

The Myths of the “National Debt” and the “Government Deficit”

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In recent months (early 2012) there has been in the news a repeated, deafening bombardment of assertions about the so called “National Debt”. Almost everything that is being said is idiotic. In addition, similar idiotic statements are being made about the “Government Deficit”.

We will attempt to clarify what we believe to be the reality of the situation.

First of all let’s clarify some terminology. What is the meaning of the word “Nation”? Depending on the context, it usually means a **group of people** (the **citizens** of the nation) or a **geographical area** (the **territory** of the nation). In the context of the US economic data a lot of the information is available not on the basis of the *citizens* of the US, but instead on the basis of the **residents of the territory of the US**, sometimes including the US overseas military. The difference does not really matter for our analysis, so we will refer generically to the **US people**.

There is sometimes confusion in the use of the word “government”. In the US there is one **Federal Government**; there are 50 **State Governments** and some thousands of **Local Governments**. From the political point of view it may be important which level of government does what, but from the overall economic point of view it does not matter which government level raises which taxes and which government level provide which services. Therefore when we will refer to “**Government**”, we will mean the sum total of the three levels of government just mentioned, unless we explicitly distinguish among them.

In the US the Government is perceived as an agency of the people. It performs those functions that the people have chosen to assign to it. The Government **is not the nation**.

The US Nation is the ensemble of the US Government and of the US people.

The “government debt” is not the “national debt”. We will clarify this issue later on.

In order to make our point of view easier to understand we will first consider some hypothetical situations, before getting to the actual situation of interest.

When specific data will be referenced below, it is expressed in constant 2010 dollars and it refers to the situation at the end of the year 2010.

The US as a closed economy

Consider for the moment a hypothetical US Nation that is completely closed from the economical point of view. This means that there are no imports and no exports. Also it means that the US people cannot own any foreign property and that no foreigner can own any US property.

This US nation has US located **real assets** valued at 40 trillion dollars. By “real assets” we mean land, buildings, machinery, etc. Of these assets, 10 trillion dollars are owned by the US Government and 30 trillion by the US people directly. The US GDP is 15 trillion dollars, which translates into a people’s income of approximately 14 trillion dollars (the difference is mainly due to the cost of replacing consumed

assets). The Government raises 4 trillion dollars in taxes and we assume for the time being that it has a perfectly balanced budget, spending exactly 4 trillion dollars to provide its services. The people are left with 10 trillion dollars of **disposable income**, which they can use for consumption and investment. We assume that the Government has no debt. The situation is summarized below:

People's real assets	30.0
Government real assets	10.0
Nation net worth	40.0
Total GDP	15.0
Gross income	14.0
Taxes	-4.0
Disposable income	10.0
Government tax income	4.0
Government expenses	-4.0
Government budget balance	0.0

Everybody is happy. Well, not everybody. There always be some people that would prefer to pay less taxes (and get fewer government services) while other people may prefer to get more government services (and of course pay more taxes, particularly if they can get somebody else to pay them). But from the strictly *financial* point of view, everybody is happy.

Now let's modify the situation a little. Let's suppose that in times past the Government has ran considerable deficits and has therefore accumulated a debt of about 12 trillion dollars. This means that the Government has had to issue 12 trillion dollars of Treasury bonds. Since the economy is closed, the US people are the ones that own all of the 12 trillion dollars in bonds. This means that the **net worth of the Government** is *minus* 2 trillion dollars (10 minus 12) while the **net worth of the people** is 42 trillion dollars (30 plus 12). The **net worth of the nation** is 40 trillion dollars, just as before. It should be noted that while the *government debt* is 12 trillion dollars, the people have an *aggregate credit* of 12 trillion dollars, therefore the *national debt*, i.e. the combined debt of the government and of the people, is exactly zero. To service its debt we assume that the Government must pay every year 5% interest, i.e. a total of 0.6 trillion dollars. We assume that the Government wants to maintain a balanced budget, therefore it has to raise an additional 0.6 trillion dollars in taxes. But now the people's income is 14.6 trillion dollars, i.e. the previously 14 trillion dollars derived from the economic activities, plus the 0.6 trillion that it receives in interest income from the Government. Therefore, after paying the new total of 4.6 trillion dollars, the people are left with exactly the same 10 trillion dollars they had before. In summary:

People's real assets	30.0
People's money assets	12.0
Government real assets	10.0
Government money assets	-12.0
Nation net worth	40.0
Total GDP	15.0
Gross income	14.6
Taxes	-4.6
Disposable income	10.0
Government tax income	4.6
Government expenses	-4.6
Government budget balance	0.0

Therefore there is no difference from the previous case. It should be noted that the above arithmetic works for **any** amount of Government debt. If the Government debt were to be 100 trillion dollars, it would not make any difference. Therefore we can conclude that in a closed economy

**the Government debt has no direct effect
on the overall underlying economy**

It is often said that by allowing the Government to be in debt we are “burdening” future generations with the responsibility for such debt. I cannot understand how such idiocy can be asserted. In a closed economy future generations will inherit both the *government debt* and the Treasury bonds which represent the *corresponding credit*. So the effect of the debt will be null for them as it is for the current generation.

Now let’s modify the situation a little further. Let’s consider the case that the Government is not so keen on a balanced budget, but it may consider a budget deficit. When talking about government budget deficits, it is common to say that the problem is that the government spends more money than it gets as income and it is therefore “financially irresponsible”. An analogy is often made between the US Government and a “private family”. The analogy is totally wrong. A typical family has a given income, derived in most cases by the work of one or two members of the family. Out of that income the family will pay some taxes. What is left is the “disposable income”. A responsible family will develop a “budget” that will allow for some fraction of that disposable income to be used to pay for its consumption needs and the remainder to be saved in order to build a nest egg. A family that spends more than it earns will build a debt that eventually will have to be paid off. It cannot continue to spend more than its disposable income on a permanent basis.

