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**Collective Household Economics and the need for funds approach;
The 2007-2008 financial crisis and its effects**

By

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22nd September 2015

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Introduction

The three main economic philosophies (Classical, Keynesians and Monetarists) did not help in preventing the 2007-2008 U.S. financial crisis. Why not?

The Classical economists focus on free markets, free of government interference and free of monopolies. They missed the point that when about \$10 trillion of the funding in the U.S. housing market is based on borrowed funds, the housing market is no longer free, but depend on what happened to the borrowers. The Keynesians emphasized the need for government interference to counteract recessions by increasing government spending above tax receipts. The U.S. experience over 2008-2015 has shown the fastest growth rate of government debt for a long time, but this did not help individual households to repay their mortgages. Keynesians also believe in the control of money supply but they do not link prevailing interest rates with the affordability of such rates to individual households. The Monetarists believe that banks can and should control the supply of money. It will be clear from this paper that banks did not control their mortgage lending levels in the run up to the financial crisis. Monetarist's emphasis is on the supply level of money rather than on the ability of households to repay outstanding loans, especially those of a long-term nature, out of the incomes earned. All in all a major rethink of policies is required.

Why was the financial crisis not foreseen? House price inflation based on excessive lending levels was not regarded as a threat to economic growth, contrary to the threat from cost price inflation. The latter occurs when wages growth or costs of raw materials, intermediate goods and imported goods push up inflation levels.

The second reason was that it was not recognized that the supply of mortgage funds as provided by the banks and the financial markets does not necessarily match the needs (or demand) of the collective of individual households. The needs are based on population growth levels, changes in family size and changes in accommodation taste patterns. In the U.S. about 1.8 million new homes are needed every year. The needs of the collective of individual households are also based on income growth, the affordability level. The latter is especially important for lower and median income families. Wall Street thinks in terms of profitability, while Main Street thinks in terms of affordability.

The third reason was that the level of the Fed's base rate sets the funding cost base for banks. Competition for customer deposits adds an additional cost level for banks. The price setting for mortgages is a one sided process whereby banks, and indirectly the Fed, decide what to charge to their customers. As set out in this paper mortgage customers need a "dynamic stability" in their mortgage obligations, one that is linked to the annual CPI level and income growth. The paper proposes a scheme to break the link between the cost of mortgages as set by the banking sector and the mortgage interest costs paid by individual households, with the latter instead being based on the CPI level plus a margin. Such a scheme will stabilize the financial position of individual households both at high and low inflation levels. In some years a surplus will be created between what individual households pay and what the banks receive; in other years

there will be a shortfall. The U.S. Treasury could accommodate such temporary surplus/shortfall as a tool for creating stable economic growth, in what could amount to a type of individuals' quantitative easing.

As a further tool for putting the collective of individual households first, rather than the financial sector, a traffic light system can be implemented to slow down the volume of mortgage lending when needed. A future financial crash linked to the housing sector can be avoided if the separation of mortgage interest charged by the banking sector and interest levels paid (based on CPI inflation levels) by the household sector is combined with the traffic light system.

'Collective Households Economics' may be a new variant of economic thinking. The need for funds approach is based on the different parameters for the collective individual households than the ones that rule the banking sector.

It is paramount, if one wants long-term economic growth to continue, that the need for funds approach prevails. It is based on the needs of the individual household customer base, rather than on the profit levels of the financial markets. Bridges can be built!

1. The U.S. experience in the run up and in the aftermath of the financial crisis of 2007-2008

1.1 The Collective Households' mortgage levels

The term Collective Households is used in this paper to include all individual households with a mortgage or in the case of new construction levels all those households seeking a place to live. "Collective" represents a group of individual households with the same intention or with the same action pattern like obtaining or having a mortgage.

In the U.S. extensive statistics are available to track the developments of the Collective Households' outstanding mortgage borrowing levels. Such statistics are contained in the U.S. Balance Sheet of Households and Nonprofit Organizations¹. From these statistics one can deduce the incremental home mortgage lending levels per annum.

The U.S. Census Bureau² publishes monthly and annual data on the level of new privately owned housing units authorized. It also publishes annual and monthly median house prices.

