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Debts should come with a serious economic health warning!

By

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16th July 2015

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Introduction

The transfer of savings from one household to another creates a financial relationship between these households. Nearly always conditions of reward and repayment are attached to such a transfer. In a world where savings have grown to a multiple of annual economic output, the chances that debts can cause economic stagnation and major unemployment situations have risen strongly. This can both be on a national as well as on an international level.

Debts can help households and governments to increase their spending power, but there is always a “cost”. Future income levels are needed to repay the debts. What is surprising is that economists have had such great difficulty in predicting when debts turn from a sound base into a threat to economic growth levels. Waiting till a crash happens as in 2007-2008 does not seem to be a very sensible manner in running an economy. What is also surprising is how little power individual households have over the level of debts for which they carry the ultimate repayment responsibility, including government debt levels.

Growing debt levels need to be analyzed extensively; but studying developments is not enough if brakes cannot or are not applied to stem a rapid growth in debt accumulation.

Furthermore the structure of adding to debt levels has to be studied. The collective of banks rather than an individual bank in the U.S. created the home mortgage lending boom in the run up to 2007. Capital markets assisted in funding such loans. Democratically elected governments can authorize excess levels of borrowings, which can bring the economy of a whole country down. The extensive use of debt funding for company mergers and acquisitions is another example of loading more debt to the company sector, which can cause further economic disruptions. Finally the international use of especially the U.S. dollar for borrowing purposes may pose its own threat to international economic growth levels.

This paper focuses on the U.S. situation, especially from 1997 to today. This paper will conclude that the “debt problem” started with U.S. individual households in taking up excessive mortgages from as early as 1998. Alarm bells should have started ringing in 2002, when the mortgage debt allocations between building new homes and pushing up home prices in excess of income growth shifted to the latter. In 2002 62% of new funds was used for funding house price increases in excess of income growth. This trend continued all the way to 2007.

Another conclusion is that the U.S. government debt problems accelerated from 2009 onwards. It seems that the drop in taxes received was the main cause of the increased debt levels. Government debt problems followed the home mortgage crash.

The cash injections from central banks after 2008 added to the world savings levels, which were already at high levels. The financial crisis of 2007-2008 was a finance-induced crisis. It was different from the oil price crisis of 1973, which caused savings to flow to oil-producing nations.

1. Debt as a positive and a negative force

1.1 Characteristics of debt

Debts are incurred to add to income levels for both a government and for individual households. Companies borrow for a totally different purpose: they aim to create an income with the money obtained from others. Companies obtain outside funds either in the form of equity or in loans.

Banks, as the distributors of people's savings, should not be equated to ordinary companies. Their objectives might seem similar in trying to make a profit, but the effects of their actions are very different. Banks and the financial markets collectively decide who and how much debt governments, individual households and companies can take on. The competition element among banks and the misjudgments of risks can easily lead to the wrong volume of debt being granted to governments, individual households individually and collectively and to companies. The run up to the 2007-2008 financial crisis clearly showed that the banking sector, particularly in the U.S., but also in some other countries like in Spain and in the U.K., played the key role in collectively increasing the volume of home mortgage loans far in excess of what individual households could absorb. Since then banks have gone through all kinds of stress tests. They have been hit with multiple fines by financial sector regulators and have subsequently adjusted balance sheets and risk taking.

The IMF¹ has recently made an analysis of institutions other than banks that provide debt funds to the markets: the conventional asset managers. The latter savings levels were estimated to have reached over \$75 trillion, which is equal to about 100% of world GDP. These asset managers have, among others as a consequence of quantitative easing by central banks, been buying up, governments, companies and even individual household debts in the world's bond markets. In this manner credit intermediation has shifted from the banking to the non-banking sector.

What the experience of the past twenty years has shown is that the supply of funds is growing irrespective of the income earning capacities of both individual households and of governments. To enter into debts has been made easier and easier. The supply side -supported by quantitative easing programs of central banks in all major countries- has grown dramatically, but the income earning side has been unable to follow. The challenge for the future is how to manage to keep the supply of funds and income growth in balance.