Some people claim that the Government should behave like a responsible family. I believe that this is totally misleading. **The Government does not have a predetermined income.** For the Government the budget procedure is exactly the opposite of that of a family. **It is the spending that it is decided first.** The level of spending is determined by the desires of various politically influential groups to have the Government provide certain services. Some groups may want a strong defense establishment, some other groups want to guarantee a safety net for indigent or disadvantaged people, some other groups want to establish and enforce strict environmental standards, and so on. Many of these desires are popular with the electorate. Therefore eventually laws are passed establishing certain Government services which imply certain expenditures. When the time comes to finance the total of such expenses a new set of issues arises. Everybody wants to pay the least possible taxes, however it is perfectly happy to see *other people* pay more taxes. Voting for additional taxes is not politically desirable for an elected representative; therefore it is easier to allow for deficit financing. In other words, the issue is that *the spending is predetermined* and the choice which is left is on how to *finance* such expenditures. There are basically three ways to do it: by taxes, by issuing bonds or by printing money. In the case of the US the latter option is considered officially unacceptable under normal conditions. So the choice is between raising taxes and issuing bonds. Let’s see what the difference really is between the latter two.

So let’s go back to our example. Let’s assume that the Government decides that it does not want to raise taxes to 4.6 trillion dollars, but that instead it decides to *reduce* taxes to 3.6 trillion dollars and to issue bonds for the needed additional 1 trillion dollars. We have the following situation: the people have an income (including interest on the debt) of 14.6 trillion dollars. After taxes they now have 11 trillion dollars left. However, they *must* buy 1 trillion dollars’ worth of bonds. After paying for that, they are left again with 10 trillion dollars to be used for both investing and consumption. So we are back to the same situation. When the people pay taxes they get (at least in principle) a “thank you” note from the government. When people buy bonds, they get a piece of paper (the bond) saying that the government owes them some money. But the money they send the government is the same.

People's real assets	30.0
People's money assets	12.0
Government real assets	10.0
Government money assets	-12.0
Nation net worth	40.0
Total GDP	15.0
Gross income	14.6
Taxes	-3.6
Net income	11.0
Purchase of bonds	-1.0
Disposable income	10.0
Government tax income	3.6
Government expenses	-4.6
Government budget balance	-1.0
Government bond income	1.0
Government cash balance	0.0

There is however one difference, namely the following year the government will have a debt of 13 trillion dollars. This will mean that the people income will be increased by another 50 billion dollars of interest to 14.65 trillion, but that they will have to send the government, by taxes or bond purchases 4.65 trillion dollars, ending back up in the same place.

Lets' consider now the opposite situation, i.e. the Government decides to pay off some of the debt by raising taxes, i.e. producing a budget *surplus*. Let's say it raises taxes to 5.6 trillion dollars in order to buy back 1 trillion dollars' worth of bonds. After paying taxes, the people will now be left with only 9 trillion dollars (14.6 minus 5.6). However they will get a 1 trillion dollar cash back payment from the government, paying off the bonds.

People's real assets	30.0
People's money assets	12.0
Government real assets	10.0
Government money assets	-12.0
Nation net worth	40.0
Total GDP	15.0
Gross income	14.6
Taxes	-5.6
Net income	9.0
Income from bonds	1.0
Disposable income	10.0
Government tax income	5.6
Government expenses	-4.6
Government budget balance	1.0
Government bond payment	-1.0
Government cash balance	0.0

Therefore their disposable income will be again 10 trillion dollars. The difference is that the following year the government debt will be 11 trillion dollars. This will mean that the people income will be lowered to 14.55 trillion dollars and that they will have to pay only 4.55 trillion dollars in taxes or bonds, again leaving them the same 10 trillion dollars.

But wait a moment, you say; in this way the US people are “consuming” part of what was their “financial asset”, namely the money that they had “invested” in the treasury bonds. Surely that must be bad! The issue here is that what may be true for an individual person it may not be true for the whole of the people, as a community. Treasury bonds may be seen as an investment by an individual, since they provide (in our example) a steady 5% interest, like many other investments might. Somebody must be paying additional taxes so that the investor may get its money, but that somebody is probably somebody else, so the individual owner of the Treasury bonds does not care. However, when we look at the situation from the point of view of the entire community, the situation is quite different. It is true that the whole of the people receive a certain amount of interest, but that interest is paid by the entire community through extra taxes. To the community as a whole, the existence of Treasury bonds has no net financial effect. Therefore:

**from the point of view of the people as a whole,
Treasury bonds are NOT an investment**

A different way to put it is that Treasury bonds represent a loan that the people make to themselves, essentially moving money from one pocket to another.

In summary in a closed economy:

**the Government debt and budget balance (either deficit or surplus)
have no direct effect on the overall underlying economy**

In the above bold statements (both in content and in text) we have underlined the word “overall”. That is where the rub is. While in all the circumstances we looked at, there is no change *in the aggregate*, it does not mean that there are not different implications for different people. In all cases there will be people who gain some and people who lose some. But this is inherent in *any* government activity. It will be very unusual to find anyone who gets back from the government in services exactly the value that it pays in taxes. In almost all cases some people will pay more in taxes than the value of the services they receive from government while for some people the opposite will be true. Most commonly, the higher income people will pay more taxes and receive fewer services, while the low income people will pay less in taxes and receive more in services.

In the previous statements we have also underlined the word “direct”. The reason is that while our assertions are correct at the first level of analysis, there is an issue of possibly *indirect* effects that might be of significance. We will look at some of these issues after we have looked more carefully to the actual case for the US economy.

The actual US economy

Let’s now look at the actual situation for the US. In the real world the US coexists with many other countries. For our discussion, from the pure economic point of view, it is of no interest which specific country is involved in which specific transaction. We may look at all of the foreign countries as a single entity, the “**rest-of-the-world**”. We will refer to such entity as the **ROW**.