Table 1: Mortgage finance and the U.S. housing market 1997-2008

Year	Actual Increase in Mortgage amounts X U.S. \$billion	Actual Housing starts X Million*	Amount per New home X \$ thousands	Existing Home sales X million**	Median House Prices X \$ thousands
1997	180	1.437	125,260		146,000
1998	301	1.698	177,300		152,500
1999	377	1.699	221,900	5.080	161,000
2000	382	1.463	261,100	5.100	169,000
2001	509	1.670	304,800	5.490	175,200
2002	706	1.655	426,600	5.970	187,600
2003	881	1.897	464,400	6.490	195,000
2004	950	2.002	474,500	6.890	221,000
2005	1,053	2.054	512,700	6.850	240,900
2006	998	1.737	574,600	6.420	246,500
2007	701	1.354	517,700	4.410	247,900
2008	-32	.923	Negative	4.010	232,100

* Per 1 July on an annualized basis

** Per December of calendar year; statistics only available from 1999

1997 was chosen as the base year as in this year the increase in mortgage lending levels was enough to fund all new housing starts at a cost below the median house price level.

¹ <http://www.federalreserve.gov/releases/Z1/current/accessibile/b100.htm>

² <http://www.census.gov/construction/bps/pdf/table1a.pdf>

What table 1 shows is that the volume of net new mortgage lending went up about 600% between 1997 and 2005; new housing starts increased by 43% over the same period and existing home sales went up by 35% over the shorter period 1999-2005. Median house prices went up by 65% between 1997 and 2005.

In a paper by this author: “The U.S. experience, free markets in money: a contradiction in terms”³ it was argued that when lending growth was not accompanied by income growth, the whole U.S. economy would be destabilized.

The paper also noted that the supply side of funds to the collective households granted as mortgages had a very different set of parameters from the need for funds approach. The latter approach will be explained in section 1.4.

The supply side is influenced by the level of accumulated savings that banks and other financial institutions, like asset management companies and pension funds have available to invest during any given time period. Secondly the price of funds made available to mortgage borrowers is based on interest rates that the Federal Reserve sets from time to time. Thirdly, banks and other financial institutions, apart from most pension funds, are profit-oriented organizations. Profit is a short term orientation and as shown in the above-mentioned paper may not easily gel with the longer-term objectives of homeowners, especially when actual house prices are rising faster than income levels.

1.2 U.S. Mortgage debts in a wider perspective over the period 1997-2014

Mortgage and government debt levels compared to nominal GDP.

Table 2: U.S. Mortgage and government debt levels compared to nominal GDP for selected years between 1997 and 2014

Year	U.S. Gov. Debt level X \$ trillions	U.S. Individual Households' Mortgage Debt X \$ trillions	U.S. Nominal GDP X \$ trillions	Economic Growth rate %
1997	5.413	3.753	8.608	4.5
2002	6.228	6.028	10.977	1.8
2003	6.783	6.910	11.511	2.8
2006	8.507	9.910	13.856	2.7
2007	9.007	10.613	14.478	1.8
2008	10.024	10.581	14.719	- 0.3
2009	11.910	10.419	14.419	- 2.8
2014	17.824	9.403	17.701	2.4

Table 2 illustrates quite clearly the different growth patterns of individual households' mortgage debt and U.S. government debt. In 1997 the start position was that the

³ http://mpr.aub.uni-muenchen.de/66106/1/MPRA_paper_66106.pdf

mortgage debt level was substantially below the government debt level. In 2002 such levels became nearly equal and in 2003 the mortgage debt level started to exceed the government's debt level. This period lasted to 2008. From 2008, individual households collectively reduced their outstanding mortgage levels, while the government, as a consequence of the financial crisis had to increase its budget deficit as well as providing government guarantees for state sponsored enterprises like Fannie Mae and Freddy Mac.

In 1997, the combined government debt plus the mortgage debt levels, both being long-term debt commitments of individual households, stood at about 106% of GDP. By 2007 this debt to GDP level reached 135.5%. In 2014 this debt level had risen further to 153.8% of GDP.

What are the main causes of this unparalleled growth in debt levels and why has such increase not led to very high economic growth levels?

A free housing market is supposed to reflect free supply and demand. However if a buyer cannot base such demand on the use of own funds, the demand is no longer free. The use of about \$10 trillion of mortgage related funding in the U.S. shows that the U.S. housing market depends strongly on borrowed funds.

