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Introduction

For many years accountants and auditors have assessed the accounts of companies and banks in order to provide a true and fair opinion about the value of assets and liabilities and profits and losses. Over these years accounting standards have been continuously upgraded to reflect the changes in mainly the financial products on offer and the risks incorporated in them. The latest standards are set by the International Accounting Standard Board and are called the International Financial Reporting Standards. Similarly standards have been defined for governments and government entities in the International Public Sector Accounting Standards. In the U.K. the Financial Reporting Council¹ is responsible for setting and maintaining accounting standards for the private sector. It combines the works of accountants, actuaries and auditors. To establish a true and fair opinion has been made more and more difficult with the introduction of complex financial instruments, both for the originators: the banks and insurance companies as well as for the users: hedge funds, pension funds, government entities and the corporate sector.

Accountants, auditors and actuaries always focus on their own client base. These clients rarely include individual households, apart from in the specific case of tax accounting. For the U.K. government, the National Audit Office² is the responsible audit agency.

What auditors, accountants and actuaries actually do is making sure that prevailing market prices are properly reflected in the values of assets and liabilities as well as in incomes and expenses. What auditors, accountants and actuaries do not do -as it is not within the mandate from their clients- is whether the price setting of an individual firm or the collective of firms or of a government causes gains or losses for other market participants, especially for individual households. Such assessment would reflect the economic impact of the drive for profits.

This article aims to address the question whether there is evidence that the profit motive for one group of companies -for instance the banking sector- can actually help to increase or reduce the net worth levels of individual households. The same question can also be raised for government funding and its effects on households net worth positions.

The U.K.³ and the U.S.⁴ produce statistics on the Balance Sheet of Households and Non-Profit Institutions. Eurostat does not produce such data for the European Union countries, excluding the U.K. The U.K. and the U.S. data show that there are periods when the aim of banks to make a profit coincides with increases in net worth for the individual households. However there are also periods when this is not the case.

Why these situations can arise is the subject of this article.

1. The Home Mortgage Markets

¹ <http://frc.org.uk/Home.aspx>

² <http://www.nao.org.uk/>

³ http://www.econstats.com/uk/uk_bb_____80a.htm

⁴ <http://www.federalreserve.gov/releases/z1/current/accessible/b100.htm>

1.1 The Economic Value of Homes

If individual households were in a position to buy their home outright without relying on outside sources of funds, the question could be asked: What is the economic value of having the use of one's own home? Is the value of living in one's own home different from one year to the next? How should the acquisition price of the home be depreciated over time?

Two elements stand out:

(1) Generally speaking the owner-occupier does not buy a home for it to be traded in a market place. The aim of acquiring a home is to live in it. If there is no aim to trade, there is also no market value as such. There is an acquisition price and a potential future sales value as and when the needs of the owner-occupier change and a different type of home is required.

(2) The economic life span of homes is usually at least fifty years and in many cases very much longer. Some homes need modernisation from time to time, but apart from occasional updating and common maintenance, homes require very little else. It is an asset which gives a benefit over an individual's lifetime and sometimes longer than that.

The benefit of living in one's own home -fully funded from own savings- cannot be expressed in money terms in the usual way. One saves rent payments, but why would one compare such savings with the return over the original cash lay-out as no rent payments (cash flow) take place? One also saves on the interest payments as there has been no borrowing. Again why would one apply current interest rate levels over a home acquisition which may have taken place years ago in a totally different interest rate environment? If rents and interest rates are not useful in assessing the value of the benefit of living in one's own home, what is? The logical conclusion is to treat one's home as an asset which is to be depreciated over its useful life. The only reasonable yardstick is an equal depreciation amount per annum based on the original purchase price, corrected only for the variation in households' real estate values from one year to the next, but depreciated over the remaining life time.