The US imports goods and services from the ROW and exports goods and services to the ROW. In addition, some US people own some assets physically located in the ROW’ territory and ROW people own some assets physically located in the US territory. Finally, the US people may own bonds issued by ROW authorities, while ROW people may own bonds issued by US authorities. Unfortunately, most data regarding international transactions are only imprecisely known. Furthermore, the evaluation of assets actual values in US dollars is subject to changes in the exchange rates of the various currencies. The

number that we are using below are believed to be a fairly good estimate, but should not be viewed as absolutely exact. However, for the purpose of our argument, absolute accuracy is not required.

The first thing is that we have to clarify what is the **US Nation Net Worth**. We start by adding in the value of all real assets situated in the US territory. However some of those assets are owned by foreigners. On the other hand, the US government and the US people own some of the ROW real assets. So we have to subtract the value of the assets owned by foreigners and add the value of the foreign real assets owned by the US nation. This defines the overall net value of the real assets owned by the US nation.

Now we have to look at *money assets* owned or owed by the US government and the US people. Such money assets come in the form of bonds, loans and other money financial instruments. For simplicity we will refer to them all as “bonds”. The ROW may own some of the US issued bonds, but also the US may own some of bonds issued by the ROW. The numbers are as follows (in trillions of US dollars), at the end of 2009:

	US Government	US People	US Nation
US located real assets	9.0	29.8	38.8
US assets owned by the ROW	0.0	-14.3	-14.3
ROW assets owned by US people	0.0	19.0	19.0
Real assets	9.0	34.5	43.5
US bonds net position	-10.4	2.2	-8.2
ROW bonds net position	0.2	2.8	3.0
Net worth	-1.2	39.5	38.3

In the above table we have added under the heading of “US people” both the assets of the US households and of the US business sector. Note that the Government has a debt higher than the value of its assets, i.e. the US Government has a **negative net worth**, or, to use a recently popular expression, is “under water”. About 8.2 trillion dollars of the US debt is held by the ROW. However, the US Government and the US people own together 3.0 trillion dollars of ROW debt. Totaling up the assets and money positions we have:

	US Government	US People	US Nation
Total assets	9.0	34.5	43.5
Net bonds position	-10.2	5.0	-5.2
Net worth	-1.2	39.5	38.3

The US nation owns real assets for a total value of 43.5 trillion dollars. However, against such assets it has a net debt of 5.2 trillion dollars. The net worth of the US Nation is 38.3 trillion dollars.

The net debt of the US nation toward the ROW is the true “national debt”

It should be noted that the 5.2 trillion dollars that the US owes to the ROW does not consist all of government debt. There are also US *private bonds* in the total amount of about 2.9 trillion dollars, some of which are held by US private owners and some of which are held by the ROW. The combined value of ROW owned government and commercial bonds is however 5.2 trillion dollars.

We need here to open an important parenthesis. Of the total US Government debt, 8.9 trillion dollars are due to the federal Government, while 1.5 trillion dollars are due to the State and Local Governments. How come that the debt numbers which are usually mentioned for the Federal Government are in the range of 13 trillion? The reason is that the total value of bonds *issued* is indeed in the neighborhood of 13 trillion. However, about 4 trillion of those bonds are actually owned by the US Federal government itself (mostly by the US Federal Reserve)! In other words, about 4 trillion dollars appear twice in the federal government assets and liabilities budget: once as a “debt” (because of the issuance of the Treasury bonds) and once more as a “credit”, because the Treasury bonds are held by the Government itself. The **net** Federal Government debt is, as stated above about 8.9 trillion dollars.

To service the national debt of 5.2 trillion dollars, the US nation pays to the ROW about 150 billion dollars a year, corresponding to an average interest of 2.9%. The 150 billion dollars represent 1.2% of the US Net National Product of 13.4 trillion dollars,

The portion of the government debt that is held by the US people is in the same situation as what we have described in the section on the hypothetical “closed economy US”, i.e. it is essentially irrelevant. What really counts, is the net total that the US nation owes to the ROW and that is, as stated above, about 5.2 trillion dollars.

How bad is that? To make it more comprehensible we can draw an analogy with an individual home owner. The situation of the US nation is about equivalent to a person owning a home valued at about 435,000 dollars and having a mortgage of about 52,000 dollars. To service the debt the person is paying 1.500 dollars of interest a year, out of a gross annual income of about 134,000 dollars. I do not think that there would be a single person that would consider that home owner as “financially overexposed”.

Historical data

As we mentioned before, there is a valid question about possible *indirect* effects of the Government debt and budget deficits on the economy. In order to look into this we must first identify what are the key variables that *define* “the economy”.

There is often confusion between the **real economy**, i.e. the goods and services produced and consumed by the people, and the **money economy**, i.e. the flow of money instruments among the people. The people’s **current standard of living** is determined by their current consumption of goods and services. The people’s **future standard of living** is determined essentially by the current value of real assets plus any additions to that total (or subtractions from it). The best measure of the *total* production of goods and services relevant to the US national economy is the **US Net National Product (NNP)** which consists of the **total US consumption** plus the **net change in US Net Worth**, which is the true estimate of the **US net investments**. Our data is based on the US economy in the period 1950-2010.

Fig. 1 shows the relation between the government *budget balance* (relative to GDP) and the change in the Net National Product. The data shows a minor positive correlation, indicating that a high deficit could be correlated with a reduction in the NNP. In the last two years, 2008 and 2009, the Government has had an exceptional high deficit, due in large part to the financial bailout costs and the cost of the economic stimulus. If we take out the data from the last 2 years, 2008 and 2009, the data in Fig. 2 shows a perfectly flat trendline, indicating lack of correlation. The “traditional” view is that a Government budget deficit would contribute to “pump up” the economy, possibly leading to an increase in NNP. The reason why this is apparently the case may be very simple. The “traditional view” was based on the assumption that the deficit was financed by “printing money”, therefore introducing more money into the economy. In the US, the deficits are generally financed by selling treasury bonds. This means that no additional money is actually introduced in the economy, as we have discussed earlier.