Debts should always be related to the income earning capacity of each type of household. For companies, debts and equity are a means to create an income. For governments and individual households debts are a means to enjoy more consumption.

¹ <http://www.imf.org/external/pubs/ft/survey/so/2015/POL040815B.htm>

Companies can make mistakes in estimating the demand level for their products. Their ultimate penalty is that they can go bankrupt and disappear. Governments and individual households do not disappear, but they certainly suffer the consequences of the wrong levels of debt.

A debt crisis can occur due to excess borrowing levels of a government over a period of time. Excess should be defined as borrowing levels growing faster than GDP levels. Individual households borrowing more than they can support out of their income levels can also cause a debt crisis. The key in understanding debts accumulation is that a “crisis” is the end result of a long period of overfunding. The current policies in place to tackle overfunding have shown to be rather ineffective in prevention of such crises occurring.

Greece is an example of a government having borrowed for years more than their GDP growth levels. This can be called an “indirect” crisis. In such a crisis, the only way out is to get individual households to pay more taxes out of their incomes and for a government to reduce its spending levels. Both actions force the company sector into retrenchment actions. The so-called “solutions” to solve the debt bubble force an economy into a deep decline, with very high unemployment levels. Debts and the level of debts become the negative force in an economy.

In the U.S. the situation was different. From 1998 onwards, individual households started a borrowing spree to fund home acquisitions. Mortgage borrowings were entered into in a volume that not only led to more homes being build, but also of house prices to increase much faster than household’s income developments and the CPI index. The crisis that occurred as a consequence of such overfunding levels can be called a “direct” crisis, as individual households were directly affected by the crisis.

From 2007 onwards, the pressure on households to repay such debt led to many foreclosure procedures and also to 5.6 million homeowners losing their own homes altogether. Furthermore it led to consumer demand levels dropping as the priority for many households was to pay off debt first, before increasing spending levels. Both lower consumer demand and the subsequent unemployment deterioration very quickly led to the U.S. government debt accumulation from 2009 onwards.

There are three main elements in any debt crisis:

1. The volume and the growth in the volume of debt incurred is an essential element as any debt is linked to the capacity to repay the debt. For governments and for individual households their debt absorption capacity is their level of income and the growth therein.

2. Debt is always linked to the debt providers, be they banks or other financial institutions like asset managers, pension funds, mutual funds and insurance companies. In the case of Greece the IMF, the ECB and other EU government institutions did take over most of the private sector funding and became the “bankers” of last resort. Irrational exuberance often exists among debt providers. With many

players on the supply side of debt, micro and macro volume control of debts is one of the weakest elements in the granting of debts. Banking and financial markets supervisors, whose role it should be to manage macro-volume levels and their impact on economic growth and unemployment levels, have generally shown a “laissez-faire” attitude rather than an “hands-on” one.

3. The price of debt is often uncoupled from the risks. Higher volumes of debt do not necessarily lead to higher costs of funds. The price setting for long-term individual household debt has not been based on volume growth either.

1.2 The positive impact of debt

For individual households taking on more debt provides a chance to spend more than their current income levels allow. For some acquisitions by households, using debt as a tool to acquire a home for instance, it is not only logical as the acquisition price is often a multiple of annual income or accumulated savings but it is also a way to grow future savings in the form of equity in the home.

Taking on debt or increasing debt levels is based on expectations of a future growth in incomes for individual households. The positive force of debt –increasing the purchasing power of households- will work as long as income expectations are met. If not, debt accumulation will work as a negative force on economic growth levels.

There are other elements in a household’s debt structure. When buying a car, very few individual households expect the value of such car to go up over time. The use of a car will normally depreciate the value of a car. Taking out car-loans is based on bringing forward the purchase date of a car on the basis that future income flows will be adequate to support the loan. The U.S. Balance Sheet of Households and Nonprofit Organizations² helps to show that there is a close correlation between the debt volume increase in car loans and the feel good factor in the economy. Debt growth helps the economy to grow when incomes grow simultaneously. The growth in consumer debt reinforces economic growth rates.

