/GDP ratio might be noteworthy, also for the United States of America. As previously explained, the economic situation and inflation are two important determinants for investors in government bonds.

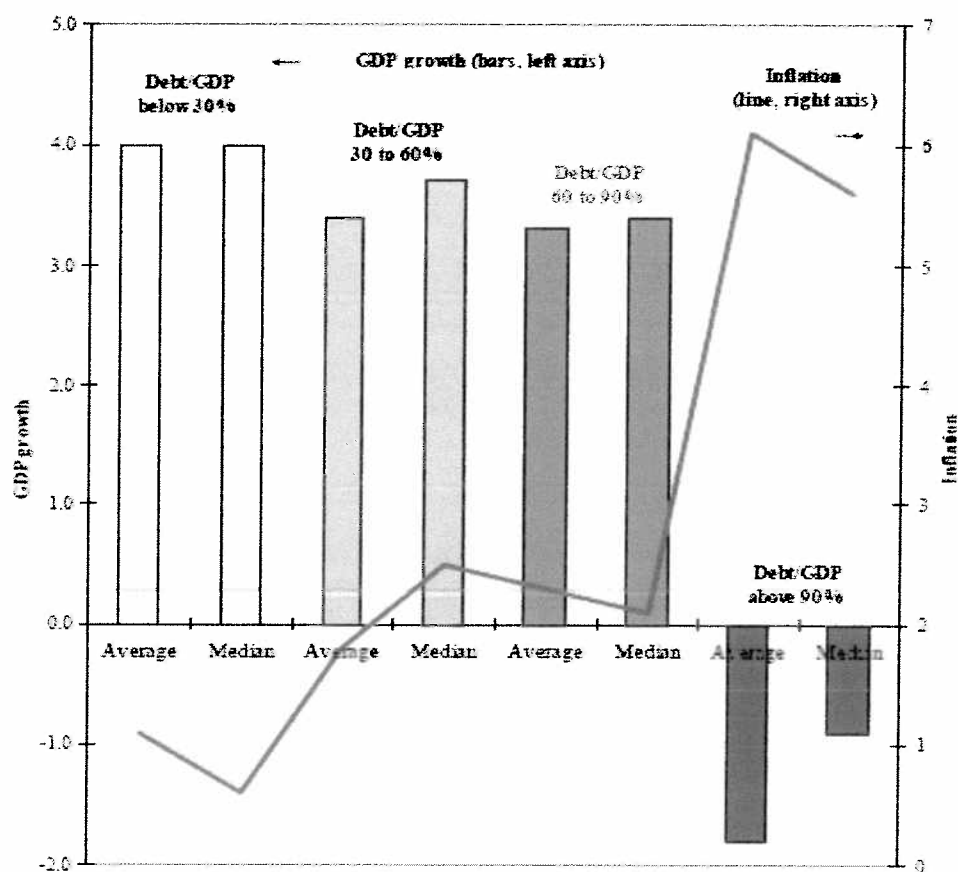


Figure 5.6. U.S. gross debt 1790-2009, Growth in a time of debt (Rogoff & Reinhart), 2010



## **6. Conclusion: What are the effects of the growth of the U.S. public debt on the attitude of (foreign) investors towards the United States of America?**

The United States public debt – and public debt in general - has been a phenomenon ever since governments have existed. However, the public debt to GDP ratio has grown consecutively for the last twelve years without the United States participating in an equally serious war as the First and Second World War. With regards to the consequences of the public debt of America, it might be a reason for skepticism amongst investors of United States treasury bonds, for both American as well as foreign investors.

The United States debt will, with the information that is currently available, continue to grow in the manner it has grown throughout the last few years. There are several factors which have caused this relatively steep growth, most of them which can be found within the George W. Bush era (2000-2008). The explanation for this growth is the fall in government revenue and the rise of the government spending. The main factor that has contributed to the drop of income of the United States government has been the tax policy of president Bush. The main factor that has contributed to the rise of the expenditure has been the 'War on Terror' after the tragic events of 9/11. The spending and income patterns of the last decade – esp. the last 5 years – have been such that one can safely say the growth of the public debt is persistent, there are no immediate changes to be expected.