Any borrowings, including borrowings for the purpose of buying a home, require the lender and the borrower to have a sound understanding of long-term future income levels of the borrower. Such understanding does not only apply to the individual borrower, but also to the collective of households and equally to the collective of financial institutions providing finance to the mortgage market.

One can distinguish three types of risks in the assessment process: the income risks to the borrowers, the interest rate risks to the borrowers and the macro-economic risks of lending too fast relative to house price developments.

In 1997, the nominal median income level of U.S. households stood at \$35,365. By 2002 the level had reached \$40,649; an increase of 14.94%. The most exposed mortgage borrowers are those on or below the median income level. They usually do neither have the savings nor the income security to absorb shocks when changes happen in interest rates or there are house price developments. Over the period 1997-2002 median house prices went up by 28.49% or nearly double the median income level. The net new mortgage lending levels went up from \$ 180 billion in 1997 to \$ 706 billion in 2002; an increase of 392%. However, even with all that extra money, the new housing starts only went up by 15.17%. The remainder of the funds was used to force up existing house prices far in excess of income developments. This was the macro-economic risk that banks did not take into account. Neither did it seem to bother the Federal Reserve, as the latter did not regard house price levels as a threat to economic growth developments.

In 2001 and 2002, the Fed was worried about the losses made on the stock markets as a consequence of the dot.com bubble. In early 2001, it took action and lowered the base

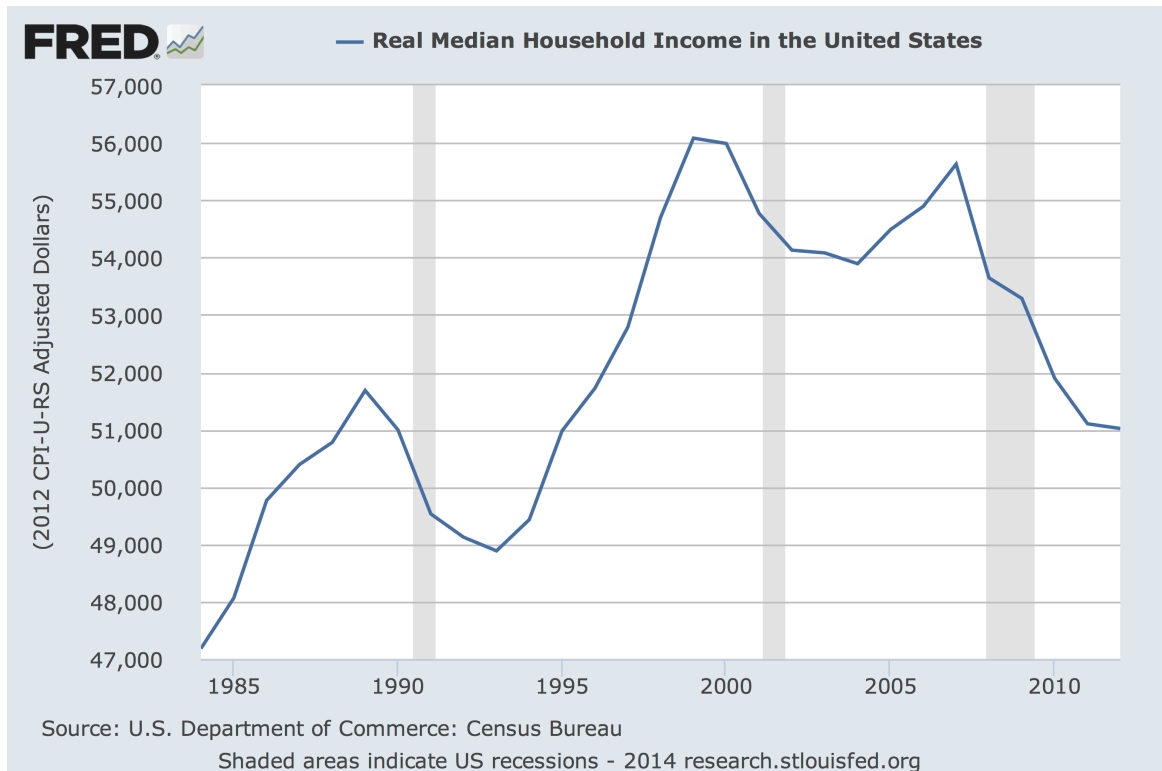
rate from 6% in January of that year to 1.75% by December 2001. Economic growth rates dropped from 4.1% in 1999 to 1% in 2000 and 1.8% in 2001. For the U.S. housing market, these interest rate steps induced the banking sector to step up rather than slow down mortgage lending levels, thereby increasing rather than reducing the macro-economic risks to individual households. 2002 should have been the year which saw an orchestrated slow down in mortgage lending.