Buying a home with the help of a mortgage is a totally different proposition. Firstly the mortgage period can easily stretch out over thirty years, rather than the usual three-year period for consumer loans. Secondly the asset: the home can increase as well as decrease in value. A mortgage loan can help to speed up the price rise in homes, but it can also help to increase the volume of new homes being built. The latter helps house prices to grow slower and make it more likely that house prices stay in line with average income growth.

² <http://www.federalreserve.gov/releases/z1/current/z1r-5.pdf>

2 The debt analysis process

2.1 The real question

Incurring debt is not necessarily an evil force. The real question is when do debt levels move from an “affordable debt level” to an “unaffordable” one. The answer is not when individuals or governments stop paying back their outstanding obligations. The unaffordable moment in time has already past when loans are no longer being serviced.

In the debt expansion period economic growth rates will pick up, just because more purchasing power is being used. In the debt contraction period, especially when it affects individual households, consumer demand will grow less rapidly, economic growth levels will suffer and unemployment levels will rise.

Individual households do not only take on debts to acquire goods and services; they also borrow funds to speculate on stock and bond markets. Such type of debt creation is not linked to producing economic growth, but it will affect individual households' purchasing power, which is the money left after the debts have been settled.

Affordability in servicing debts has all to do with income levels. The debt contraction period, especially in its earlier stages, causes unemployment levels to rise and thereby weakens the collective income levels. Debt contraction directs income flows away from current spending in order to lower outstanding debt levels. In this manner it reduces economic growth levels.

The key economic objective is therefore to seek a balanced growth between household income levels and debt expansion. The affordable debt levels are those that stay within this balance. The “turnaround” situation arises when an imbalanced position is being created, which is often long before actual default levels go up.

A government through its taxation policy and expense adjustments can cause major changes in after-tax income levels of individual households. A central bank can through its interest rate changes influence the debt affordability levels for households.

A balanced growth between debt and income levels is a growth of incomes after tax and after the impact of higher interest rates.

In the next section the U.S. experience will be used to search for the “turnaround” years.

2.2 The U.S. case

In a paper: “The evil force of borrowing and the weakness of Quantitative Easing”³ it was explained how in the U.S. the annual volume increase in mortgage lending levels not only led to more homes being built, but also how home price rises absorbed the debt levels.

In the two tables below the increase in outstanding mortgage amounts was compared to the increase in median income levels. The latter was represented by the CPI increases over the period 1997-2008. This is an approximation as in prosperous years household incomes have a tendency to grow slightly faster than the CPI index and in less prosperous times, such income growth tends to fall behind the CPI index.

Table 1: Money input – new housing output and average money allocated per new home built over the period 1997-2008 in the U.S.

Year	Increase in mortgage amounts x U.S.\$ billion	Housing starts per 1 July on annualized basis x million	U.S.\$ allocated for each new home
1997	180	1.437	125,260
1998	301	1.698	177,270
1999	377	1.699	221,900
2000	382	1.463	261,110
2001	509	1.670	304,790
2002	706	1.655	426,590
2003	881	1.897	464,420
2004	950	2.002	474,525
2005	1,053	2.054	512,660
2006	998	1.737	574,550
2007	701	1.354	517,730
2008	- 32	.923	

³ The evil force of borrowing and the weakness of Quantitative Easing by Drs Kees De Koning, 7 February 2015 <http://mpira.ub.uni-muenchen.de/61970/>

Table 2: Potential Housing starts based on CPI basis

Year	Increase in mortgage amounts x U.S.\$ billion	Housing starts per 1 July on annualized basis x million	Annual CPI Inflation %	Median house prices per 1 July based on CPI x U.S.\$	Potential housing starts based on CPI x million
1997	180	1.437		145,900	1.437
1998	301	1.698	1.6	148,234	2.031
1999	377	1.699	2.2	151,495	2.489
2000	382	1.463	3.4	156,645	2.439
2001	509	1.670	2.8	161,031	3.161
2002	706	1.655	1.6	163,607	4.315
2003	881	1.897	2.3	167,370	5.264
2004	950	2.002	2.7	171,889	5.527
2005	1,053	2.054	3.4	177,733	5.925
2006	998	1.737	3.2	183,420	5.441
2007	701	1.354	2.9	188,739	3.714
2008	- 32	.923	3.8	195,911	negative

1997 was chosen as the base year as in 1997 the volume increase in outstanding mortgage lending levels (U.S.\$ 180 billion) and the new housing starts per 1 July on an annualized basis (1.437 million) led to an allocation for each new home of \$125,260 which was well below the median house price of \$145,900 in 1997.