What does this mean for the investors in United States treasury bonds – and thus in the United States public debt – will this cause these investors to be more hesitant in the future, or will the growing public debt not have any direct effects on the behaviour of investors?

In order to answer this question, it is essential to have a look at who actually owns the United States public debt. Besides, there is some information about the United States economy which might help to determine the seriousness of the subject of the matter. One should therefore look at three factors: the economic situation, the expected inflation and the interest rates which tell us something about the demand for United States government bonds.

In the media, various shocking numbers have occurred concerning the United States debt. Although the numbers certainly are worrying, the media may have exaggerated their reports from time to time. It is important to realize the United States also have a substantial intragovernmental debt which is not too dangerous.

The economic situation in the United States has faced a lot of trouble during the credit crunch, but seems to have recovered quite well after the crisis. The most important statistic measuring the economic growth, the Gross Domestic Product, has increased in every quarter of the years 2010 and 2011. Also, economic institutions expect the economy to continue growing in 2012. To put it shortly, the economic situation in America will not influence the attitude of investors of U.S. government bonds in the short-run.

The inflation forecast for the United States does not show any peculiarities. However, the role of the Federal Reserve in the covering of U.S. deficits will have its influence on the attitude of investors, in the long-run. The Federal Reserve has bought a lot of U.S. government bonds during so-called Quantitative Easing rounds. Although these policies have not affected the inflation in the United States

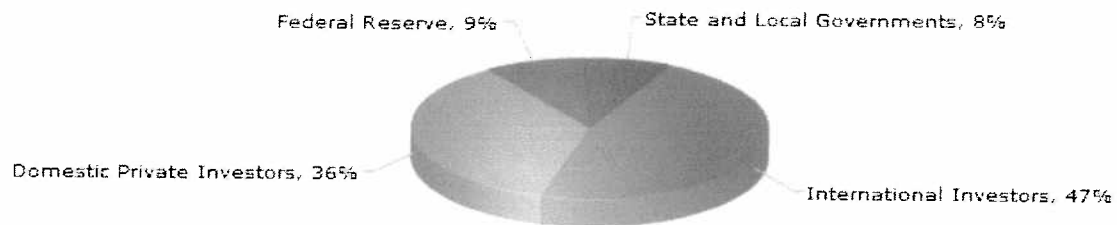
of America yet, they will undoubtedly have consequences for the inflation in the long-run. This might be a reason for investors to be skeptical about investing in U.S. government bonds, especially in the long run.

Thirdly, the interest rates on the treasury bonds have dropped over the last years. Also, other statistics which might indicate the demand for U.S. government bonds have all been quite good. The demand for the bonds seems to have grown a lot. These statistics, however, do not give any indication for the long-run and therefore the only conclusion that can be drawn up is that investors will continue invest in U.S. government bonds in the short-run.

All in all, it can be concluded that due to the seemingly unchangeable situation of consecutive deficits the United States government has, and the consequences that go along with this growing public debt, the attitude of (foreign) investors towards the United States of America will change in the long-run. However, the long-run cannot be defined since there are no indications that the demand for United States government bonds has begun to fall. Although there are certain signals(e.g. Bernanke, Standard & Poor's) as well as studies which state that the height of the debt/GDP ratio of the United States will cause investors to become more skeptical than they might have been in the past.