Neither the Fed nor state banking regulators opted to slow down mortgage lending volumes in 2002. They also failed to regulate the type of mortgage products that came on the market, including interest only mortgages, below market rate start up mortgages, low down-payment and 'low-no doc' mortgages. These products –sometimes-called sub-prime mortgages- became popular from 2004 onwards. Such products were frequently sold to individual households, who self-certified their incomes without the banks checking on actual income levels. Finally, the move by banks to offload their mortgage risks to outside investors through mortgage-backed securities was not seen as adding another risk layer on top of the macro-economic risks that were already extremely high in the U.S. mortgage funding market. The regulators were happy to allow the widespread conversion of long-term risks on mortgages into daily liquidity risks on the financial markets.

What happened next was that the liquidity risks in some mortgage-backed securities materialized; they were declared illiquid. In 2007, illiquidity spread quickly in the financial markets, both in the U.S. and in overseas markets like the U.K. This was followed by the banking crisis in 2008, followed by the sharp rise in unemployment levels and the stagnation of income growth for individual households.

1.3 Income and income distribution levels

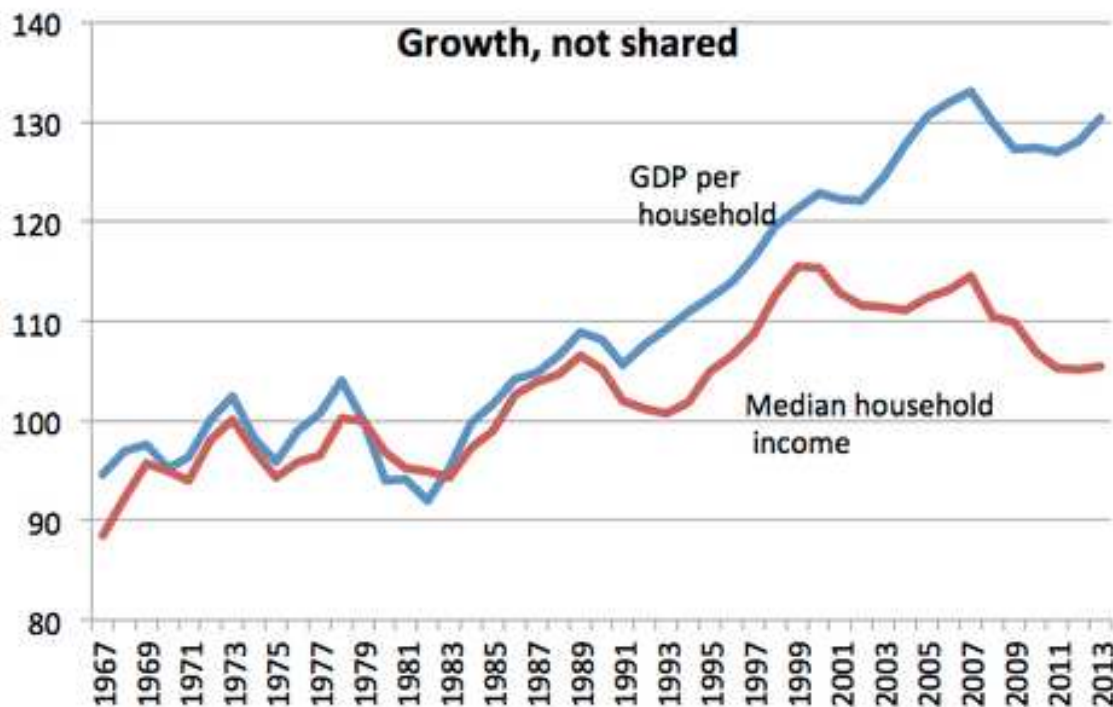
What is particularly relevant to the mortgage market is the income level of individual households and its distribution over various income groups. The income groups most likely in need of borrowing funds for home acquisitions are households with an income below or at the median income level. In graph 1 the real median household income levels for the United States are provided.