Fig. 1 Change in Net National Product vs. Government Budget Balance relative to GDP (1950-2010)

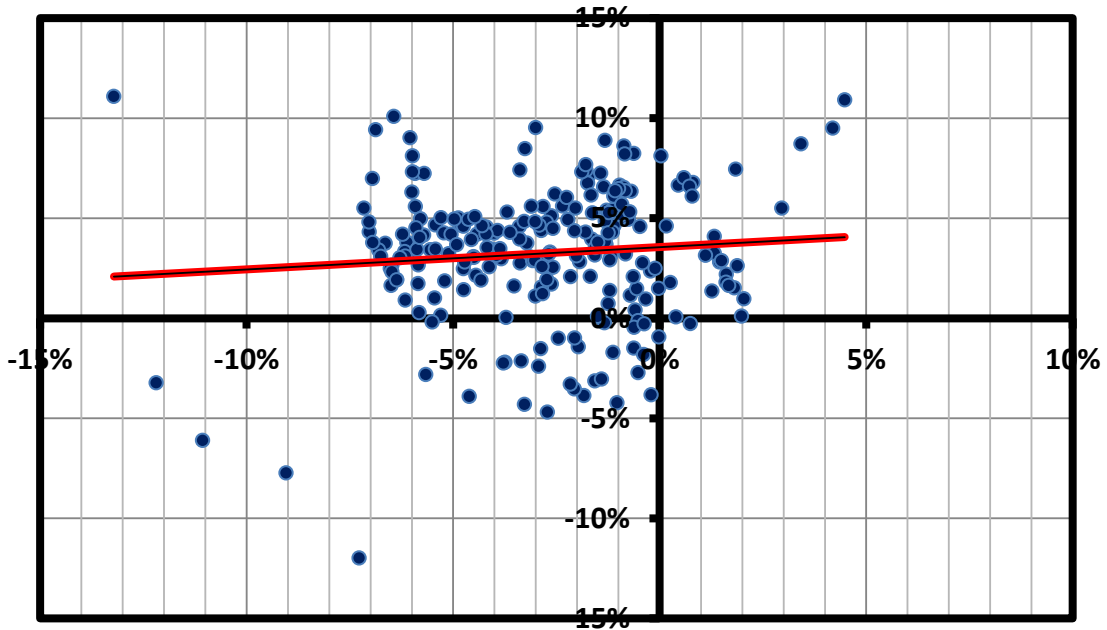


Fig. 2 Change in Net National Product vs. Government Budget Balance relative to GDP (1950-2007)

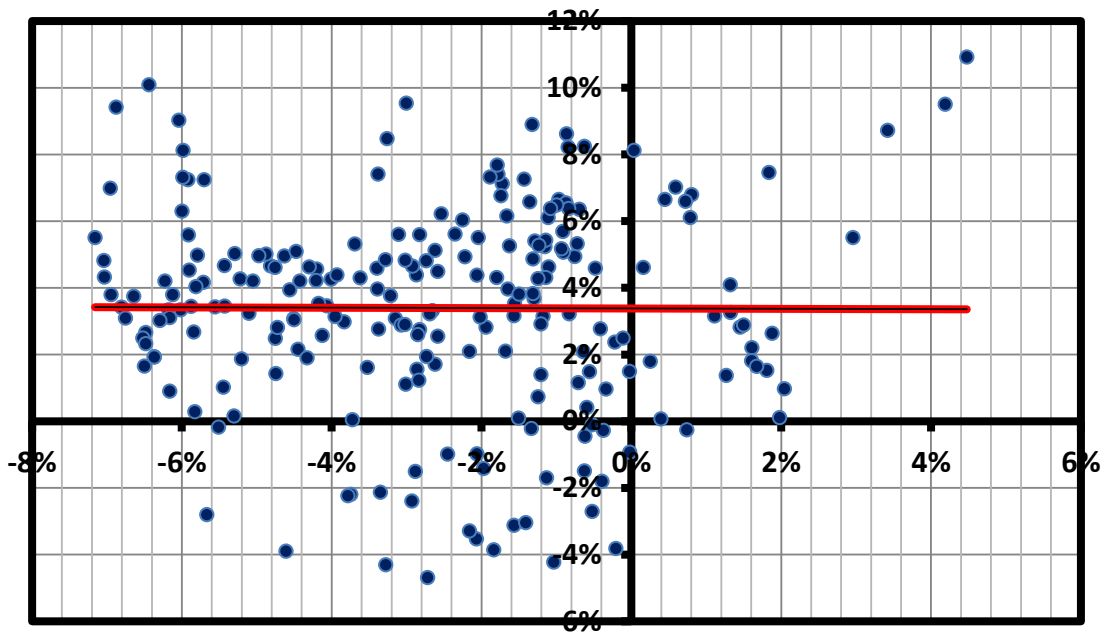
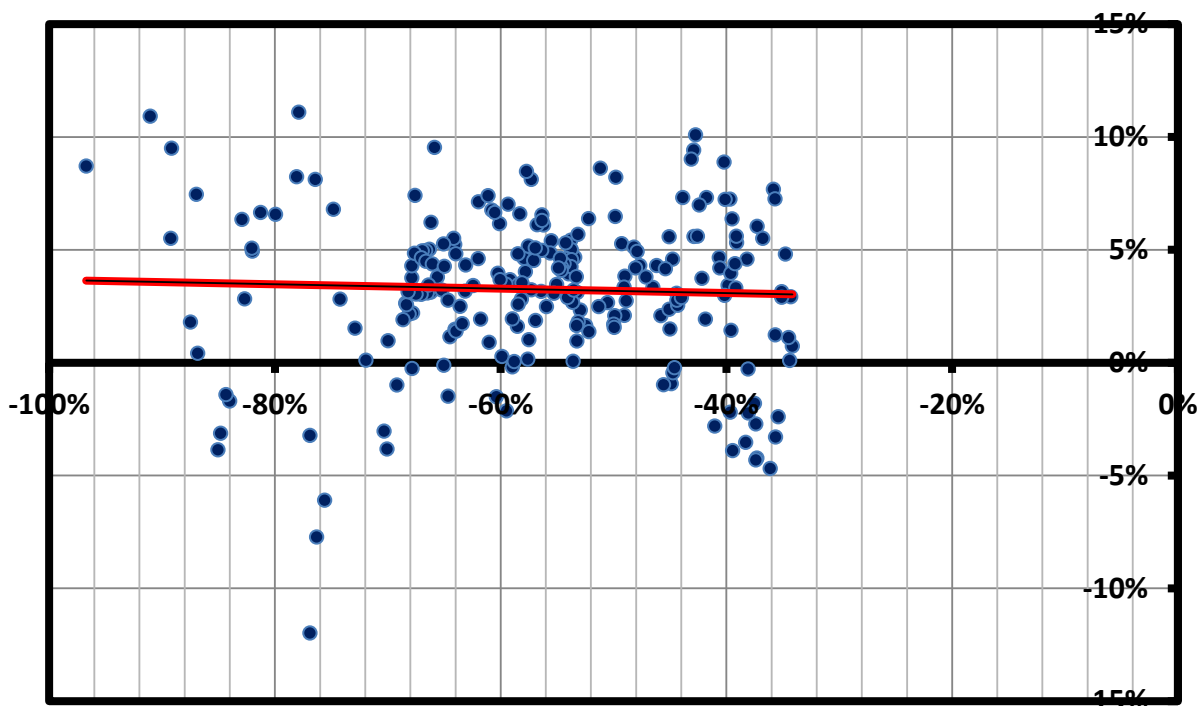