## Appendix

### Estimated Ownership of Federal Debt Held by the Public (End of Fiscal Year 2010)



**Figure 1.** Estimated ownership of Federal Debt Held by the Public Federal Reserve, Flow of Funds Accounts of the United States, Third Quarter 2010

Category	Percent
Int. Invest.	47%
Federal Reserve	9%
Governments	8%
Dom. Invest.	36%
Total	100%

MAJOR FOREIGN HOLDERS OF TREASURY SECURITIES  
(in billions of dollars)  
HOLDINGS 1/ AT END OF PERIOD

Country	Oct 2011	Sep 2011	Aug 2011	Jul 2011	Jun 2011	May 2011	Apr 2011	Mar 2011	Feb 2011	Jan 2011	Dec 2010	Nov 2010	Oct 2010
China, Mainland	1134.1	1148.3	1127.0	1173.5	1165.5	1159.8	1152.5	1144.9	1154.1	1154.7	1160.1	1164.1	1175.3
Japan	979.0	956.8	936.6	914.8	921.0	912.4	906.9	907.9	890.3	885.9	882.3	875.9	873.6
United Kingdom 2/	408.4	421.6	397.2	353.4	347.8	345.1	332.5	324.6	295.7	278.1	270.4	242.5	209.0
Oil Exporters 3/	226.2	229.9	236.3	234.4	229.7	230.0	221.5	222.3	218.8	215.5	211.9	204.3	207.8
Brasil	209.1	206.2	210.0	210.0	207.1	211.4	206.9	193.5	194.3	197.6	186.1	189.8	183.0
Carib Bking Ctrs 4/	175.2	172.9	161.2	128.7	145.5	152.6	139.8	155.2	169.8	166.9	168.4	158.8	146.3
Taiwan	150.1	149.3	150.3	154.3	153.4	153.4	154.5	156.1	155.9	157.2	155.1	154.4	154.5
Switzerland	131.7	146.1	147.5	108.4	108.0	108.0	106.1	109.7	109.6	107.4	106.8	106.8	107.6
Hong Kong	110.7	109.0	107.9	111.9	118.4	122.0	122.4	122.1	124.6	128.1	134.2	134.9	135.2
Russia	92.1	94.6	97.1	100.7	110.7	115.2	125.4	127.8	130.5	139.3	151.0	167.3	176.3
Canada	81.5	84.8	82.6	83.5	81.4	87.8	85.0	90.3	90.0	84.3	75.3	75.6	66.1
Luxembourg	72.3	73.7	62.0	61.4	69.0	68.1	78.4	81.1	81.0	83.0	86.4	81.9	78.5
Singapore	63.7	63.5	58.3	63.0	61.7	57.5	60.3	55.7	66.7	57.8	72.9	62.2	66.4
Germany	60.9	58.9	60.2	61.2	62.0	61.2	61.3	59.8	58.3	61.1	60.5	58.6	58.2
Thailand	55.9	55.0	54.5	65.2	62.6	59.8	60.7	57.1	57.6	56.5	52.0	52.2	52.7
France	48.0	43.9	29.0	22.5	22.4	23.6	20.3	17.7	30.2	30.2	15.0	20.1	23.5
Turkey	39.7	39.9	39.2	41.9	41.9	39.3	37.9	36.2	34.3	32.9	28.9	29.1	27.8
Ireland	37.9	34.0	33.6	34.3	36.1	33.5	40.2	44.0	42.0	44.4	45.8	50.0	48.9
Korea, South	37.8	33.6	32.4	29.4	29.9	32.5	30.8	32.5	31.2	31.9	36.2	39.8	39.4
Belgium	36.1	35.8	31.8	31.3	33.6	31.4	31.6	32.2	32.0	32.1	33.2	33.4	33.4
India	35.5	36.5	37.7	37.9	38.9	41.0	42.1	39.8	40.3	40.6	40.5	39.7	40.1
Mexico	26.8	27.1	28.0	29.1	29.2	27.7	26.7	28.1	34.6	34.4	33.6	32.6	34.8
Poland	26.1	27.1	28.7	29.3	28.5	27.9	27.4	28.4	27.3	26.3	25.5	27.2	28.8
Philippines	25.5	25.5	25.1	25.1	22.7	23.8	24.1	23.4	22.7	22.8	20.1	19.2	18.5
Italy	24.2	24.4	23.7	24.3	23.7	25.4	24.5	24.2	24.3	24.6	23.7	23.6	23.7
Netherlands	22.5	23.4	22.6	23.2	23.5	23.7	23.6	25.1	24.9	25.4	22.7	22.1	22.0
Colombia	21.7	21.3	21.0	20.0	20.1	19.9	19.8	20.2	20.1	19.8	20.2	20.3	16.7
Sweden	21.5	21.6	21.3	21.3	21.3	20.9	21.4	21.3	17.7	17.0	16.8	15.2	16.1
Chile	20.7	18.8	19.4	18.0	18.4	18.9	18.6	16.7	16.0	15.0	13.9	13.4	13.4
Norway	19.9	22.6	22.0	17.6	20.4	21.1	21.1	21.4	20.8	19.4	19.6	19.0	18.0
Australia	14.7	13.4	11.6	13.1	13.9	12.3	13.1	10.3	12.6	14.7	14.9	14.9	15.7
Israel	14.7	15.7	18.3	17.2	18.3	19.1	19.3	18.9	19.8	19.9	20.6	20.5	17.9
Malaysia	14.4	13.7	13.4	13.3	12.0	12.7	12.2	11.2	11.3	11.3	11.5	11.7	11.6
All Other	217.3	211.5	214.9	210.9	212.1	215.8	218.7	216.3	212.7	215.4	219.2	230.5	232.1
Grand Total	4656.3	4660.2	4572.6	4484.3	4500.8	4514.8	4487.9	4476.1	4472.0	4451.4	4435.6	4411.4	4373.1