A calculation example may make it clear. Assume Mr Johnson bought a home outright for U.S.\$100,000 in 2007 with an expected life span of say 50 years. This means the depreciation amount is U.S.\$2,000 per annum. According to the U.S. Balance Sheet of Households as published by the Federal Reserve, home values dropped from \$20.844 trillion in 2007 till \$17.558 trillion in 2008, a drop of 15.8%. If this drop is spread out over the remaining lifetime of 49 years, this implies 0.322% per annum. Apply this to \$2,000 and the depreciation amount becomes \$1,993.56 per annum for the remaining 49 years. The dates of 2007 and 2008 were chosen on purpose, as the drop in home valuation was the steepest for at least 25 years.

The variables are the expected lifetime of the property, the level of home improvements and the level of changes in home values, however the latter corrected for the remaining life time period.

In the next section it will be explained why this depreciation method is key to understanding what can go wrong when finance gets involved.

1.2 Banks Mortgage Lending Activities

Generally speaking when banks get involved with the funding of home loans, their risk taking is based on predicting individual income levels and on the expected future home values. If one studies the trends in the U.S. home markets it should be clear in hindsight, that the stress in the home mortgage markets started in 2006 already.

In the U.S. during the few years preceding 2008, mortgage originators started to have mortgages approved by banks on basis of doubtful principles. A Deutsche Bank study⁵ came to the conclusion that 37% of the mortgages granted were interest only mortgages; 38% of the mortgages also required no down payment so 100% of the value of the home was borrowed; 43% of the borrowers were not required to provide any proof of income and finally 80% of borrowers were attracted by providing them with a low start up interest rate for a period of two years, after which interest rates were hiked steeply.

According to the study, the subprime market segment “only” amounted to U.S.\$1.2 trillion out of the total home mortgage market of U.S.\$10 trillion.

U.S. investment banks started to package these subprime mortgages into Collateralised Debt Obligations. Based on AAA ratings from the U.S. credit rating agencies, the investment banks sold these CDO's around the world, but also to U.S. money market funds. When the real risks to these mortgages appeared, as cash flows faltered, the U.S. investment banks were in no position to maintain a market in these CDO's., something they had promised to do. The CDO's turned from “going concern” to “liquidation” CDO's. The pricing fell off a cliff and many CDO holders could not get out of the risks. Huge losses on savings were made.

From about 2005 onwards, major errors were made by the mortgage originators and by the mortgage risk distributors -the investment banks.

In the United States errors in home mortgage lending decisions can easily be traced back through four types of statistics: the foreclosure filings, the level of actual bank repossessions of homes, new housing starts and the price developments in the housing market.

The stress in the housing market in the U.S. can be measured in the annual levels of foreclosure filings, which represent actions taken by lenders when borrowers get into a default situation. In 2005 such foreclosure filings were 801,563. In 2006 this level increased to 1.215,389, in 2007 the level reached 2.2 million and in 2008 it moved to 3.1 million. In 2009 it became 3.46 million. In 2010 the level moved further up to 3.84 million only to reach 3.92 million in 2011. In August 2012 it was still high at 193,508 in a month, or 1 in 681 housing units were affected by foreclosure filings. The highest stress level has been 1 in 298 housing units and the lowest 1 in 317,498 units. The number of housing units repossessed by banks was 269,000 in 2006, 489,000 in 2007, 679,000 in 2008, 945,000 in 2009, 1.125 million in 2010 and 1.147 million in 2011.(Source: Statistic Brain.com)

Keeping up with payments on outstanding mortgages is one element of the housing market, new housing starts and home values are the other two elements.

The level of new housing starts -monthly figures on a seasonally adjusted annual rate- reached its peak in October 2007 at 1.264 million. In January 2008 it dropped to 1.084 million and a year later in January 2009 it had more than halved to 490,000.(Source: Ycharts.com). The S&P Case Shiller home price index⁶ dropped from 170 by the end of 2007 till 139 a year later.