Fig 3 shows the relation between the government *debt* and the NNP. Again it shows no significant correlation. I believe that we can safely conclude that

the Government budget balance and the Government debt have no practical effect on the Net National Product

Fig. 3 Relative Change In Net National Product vs Government Debt
(Relative to NNP)



In other words, the **total net aggregate** of the goods and services produced by the US economy is unaffected by the Government financing strategy.

There is however a real problem and we are going to discuss it in the next section.

The real problem

As we have already mentioned, the **US Net National Product** characterizes the total net production of goods and services which are available to the US nation in any given year. A slightly different, but interesting statistic is the **US Net National structural Product (NNSP)** which consists of the NNP *minus* the contribution due to the net income or expense due to the net interests paid to (or received from) the ROW. In other words, the NNSP measures the actual net production of the US economy, before taking into account the income or payments due to past positive or negative money financial position.

The **US Net Worth**, as discussed earlier, measures the net aggregate real and financial assets of the US. However, from the point of view of overall national production of goods and services what it really counts is the **US Net Real Assets**, i.e. the US Net Worth *minus* the net contribution of the financial money assets.

Fig. 4 shows the history of the US NNSP and the US Net Real Assets, with the two variables measured on the two different vertical axis. Quite clearly the two variables are highly correlated. Fig. 5 shows the value of the NNSP relative to the net real assets, showing that the NNSP has been equal to about one third of the value of the net real assets (more precisely, 31.8% on average).

Fig. 4 Net Real Assets and NNSP

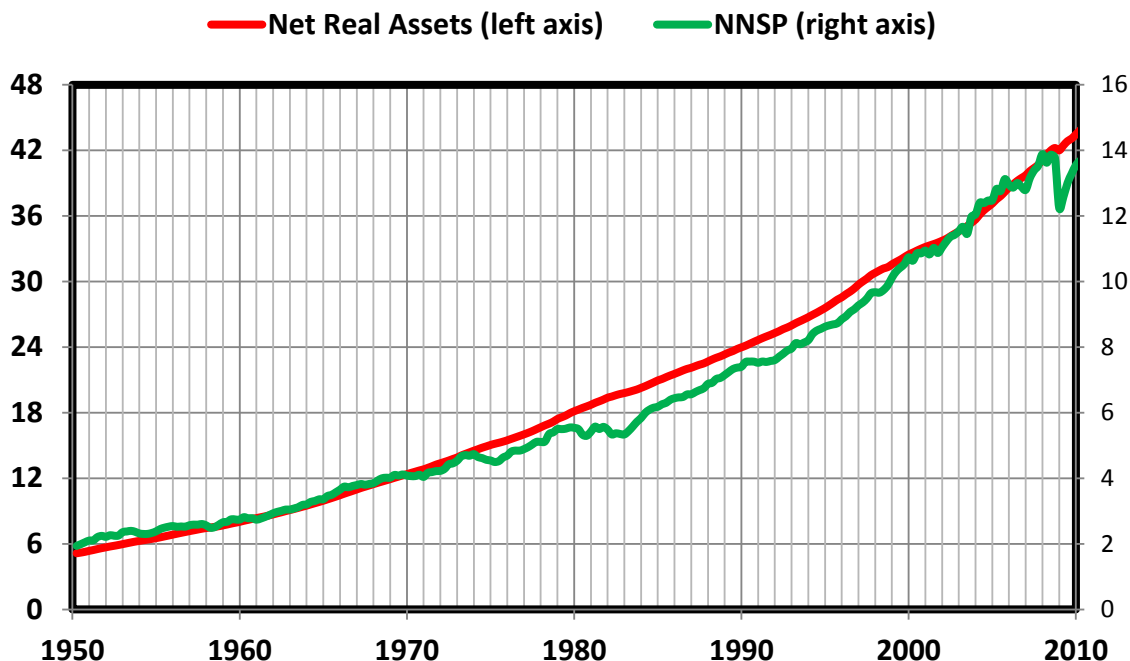
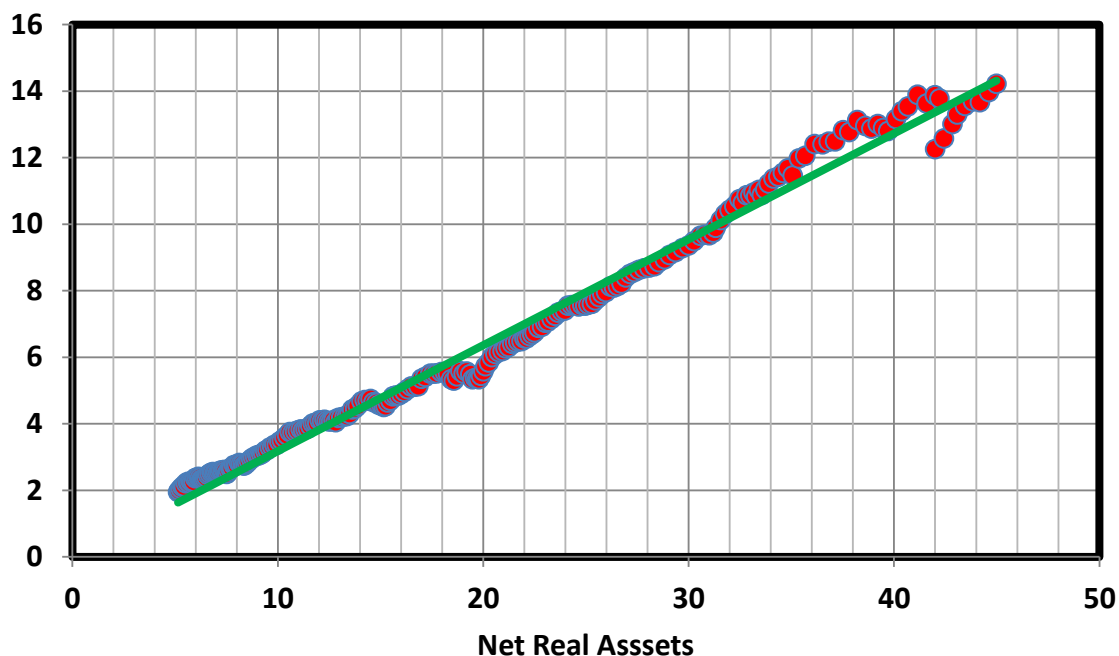