The above tells us, that, while there was some growth in real earnings between 1997 and 2005, such growth represented only a tiny fraction of the 600% in net new mortgage lending growth.

In an article in the New York Times of 12 November 2014, Professor Krugman⁴ illustrates the fact that economic growth in the U.S. has benefitted the richer households proportionally more than the median income ones.

⁴ <http://krugman.blogs.nytimes.com/2014/11/12/on-income-stagnation/?comments#permid=13314433>

Graph 2: GDP growth per household and median household income

Two conclusions can be drawn from Tables 1 and 2 and Graphs 1 and 2: The first one is that the growth in net new mortgage lending level was excessive over the years 1997-2005. The excess can be measured by the speed of growth in mortgage lending levels (+600%) as compared to the growth in the nominal median household incomes (+30.5%). The second conclusion is that median house prices (+65%) increased at about double the speed of incomes growth (+30.5%) over the same period.

From all these data it should be clear that median income growth did not follow lending growth and did not follow median house price increases. The risks to the U.S. economy were apparent from 2002 and later years, but no action was taken to stop the trend, not by the bankers and not by the regulators.

The key misunderstanding was that the supply of funds was thought to equally represent the demand for home mortgages.

1.4 The supply of mortgage funds and the need for funds approach

In the whole discussion about mortgage levels it is often assumed that the supply of funds must be equal to the demand for funds. However, as this paper has already demonstrated, the mortgage lending levels that were fuelled by the banking system went significantly beyond what the collective households needed. What the collective households needed in mortgage funding and what was subsequently delivered by the financial sector were based on totally different sets of parameters.

For instance, the supply side was based on available savings levels, which could have been allocated to government, companies and individual household borrowings. If profit levels are attractive on home mortgages than one may expect some pressure within the banking community to sell more mortgages. The supply side also has to adhere to prudential regulations. It is furthermore subject to prevailing interest rate levels. Last but not least banks aim to make profits. Such profit orientation has been shown to be very short-term oriented.

The need for housing has very little to do with the fact whether mortgage funds are available or not. The need for housing stems from population growth levels, from changes in average family size and from changes in taste patterns for one or another type of home. In the U.S. the need for new homes can be estimated at about 1.8 million housing units annually.

The need for new homes requires funding, either from own resources or from banks and other financial organizations. The demand for funds should be based on a level that ensures that individual households can fulfill their mortgage loan obligations at all times.

Table 3: The need for home mortgage funds over the period 1997-2008

Year	Actual Increase in Mortgage Amounts x U.S. \$billion	Actual Housing Starts per 1July (ann.) x million	Needed Housing Starts x million	Annual CPI Inflation %	Median House Prices (1July) Based on CPI x U.S.\$	Increase in Mortgage Funds Needed x U.S. \$billion
1997	180	1.437	1.8		145,900	
1998	301	1.698	1.8	1.6	148,234	267
1999	377	1.699	1.8	2.2	151,495	273
2000	382	1.463	1.8	3.4	156,645	282
2001	509	1.670	1.8	2.8	161,031	290
2002	706	1.655	1.8	1.6	163,607	294
2003	881	1.897	1.8	2.3	167,370	301
2004	950	2.002	1.8	2.7	171,889	309
2005	1,053	2.054	1.8	3.4	177,733	320
2006	998	1.737	1.8	3.2	183,420	330
2007	701	1.354	1.8	2.9	188,739	340
2008	- 32	.923	1.8	3.8	195,911	353

In this table the need for new homes (1.8 million new ones) is combined with the annual CPI inflation level to assess, based on the adjusted median house prices, how much an increase in mortgage funds is needed in order to fund the new homes. The demand for funds is based on the CPI index changes and based on the premise that if house prices move up in line with the CPI inflation level, nearly all households will be able to continue servicing their home mortgage debt.