Between 1997 and 2005 the annual volume increase in mortgages outstanding grew by nearly six times from \$180 billion in 1997 to \$1053 billion in 2005. During the same period the new housing starts grew only by 1.43 times the 1.437 million housing starts in 1997 to 2.054 million in 2005. Each new home start required \$125,260 in 1997 and \$512,660 in additional borrowings in 2005. It was only in 2004 that the sub-prime mortgage-funding spree began in earnest and that mortgage-backed securities became widely used including the element of sub-prime mortgages.

Table 2 shows how much of the annual increase in mortgage amounts was used for keeping up with the CPI indexed level of new home starts and the excess over this level. The difference between the two levels reflects how fast house prices did increase over the mentioned period above the CPI indexed level. If the CPI level can be regarded as a level close to the median income growth levels in the U.S. over the period 1997-2005, than the calculations reflect the growing gap between income growth and mortgage funding. In 1998 \$49 billion out of the total of \$301 billion of the growth in mortgage funding was allocated to increase house prices above the CPI inflation level or 16.3% of the funding. By 2005 \$688 billion out of the total \$1053

billion was allocated for the same purpose or 65.3% of all new funding was used for house price increases above the CPI index level.

Economic alarm bells should have been ringing when debt volumes were increasing, especially of the long-term variety of home mortgages and when such increase was outstripping households' income improvements. The 1997-2007 U.S. pattern of the debt volume increases continuously kept raising the risk levels to individual households, to banks and ultimately to the whole economy.

Spotting the danger point

Banks call their mortgage loan portfolios sound when their customer base repays such loans according to the loan schedules agreed to. However macro-economically speaking one can define a mortgage loan portfolio as unstable and thereby a threat to future economic growth rates when households' income growth levels are exceeded by the changes in the price levels of homes.

In the U.S. such turning point was reached in 2002. In this year the increase in the mortgage portfolio of \$706 billion was used for new home starts at the CPI index level to the extent of \$271 billion and the remainder to inflate house prices above the CPI level to the extent of \$435 billion. This distribution trend continued unabated up to and including 2007 without interruption.

The year 2002 was well before the sub-prime mortgage sales efforts, which started in all seriousness from 2004 onwards.

The difference between the narrow definition of "sound" levels of debt as defined by the banking sector and its macro-economic definition lies in the threat to future defaults and their subsequent consequences. Banks have a short-term profit motive and any household able to repay according to the agreed repayment schedule is regarded as sound as no loan loss provisions need to be made. Profits are maximized for the short term. Macro-economically the fact that income growth and house price growth levels are on divergent tracks should lead to the conclusion that such a pattern is unsustainable and therefore action is needed. Short term banking profits and long-term economic stability deviate. Financial markets provide the wrong profit signals for future economic growth levels.

Having assessed that the macro-economic danger point was reached in 2002 what could have been done about it.

Making choices

A key question to be raised is whether the interest rate tool is a suitable instrument for correcting a deficiency in households' income growth. An income growth deficiency can be defined as a growth in income levels slower than the growth in (long-term) debt levels. When (mortgage) debt levels grow faster than income levels, does one try to slowdown such debt growth by raising the price of new (and variable

rate) debt or by limiting access to new debt? This was the real choice that could have been made. Does one restrict the supply side of debt so that potential new debt users have a more restricted access to debt levels, or does one increase the price of new debt?

Increasing the costs of borrowing does not help households to improve their income levels, but it achieves rather the opposite effect. Raising interest rates punishes the borrowers rather than the lenders.

What might have been done in 2002 was to increase the reserve requirements for banks, including for Fannie Mae and Freddy Mac. What the analysis of the home mortgage lending data indicated was that from 2002 the allocation of mortgage funds used for new home starts on the basis of income growth levels (\$271 billion) was far exceeded by the funds allocated to house price inflation above the CPI level (\$435 billion). 2002 was the first year that more than 50% of new mortgage funding was not used to build more homes but to inflate house prices above the CPI index level (1997 was used as the base).