Fig. 5 Relation between NNSP and Net Real Assets



In other words, the US NNSP in any given year is primarily determined by the US Net Real Assets and for every dollar of real assets we get approximately 32 cents of NNSP or an overall net return on investment of 32%. Of course there are minor deviations from this general rule. These deviations are due to the actual effectiveness with which the real assets of the US nation are utilized. This, in turn, is largely due to the level of employment. In particular, during the 2008 recession, while the value of the Net Real Assets

increased, the sharp drop in employment led to a considerable drop in the actual utilization of the assets and therefore to a considerable drop in NNSP. However, the overall trend is quite obvious. The relationship entails that future increases in the US NNSP will be largely determined by the increase in US Net Real Assets, i.e. by the **net real investments** by the US nation.

Fig. 6 US Net Real Investments

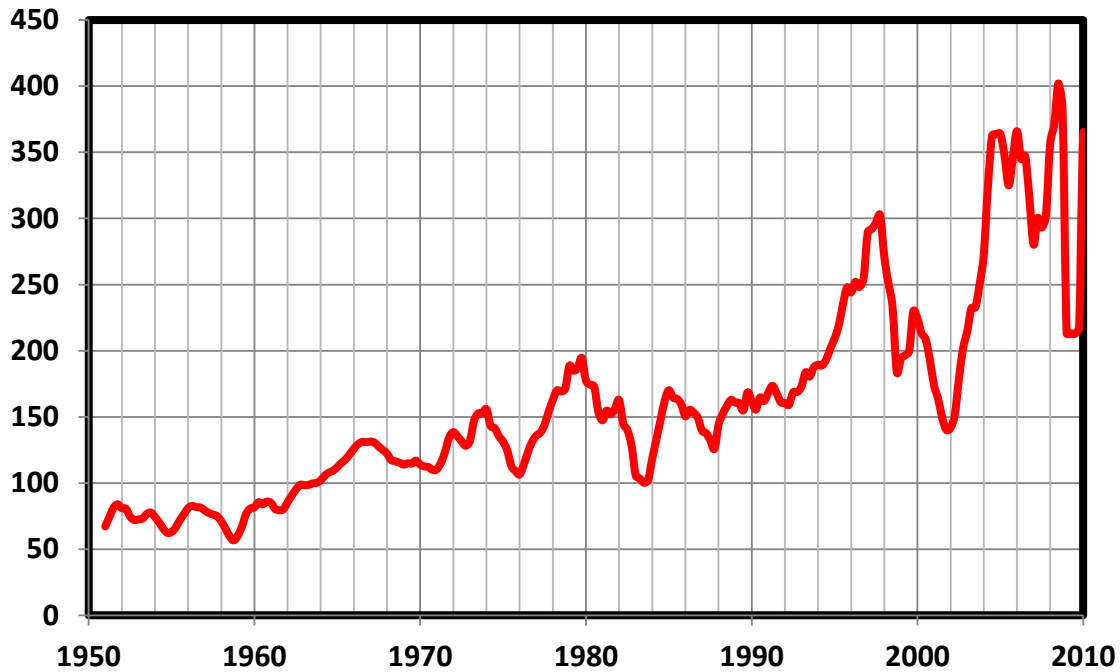
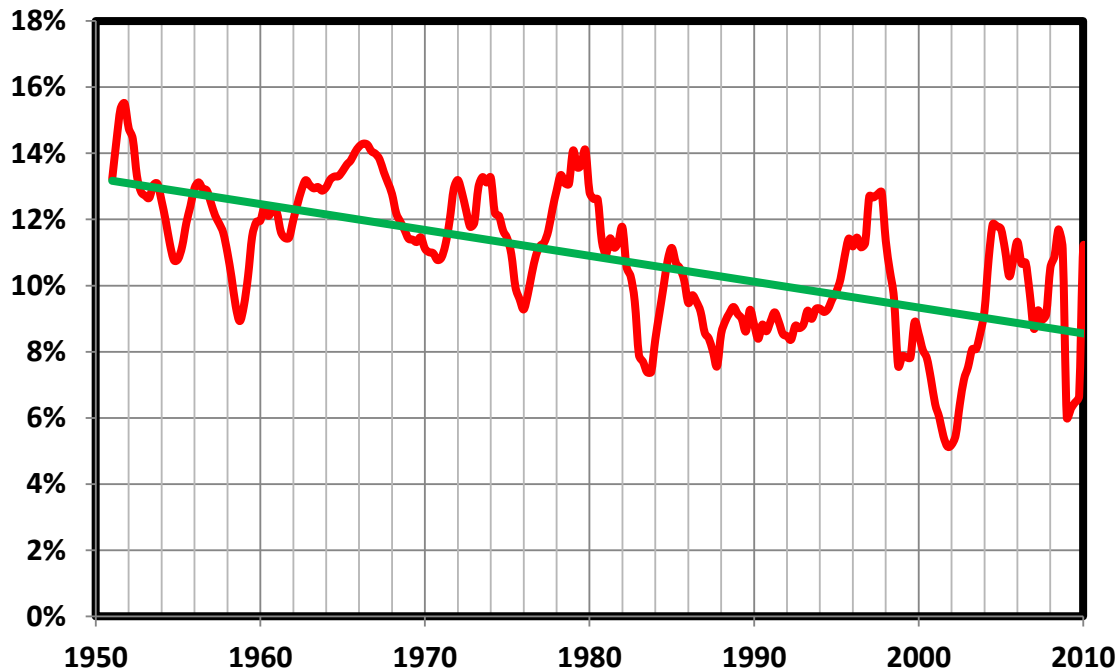