This epitomizes the need for funds approach, which seeks to define the demand for mortgage funds from the collective individual households' perspective rather than

from the supply side organized by the financial sector. It focuses on income levels of individual households, house price inflation, the need for new homes based on population growth, changes in average family size and changes in taste patterns. The need for funds approach does not deny that interest rate changes affect disposable income levels; it does not deny that funds need to be available to grant home mortgages, but it does guard against financial markets setting the demand for mortgage funds; the demand base should be set by the collective of individual households rather than by the financial markets. This is what Collective Households Economics is all about.

If the need for funds approach had been applied in the period 1997-2008, the financial crisis would not have occurred; economic growth rates would have not been so seriously undermined as they have been from 2008 and 2009. The U.S. government deficits would not have been so large and the current U.S. government debt position would have been substantially better.

2 Steps to help implement the need for funds approach

2.1 Preventive measures.

Volume levels

A traffic light system

When mortgage-lending levels are increasing too rapidly, as was the case in 2002, a system of traffic light management could have been introduced. This system could –and still can- work as follows: The signal to the banking sector for continuing home mortgage lending as was done in previous periods would be: “green”. If the speed of lending was regarded as moving to the danger zone the “amber” signal could be flashed up. When the danger zone was reached, the “red” signal could come on. Banks or other financial institutions that would not follow the traffic light system could be punished on an individual basis, not by setting collective prudential levels, but by individualized ones, like individual reserve requirements or even speeding fines.

Interest rate changes

The simple theory says that when the price of money goes up, the volume of money demand will come down. There are a number of complications with regard to the home mortgages market, which may not suit this simple theory.

Firstly, a mortgage is a long-term commitment by the borrowers. Just because the price of money changes does not mean that the borrowers borrow any less or more than they have already outstanding. They usually are not in position to speed up repayments, rather the opposite if their mortgage is based on a variable interest rate; in the latter case, their disposable income will be reduced by the added burden of an increased interest rate. The effect on new borrowings depends on house prices, own savings and on the overriding need to find a place to live. As tables 1 and 2 have shown, even at the

top of the lending boom in 2005, new borrowings never exceeded more than about 10% of the outstanding home mortgage portfolio.

Secondly, the experience after 2008 clearly showed that lowering of interest rates –even to the lowest rates on record- did not encourage higher levels of mortgage borrowings, rather the opposite. Over the period 2007-2014 mortgage borrowers reduced their collective borrowings by \$1.2 trillion or about 12% of total mortgage borrowings as per end of 2007. Foreclosure proceedings and home repossessions forced borrowers to concentrate on repaying rather than increasing their outstanding home mortgage portfolio.

Thirdly, the wider issue of the impact of interest rates has to be addressed. House price inflation is of a different character than cost price inflation, the latter being determined by wages growth and price changes in commodities and intermediate products, including final products imported from abroad. House price inflation is either caused by excessive funding levels, as was the case in the U.S. between 1997 and 2007 or by a low volume of new construction of homes, below the need of a growing population, as was the case in the U.K. due to planning restrictions. Cost price inflation can be caused by monopoly situations on the companies' or countries' side or by scarcity factors in the labor market.

The lowering of interest rates in 2001 in the U.S. was aimed at helping the economic growth rate to strengthen. At the same time, this movement in the interest rate worsened the house price inflation case. The 2004-2006 steep increase in interest rates from 1.25% in June 2004 to 5.25% in June 2006 did help to slow down economic growth rates, but it did not help to slow down mortgage lending levels during 2004, 2005 and 2006. Perhaps it is necessary to have different approaches for combatting house price inflation levels than for fighting cost price inflation.

2.2 Separating mortgage costs from funding costs: the Collective Household approach

Individual households are best served by mortgage costs that do not fluctuate heavily. A scheme could be introduced that makes such approach feasible. Such a scheme could have an interest cost base of CPI level plus 1% for the borrowers. This is a variable interest rate, but one that directly links income growth with interest charges. It is also a Collective Households scheme in that it ensures that nearly all mortgagees will be likely to fulfill their mortgage obligations. For the banks a funding return of Fed funds rate plus 1.75% could be guaranteed. Of course at times there may differences between the CPI +1% borrowing rate by the mortgage holders and the Fed funds rate +1.75% by the banks. Government-sponsored institutions such as Fannie May and Freddy Mac could settle such differences with the banks with the help of the U.S treasury in case of short falls. Surplus funds should be flowing back to the U.S. treasury.