What did happen was that the Fed lowered its base rate of 6% in January 2001 to 1.75% in December of the same year. With a further dip to 1% in 2003 such rate continued to June 2004 when it was raised to 1.25%.

The applied base rate changes did not reverse the threats caused by the mortgage lending effects to future economic growth patterns, but rather reinforced the trend.

This leads to the question: Are making interest rate changes the appropriate tool for reining in excess lending levels? Should companies, a government and individual households all have access to borrowings based on an identical Fed funds rate?

Economic output is based on consumption, investments and government expenditure. Each economy depends on individual households. In the U.S. in 2014 consumption by individual households contributed to 68.5% of the U.S. GDP of \$17.4 trillion. Ignoring to what happens to the financial position of such households is equal to ignoring the importance of these households for the economic prosperity of the country.

Therefore if the growths in mortgage debts contain a threat to future economic growth levels, this is not only an issue for individual households. When the financial markets do not provide the right guidance, as their profit levels do not reflect the risks to future economic growth levels, it is up to the authorities to take appropriate action. In 2002 the threat to future economic growth levels came from the individual households' sector, some of it from the companies sector with no threat from government spending.

Over the period March 2000 to October 2002 the dot.com bubble had burst and investors had lost about \$5 trillion in savings values; much of it were realized losses as dot.com companies went bankrupt.

On the one hand, due to the dot.com bubble, the fear factor in the U.S. economy had grown dramatically, hence the decision by the Fed to lower its base rate from 6% on January 3 2001 to 1.75% on December 11th of the same year. On the other hand the developments in the housing market as compared to households' income growth did require a slow-down in mortgage lending.

It will be clear that these two objectives: lower the fear factor in the overall economy and managing a slow-down in mortgage lending could not be achieved through the sole use of the interest rate mechanism. The first objective required lower interest levels and the second one of slowing down mortgage lending certainly would not include lowering of interest rates.

Another element to consider is what happened after 2008.

Over the period 2008-current, the empirical evidence as provided by the Balance Sheet of Households and Nonprofit Organizations, shows that base rate changes have not had any effect on the volume of outstanding home mortgages in the U.S. The Fed funds rate was 4.25% per end of 2007 and was reduced to 0.25% by the end of 2008. Per the end of 2007 the total volume of outstanding home mortgages was \$10.613 trillion. Per the end of the first quarter 2015 the total outstanding level had been reduced to \$9.370 trillion, while the base rate has been kept at 0.25% during this whole period. The home mortgage loan volume went down by some 12% over the last seven years while the base rate was maintained at its lowest level ever. Costs of funds influenced individual households the least; repayment of loans had the higher priority.

Making choices is not only making choices for all households together: a government, companies and the individual households, but also making choices for each type of household as distinct from other households. Each type of household can originate a threat to future economic growth rates.

3 Collective debt levels

3.1 The lenders side

In the U.S. in 1987 there were practically 14000 banks and deposit taking institutions. These institutions had collectively some \$2.5 trillion of deposits. As per end of September 2013 there were 6891 banking organizations and they had collectively \$9.6 trillion on deposits. The number of banking institutions has been falling, but the average size per bank has been growing substantially. Many smaller banks merged or were taken over and the larger banks grew in size rather than in numbers.

However what this all means is that there were and are still a significant number of participants in the home mortgage lending markets. Each participant decides on itself, which mortgage amount to lend and to whom. Competition between banks still means for each bank that the mortgage interest received will always exceed their costs of

funds. Banks also feel more comfortable if the asset (home) price goes up, thereby improving, in their eyes, the loan to asset ratio. Banks seek profits from their home mortgage portfolio. In 2002 banks would have considered the substantial drop in the base rate in 2001 from 6% to 1.75% per December of that year a bonus, as more customers would be able to afford a higher volume of mortgage debt. Banks would not have regarded the fact that more than 50% of new mortgage funds were to be used to inflate house prices above the CPI index and the income earning capacity of households as anything to worry about. The profit motive would steer them collectively in the wrong direction.