Figure 2. Major Foreign Holders of Treasury Securities U.S. Treasury department, 2011

Bond Rating		Grade	Risk
Moody's	S&P/ Fitch		
Aaa	AAA	Investment	Highest Quality
Aa	AA	Investment	High Quality
A	A	Investment	Strong
Baa	BBB	Investment	Medium Grade
Ba, B	BB, B	Junk	Speculative
Caa/Ca/C	CCC/CC/C	Junk	Highly Speculative
C	D	Junk	In Default

Figure 3. Bond rating of different Credit Rating Agencies, Investopedia.com, 2011

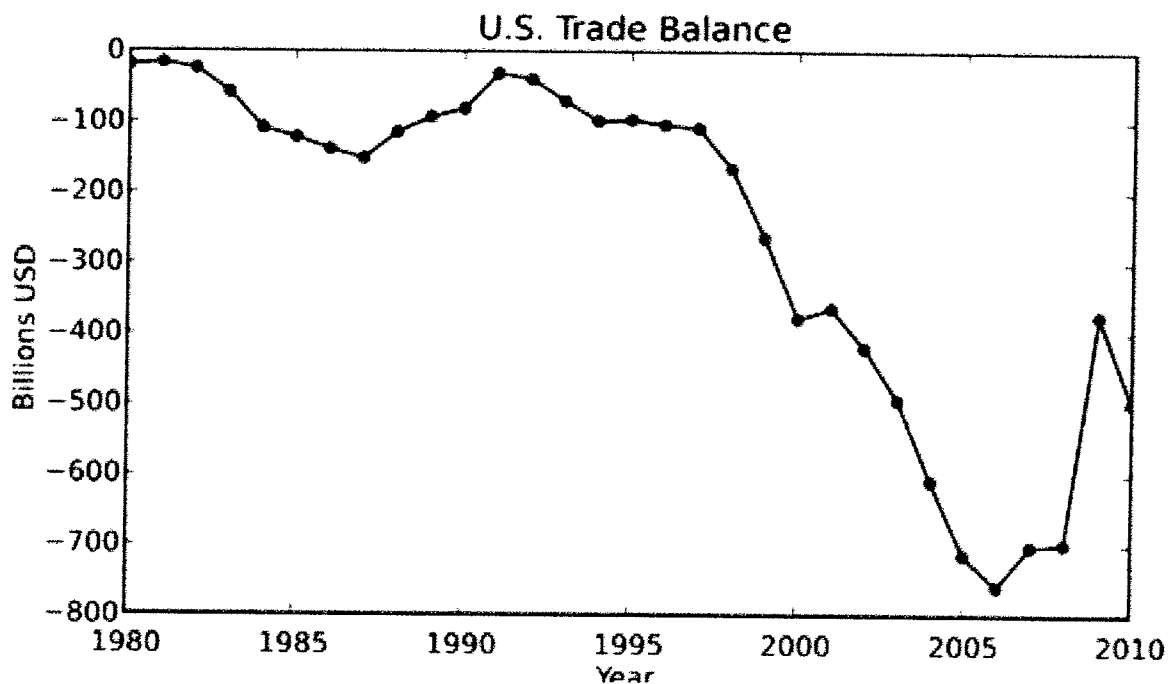


Figure 4. United States Trade Balance, U.S. Census Bureau Foreign Trade Division, 2010

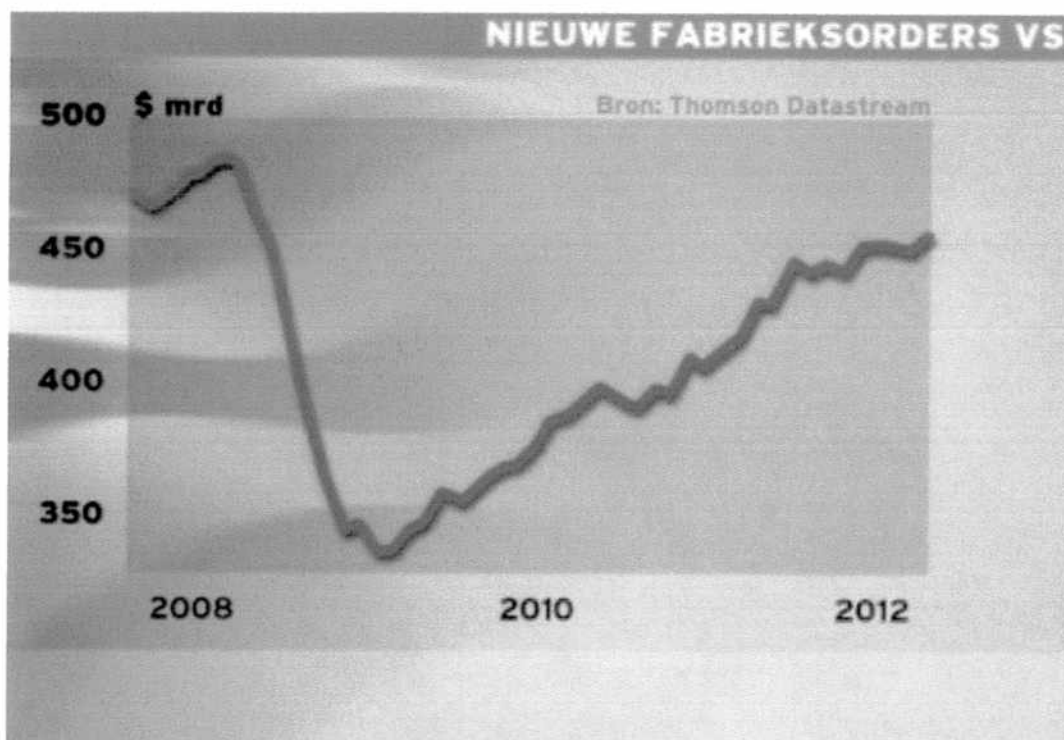


Figure 5. United States Fabric Orders, RTL Z, December 2011

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