Such a Collective Households' scheme fulfills a number of objectives. The main objective is to separate the costs of home mortgage borrowing from the costs of lending, enabling borrowers to enjoy a rate of interest, which is set on a dynamic basis. If

consumer price inflation goes up, it is very likely that wages will go up also. On the other hand, when consumer prices come down the pressure to increase wages will be less and a lowering of mortgage interest costs will help households to maintain their disposable income for other purchases. For the lenders, the Fed funds rate determines their costs of funds. The Fed changes its rate to keep inflation under control (mostly cost price inflation) and to assist the economy in its economic growth endeavors. The Fed funds rate is a funding rate that currently applies to all different groups of households: a government, companies and individual households. Separating the long-term mortgage borrowings from the influence of the Fed funds rate offers the individual households that have a mortgage a better chance to keep up with their mortgage payments and a better chance to maintain their spending levels on other goods and services thereby benefiting the wider economy.

The combination of volume control on the lending side and costs control over interest levels on the borrowers side will help the U.S. economy to grow on a much more stable basis.

The transition of the existing mortgage portfolio to the new system of segregated costs to the borrowers and rewards for the lenders can be a gradual one. First of all, the mark-up on both lenders and borrowers is just an example of what could be agreed upon, but is certainly not set in stone. Secondly, it is possible to trial the approach with new home mortgage borrowers, whereby each mortgage needs to have a repayment schedule. Gradually existing borrowers could be moved to the new system. What is important is that the income risks for all mortgage borrowers are reduced as soon as is practicable. Lower and median income mortgage holders will be the greatest beneficiaries. If the boom-bust situation in the housing market is effectively tackled, it will also improve employment prospects for those seeking and for those in employment, keeping a job.

2.3 Some tentative cost/benefit implications for the U.S. Government

The current three-month deposit rate paid to customers by U.S. banks is around 1% on a per annum basis, with a Fed funds rate of 0.25%. The rewards banks would receive over mortgages would be 0.25% Fed funds rate plus the 1.75% which equals 2%. If the Fed funds were raised, so would be the mortgage receipts for banks. In this scheme banks would only need to fund their home mortgage portfolio on a three months rollover basis.

Table 4 compares the CPI plus 1% and the average Fed funds rate plus 1.75% for the years 2000-2014

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
CPI +1 %	4.4	3.8	2.6	3.3	3.7	4.4	4.2	3.9	4.9	0.7	2.6	4.2	3.1	2.5	2.6
Fed Fund Rate + 1.75 %	7.75	5.55	3.25	2.85	3.5	5.55	6.5	6.25	4.0	2.0	2.0	2.0	2.0	2.0	2.0

By separating the funding costs for the banks on their mortgage portfolio from the funding costs for individual households, the U.S. government achieves a prudential division in economic terms between Wall Street and Main Street. Such a barrier is needed to reduce the economic vulnerability of individual households; especially those that need to borrow to buy a home. The great economic weakness, which showed up during the financial crisis, was that by co-mingling these funding costs, 1 in 6 of every American household was confronted with foreclosure proceedings over the period 2006-2013 and that nearly 6 million home owners were faced with home repossessions. In 2009, 45% of all existing home sales were of repossessed homes.

From table 4, it is evident that there are years that the government will need to bridge the gap between interest received from individual households and interest paid to the banking sector. 2000-2002 was one such period. For 2003-2004 the government would have been on the receiving end. 2005-2007 it would be paying out again, but after that apart from 2009 the government would have been on the receiving end.

The economic stability that will be created for individual households by this system helps to avoid increases in unemployment levels and to maintain spending levels when inflation levels are low. The system would create a type of people's quantitative easing at times when interest rates on the financial markets are high and the system is self-correcting when bank interest rates are low.

3. The post financial crisis developments

3.1 New housing starts and home ownership

The impact of the mortgage crisis has lasted a long time. 2006 was the last year that slightly over 1.8 million new homes were started. The lowest points were reached in 2009-2011 when around only 600, 000 new homes were started per year, about a third of what population growth levels required. 2012 levels were somewhat better at 830, 000 new homes, in 2013 the level increased to about 1 million, in 2014 to 1.05

million and by August 2015, on an annualized basis to 1.126 million. However nine years after 2006, this is still about a third below the needs for new homes based on population growth.