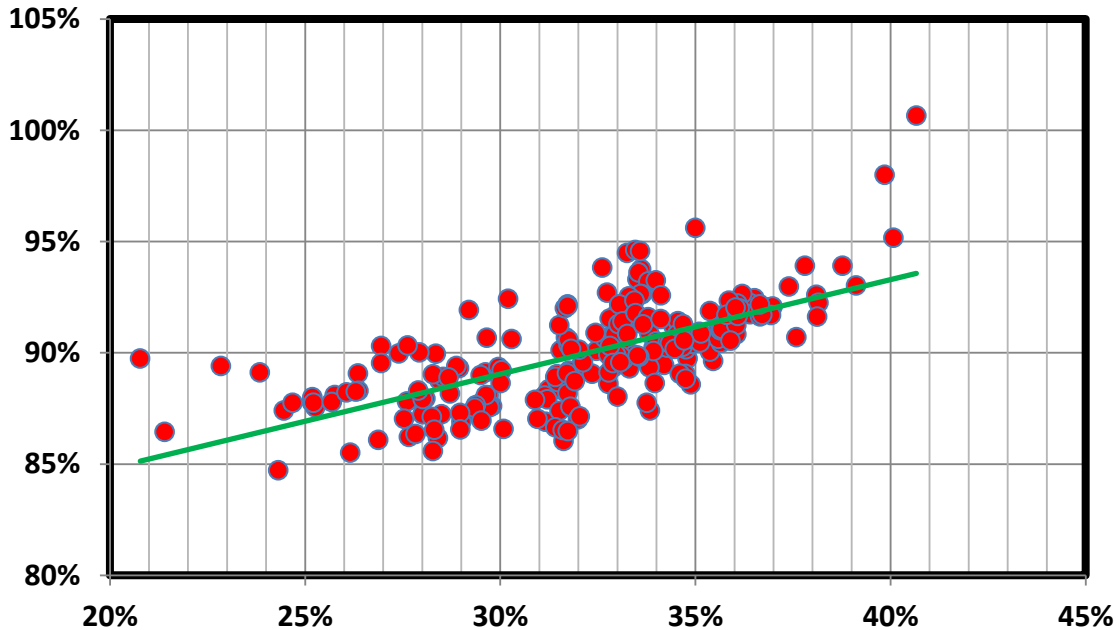
Fig. 6 shows the history of US net real investments in the last 60 years. It shows that the US has achieved positive net investments every year, even in the presence of the deep recession of 2008.

Fig. 7 Net Real Assets Investments relative to NNSP

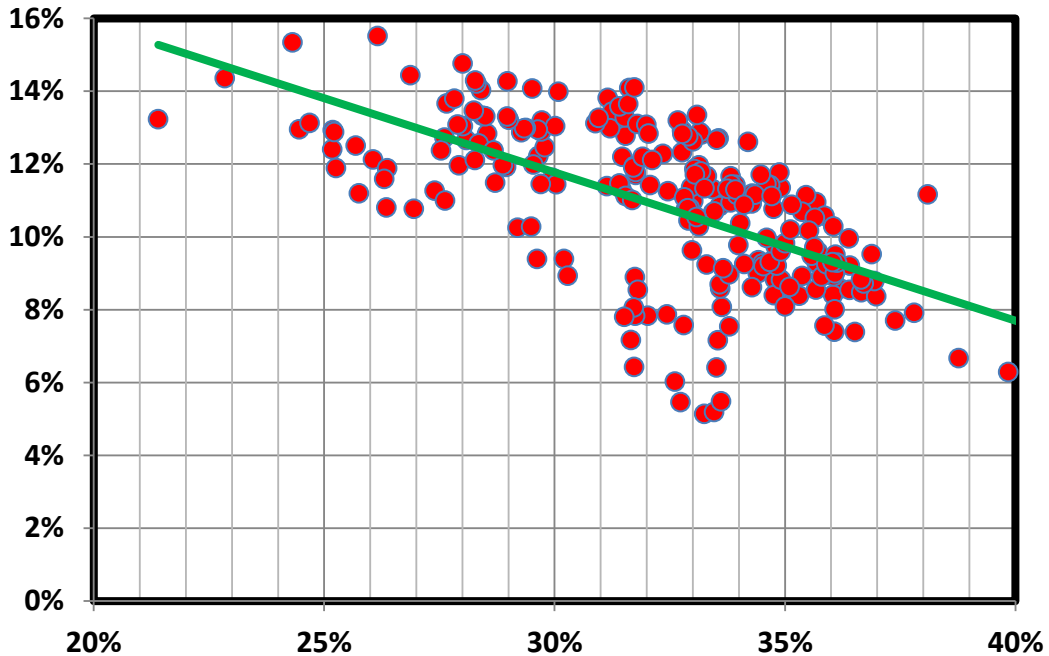


However, Fig 7 gives us a different view of the situation. It shows the net investments as a percentage of the NNSP. The **rate of investments** has been decreasing constantly, from about 13% in the 1950's to about 8.5% in 2000's. This means that the net worth of the US has been increasing more slowly than in the past and that therefore the net national product has been increasing more slowly than in the past.