Under these circumstances the lenders themselves would not show any inclination to slow down the lending process. Only regulatory intervention could have done the job.

From 2004 the process of securitization of mortgages was growing rapidly. Not only did banks lay off risks on their customer base by transferring such risks to third parties, it also opened the floodgates for more mortgage lending. Most of the new mortgage lending ended up in pushing house prices further above average income growth. Having mutual funds, pension funds and even money market funds investing in home mortgage backed securities took away the potential buffer that banks provided, through their equity base, in absorbing loan losses.

The fact is that the Fed increased the base rate from 1.25% at June 30 2004 gradually to 5.25% by June 29 2006. The Fed may have been aiming to slow down mortgage lending and the economy in general, but the structure of home mortgage lending had changed by that time. Securitization plus the mortgage products on offer: low or no down payments; below market interest rates for two years; and a wider use of variable interest rates at a time that house prices far exceeded income levels, made the crash a near certainty. The interest rate setting did not help the picture. Ultimately the lack of liquidity in the mortgage backed securities markets killed off any further growth in mortgage lending. As already stated, as per the end of the first quarter 2015 the outstanding mortgage volume lending level is still some 12% below the level of December 2007. This is in actual amounts and not corrected for inflation levels.

3.2 The U.S. government's own debt situation

In fiscal year 2007 the U.S. (Federal) government ran a budget deficit of \$160 billion⁴ and had a gross public debt level as per the end of fiscal 2007 of \$8.951 trillion. The accumulated deficits since 2007 including the 2014 deficit amounted to \$6.710 trillion. This would lead to a debt situation of \$15.661 trillion. However the actual debt level was \$2.133 trillion more and had risen to \$17.794 trillion as per the end of fiscal 2014. The reason for this difference were the obligations for State sponsored enterprises such as Fannie Mae and Freddy Mac. In this connection it is important to

⁴ http://www.usgovernmentdebt.us/debt_deficit_history

note that about \$2.4 trillion of this debt outstanding was financed by the Fed through its quantitative easing exercise.

In 2014 U.S. government debt to GDP (federal, state and local) reached 120.6% while interest payments were running at 1.3% of GDP. In 2007 the debt level represented 78% of GDP.

If the mortgage-lending crisis had not happened or had been prevented to happen, what would the U.S. government's debt level have looked like in 2015? If an annual deficit of \$160 billion had continued from 2007 till fiscal year 2014 the government's debt level would have been \$5.6 trillion less than the current level. Add on top of this the \$2.1 trillion difference between actual debt level and the level based on government deficit funding, than the total debt prevention level would have reached \$7.7 trillion. In other words the U.S. government debt level would have increased from \$8.951 trillion in 2007 to \$10.1 trillion in 2014.

The fact that it did not reach \$10.1 trillion in 2014 was due to the after effects of the mortgage backed financial crisis. The "economic costs" of the 2008 financial crisis were an increased debt burden for all U.S. citizens of \$7.7 trillion. With an estimated population in the U.S of 317.3 million in 2014 this meant an increase of \$24,267 in government debt per capita as a consequence of the financial crisis of 2008.

While the interest burden may not be to onerous with interest rates at rock bottom for the time being, the increase in principal debt per capita should be a warning signal to avoid any future individual household mortgage debt to grow out of hand. In a way the mortgage debt of some households have been transferred to become a burden to all U.S. citizens.

3.3 Debt resolutions

Spotting the danger point in lending to governments is even more difficult than the one for individual households. There is no world financial supervisor that tells a government that their borrowing behavior constitutes a threat to their future economic growth rates. There are also no mechanisms in place to stop governments from borrowing more.

In the short term a government's largesse to its civil servants and to the many who depend on social security payments may help to get it the popular support through the ballot box. Austerity policies always involve some groups losing out. Adding additional government debt to already high debt levels works in exactly the same way as debt levels for individual households. It is easy to enter into and much more difficult when repayments become due.