The U.S. Census Bureau supplies the data on home ownership. In 2000 about two thirds of all American households (66.2%) owned their own home. By June 2004 this level had increased to 69.2%. In the first quarter of 2015 this level had dropped to 63.7%, a level as low as in 1990. What also happened is that non-occupant owners have reached a record high; the latter includes real estate companies set up to make a profit out of renting homes. First time buyers now only make up 29% of homebuyers compared to the long-term average of 40%.

3.2 Unemployment levels and the labor force participation rate

In the U.S., the unemployment level dropped to 5.1% in August 2015, which is a major improvement over the more than 10% reached at the height of the financial crisis. However the labor force participation rate, reflecting those able to work within the age group of doing so, has dropped strongly from 67.3% in January 2000 to 62.6% in August 2015.

3.3 Student loans

Student loans constitute the second largest level of debt by individual households after mortgage debts. Both are long-term debt levels. According to the Federal Reserve of New York at the end of 2014 \$1.16 trillion in student loans was outstanding. It also reported that student loan delinquencies and repayment problems appear to be reducing borrowers' ability to set up their own households.

3.4 Outstanding mortgage and government debt levels since 2008

Over the period 2006-2013, 21.3 million households were confronted with foreclosure proceedings⁵. This compares to the 47.5 million households who had a mortgage, or affecting nearly 45% of all mortgagees. Over the same period, 5.8 million homes were repossessed. This represents 1 out of about every 8 households with a mortgage. These shocking statistics sum up the incompetence of the U.S. banking sector to control itself in mortgage lending. It also represents a failure to act by the regulatory authorities.

As a consequence of the pressures by the banking sector to repay outstanding mortgage loans, outstanding mortgage debt levels have been reduced by \$1.2 trillion over the period 2007-2014. Over the same period, U.S. government debt levels doubled from \$9 trillion in 2007 to \$17.8 trillion by the end of 2014. Both are signs of the impact that the financial crisis had on individual households in the first place and on the U.S. government subsequently. If the collective mortgage levels had been better managed in the period 1997-2008, the subsequent years would have seen an increase in mortgage

⁵ <http://www.statisticbrain.com/home-foreclosure-statistics/>

lending levels and a much lower level of U.S. government debt increase. The U.S. population did not stop growing suddenly in 2008 and in later years, neither did the need for funds for home mortgages. The imbalances created by the financial sector in the run up to 2008 created the long-term decline in home ownership rates, the increased levels of unemployment and a large share of the increased government debt levels. Economic growth levels over the years 2008-2015 were seriously undermined by the irresponsible levels of home mortgage lending in the run up to 2008.

4. Some conclusions

- A radical rethink is needed about the manner in which individual households obtain mortgage funds in the U.S. This is especially important for the lower and median income households, who rely most heavily on mortgage borrowings to get on the housing ladder. Risks for them were extremely poorly managed in the run up to 2008. The approach to macro-economic risk management should start with the collective of individual households, rather than with the lenders.
- A primary plank of such a rethink entails the recognition that the parameters for lending by the banking sector are very different from the need for mortgage funds of the collective of individual households. Supply by the banking sector does not imply an equal level of demand by the collective of individual households.
- The need for funds approach is based on population growth levels, changes in average family size and changes in taste patterns for homes. It is also based on income growth levels. It is based on affordability levels, rather than on the bank based profitability objectives. In the U.S. about 1.8 million new homes are needed annually.
- To implement the need for funds approach requires a change in volume, price and quality control measures. Volume control can be enforced with a “traffic light” system to be observed by lenders and enforced by regulators. Price control can be introduced by separating the interest costs paid by the individual households and those received by the banking sector. The collective individual households mortgage portfolio would greatly benefit if the interest charges were to be based for instance on CPI level +1% for the borrowers: the affordability principle. The lenders could receive Fed funds rate +1.75%: the profit principle. In case of shortfall or surplus the U.S. Treasury could even out the differences. Finally quality control measures could be put in place to ensure that all mortgages granted include a repayment element and do not include interest rate teasers.
- Collective Households Economics would help individual households to continue to be able to service their mortgage and simultaneously continue their spending levels on other goods and services. A dynamic balance can be achieved between

income growth and mortgage expenses. Student loans could be arranged in a similar fashion.

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