**Fig. 8 Total Consumption (relative to NNSP)
vs. Total Government Expenses (relative to NNSP)**



**Fig.9 Net Real Investments (relative to NNSP) vs.
Total Government Expense (relative to NNSP)**



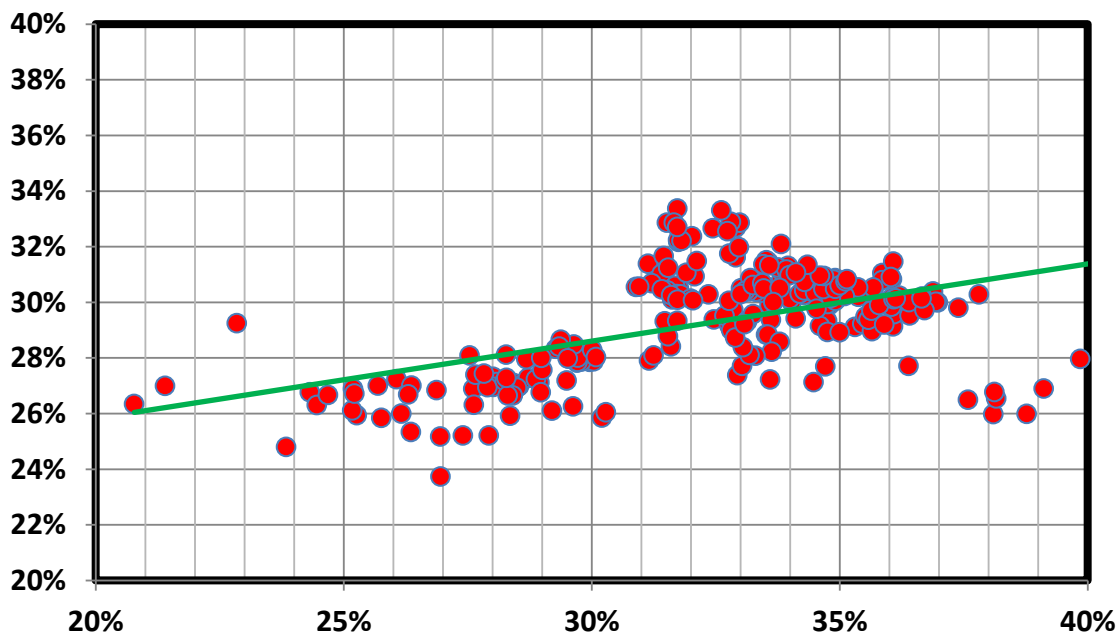
Let's now look at the US Government activities. In Fig. 8 we show the relation between the Total US Government Expenses and the US Total Consumption, both relative to the NNP. It shows that as the

Government expenses grow as a fraction of NNP, the overall fraction of NNP devoted to consumption also grows and therefore the fraction of NNP which is invested obviously decreases.

This is shown more clearly in Fig. 9 which shows the same information, but now plotting the net investment rate vs. the total Government Expenses. For every 1% of increase in the ratio between the total government expenses and the net national product we have, on average, a decrease in of 0.5% in the rate of net investment. This is not good.

There is nothing fundamentally wrong with increasing the ratio of government expenses to the net national product. It is true that this is anathema to many people, but this is a *political* choice that the US people are free to make, if they so choose. The problem is that if the increase in the government role means an *increase* in the government portion of the total consumption, there must be a corresponding *decrease* in private consumption, if we want to maintain a given rate of investment. Clearly this has not been happening.

**Fig.10 Total Taxes (relative to NNSP)
vs. Total Government Expenses (relative to NNSP)**



To clarify the issue we need to look in more detail to the government finances. In Fig. 10 we show the relationship between the Total Taxes paid to the Government and the Government expenses, always relative to the NNP. It shows that on average total taxes have been growing much more slowly than government expenses. On average, in the last 60 years, US taxes have grown by about 0.25% for every 1% increase in total expenses. This has obviously led to increasing deficits.

In the first section of this paper we have argued that it did not really matter *in a closed economy*, if the government chooses to finance expense with taxes or debt, since in both cases the same amount of money is taken out of the pockets of the people. However, **this is not true if the US can sell bonds to the ROW**. In this case the ROW is contributing part of the money, not the US people. This is exactly what has happened.

There is nothing wrong in borrowing money. Actually borrowing money *to increase investments*, it is a very good thing to do. The nation would pay about 3% per year in interests, but the net national product would increase by 32%, with a net gain of 29%! The problem is that the US has used the borrowed money **to increase its current consumption** (therefore increasing its current standard of living), at the expense of **reducing its rate of investment** (therefore reducing the future potential growth in the standard of living).

To summarize the situation it appears that the following steps have taken place:

- the people have chosen to increase the services provided by the government;
- the increase in government services has led to an increase in government expenses;
- the increase in taxes paid to the government has not kept up with the increase in expenses;
- this has led to government deficits, financed by treasury bonds;
- a substantial portion of these bonds have been sold to the rest of the world;
- leaving the corresponding amount of money in the pockets of the US people;
- the US people have used that money for additional consumption;
- therefore reducing the rate of net investments in new assets;
- therefore reducing the rate of increase in net real assets;
- therefore reducing the future increase in net national product.

In summary:

the US nation has been consuming too much and investing too little

and this is not good. The solution to this problem is not going to be very popular, but it is beyond the scope of this paper.

If you have any comments, please mailto: cesare@neosophist.us .