The International Monetary Fund has been set up as a lender of last resort, but by the time that its funds are needed, a country has long past its danger point. What the IMF

requires as part of its funding package is that structural changes are made in an economy, something that private lenders never do. Again structural changes would have been much more effective if the danger point signaling system would work better and when there are penalties for not following up on the changes. Co-operation between the Fed, the ECB, the Bank of England, the People's Bank of China, the Bank of Japan and some other central banks from major lending nations could force financial institutions under their control to stop lending or make such lending much less attractive. By publishing such action to the financial markets, this will put financial pressure on the country concerned to change its course of operations.

Prevention rather than curing a collapse of an economy is much preferable. Prevention does not lead to the high levels of unemployment and income losses for individual households.

3.4 A more democratic system of government spending areas

Individual households carry the responsibility for servicing their own debt levels. Collectively they have no control over the level of mortgage lending, nor how the allocated funds were used, either for home building or for pushing up house prices in excess of income growth levels. Individual households do pay tax, but again they have no means to control government spending or government debt levels, other than to elect a new parliament every four or five years.

Perhaps it is feasible to provide taxpayers with a more direct influence over the type of spending they prefer. This can be achieved with each tax year's tax assessment. With the Internet now widely available, a system of preferences could be developed whereby individual households could choose a percentage from their tax levels to be used for each major government expenditure category, like education, defense, housing, social services and others. Such preferences should add up to 100% of their tax payment. Collecting and acting upon such advice would provide households with a choice in where their tax money ends up. Increasing public debt levels would also come within the scope of a democratically vote.

A Parliament would remain in charge of setting the overall level of annual government expenditure, but it could follow the collective households' preferences as closely as is feasible.

4 Conclusions

- Debts of individual households and of governments should always be linked to their income earning capacity.
- The real question is when move debts from an "affordable level" to an "unaffordable" one?

- Banks and other financial institutions cannot answer this question as their profit guidance declares any client who maintains payments according to the loan agreement as current and no loan loss provisions need to be made. Banks' profits are no guidance to threats to future economic growth levels.
- The real threat to future economic growth levels in the U.S. came in 2002, when new home mortgage loans were used for more than 50% to push up house prices in excess of households' income growth levels. Debt and income levels were on a divergent path. This pattern continued to 2007.
- In 2001 and 2002 the Fed was faced with another "bubble" the dot.com boom and bust. Investors lost some \$5 trillion, much of it realized. The fear factor had set in and the Fed lowered its base rate from 6% to 1.75% in 2001. From the dot.com bubble's side fully understandable; from a mortgage restraint point of view inappropriate. The lesson is that two "bubbles": the mortgage and the dot.com ones cannot be solved by one instrument only: the interest rate setting.
- What could have been done in 2002 was to use an instrument specifically for reining in the home mortgage markets: increasing reserves requirements. This could have been done not only for the banks but also for Fannie Mae and Freddy Mac.
- Until 2007 the choice in managing the mortgage debt and income levels was one between restraining the lending side or making borrowings more unattractive. The Fed chose for the latter. It raised the base rate from 1.25% in June 2004 to 5.25% in June 2006. Regretfully the banking sector had latched onto mortgage-backed securities and had changed the mortgage conditions with below market rates for two years, low or no down payments to a subprime customer base. Mortgage risks were transferred to other financial institutions, like mutual funds, pension funds and even money market funds. Lack of liquidity in these bonds led to the crash of 2008.
- In the period after 2008 individual households preferred (or were forced) into repaying mortgage loans. Some 12% of the total volume of outstanding mortgages was repaid to the lenders. This happened notwithstanding that borrowing rates were at their lowest levels ever, with a base rate of 0.25% over the whole period.
- The "economic costs" of the mortgage crisis costs each U.S. citizen another \$24.267 as a consequence of the increase in U.S. government debt since 2008.
- Bubbles can occur in household debt, in government debt, in stock markets, in loading companies with more debts and in cross border debt especially through the internalization of the U.S. dollar.
- Spotting the danger point is difficult enough, but preventing the danger occurring needs a financial infrastructure. Central banks need to take a more pro-active stand regarding cross-border loans.

- Finally it is possible to give taxpayers a greater say over the use of their tax payments, including funding government expenditure levels over and above tax receipts. After all individual households are the ultimate households having to pay taxes and repay government debts.

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16th July 2015

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