When new housing starts drop to half the level of a year earlier, this affects output (GDP), households income for those directly and indirectly involved in the house building business and thereby economic

⁵ http://www.globalsecuritisation.com/08_gbp/gbp_gssf08_022_031_db_us_subprm.pdf

⁶ <http://www.standardandpoors.com/indices/sp-case-shiller-home-price-indices/en/eu/?indexId=spusa-cashpidff-p-us--->

growth levels as well as unemployment levels. This also had a strongly negative effect on tax income for the U.S. government.

The repossessions of homes represent a different category. Once banks take possession of a home they will want to cut their losses on the property. It usually means that the net equity in the property has already been wiped out - a loss to a household's net worth. Secondly the extra supply of "second hand" homes puts home values under further severe strain as evidenced by the drop in the S&P Case Shiller index in 2008. Such repossessions and sales do nothing for economic growth, as the houses have all been built in earlier periods, but they do affect households' net worth values, through the change in speed of home values' depreciation. The mistake in granting mortgages to people who could not afford such mortgages is that 850,000 rather than 269,000 used houses came on the market with a for sale sign in 2008. Such extra supply should never have occurred; it distorts the true market values for homes. The price setting for homes was based on an error of judgment by some banks. It was based on financial markets rather than on real markets considerations.

The clash between the banks' actions and the interests of their clients -the individual households- became evident in 2006 and even more so in 2007. On the one hand some banks and some originators were pushing sales of home mortgages without due regards for risks. Regretfully for prudent banks, the behaviour of imprudent lenders affects the prudent banks' risk portfolios as well. The increased level of foreclosure filings in 2006, 2007 and 2008 showed that the banking system collectively had sold mortgages to people who could not afford it. They did not have the cash flow to service their debt.

What one should note is that the mortgage periods agreed between banks and their clients do not coincide with the lifespan of a property. The mortgage periods will always be substantially shorter than the economic lifespan. Secondly home loans are often made on a variable interest rate basis, leaving individual households with a home related interest rate risk over their income levels. Usually households have no way of avoiding such risk.

What banks do, once they have made their errors in lending, is to try to get the maximum amount of the outstanding loan amounts back. They also, as above figures illustrate, try to do this in the shortest possible time period. Such financial action, which benefits the banks, forces home market values down. All existing borrowers, but also the non-borrowers see their asset values drop. Usually for at least 95% of existing borrowers it is not their inability to repay the mortgage, but it is the inability of the say 5% or less who can no longer afford the payments and should not have had the mortgages granted in the first place. Mortgage availability drops; having to move homes to take up a new job realises the losses in values, so it affects labour mobility. The drop in new housing starts has a substantial impact on unemployment levels and on consumer demand.

What forced sales of homes do is to shorten the financial lifespan of a home. Banks increase the speed of financial depreciation of homes for their own profit motive, while the individual household's economic depreciation stays at practically the same level. Economic and financial lifespan depreciation starts to deviate. This affects the net worth build up by individual households as retained in their own homes. The economic value of living in one's own home does not change for all practical purposes, but the potential financial buffer of their build up equity in their home changes. Bank's actions to get out of the non-performing home loans, negatively affects the net equity position of all individual households which own a home. Irresponsible lending practises are translated into having a major negative impact on the financial net worth of all home owning individual households. A small group of doubtful home loan borrowers, mainly caused by irresponsible lending and risk transferring practices as described in the Deutsche Bank study, make all individual households lose equity net worth in their homes, even for those who never borrowed a cent. The profit objective of banks led to huge home equity losses for individual households during 2008 and following years.

Accountants and auditors were right in assessing that house prices did drop steeply in 2008 and that banks had to make provisions for those borrowers who could no longer afford to pay the mortgage sums. However the accountancy profession was never asked to assess the size of the depreciation of homes of individual owner-occupiers. Economists should have raised this matter.

From the Federal Reserve data on individual households net worth position as per end of 2007 and 2008, one can conclude that the households lost \$12.6 trillion in net worth values in 2008, which equalled 19.1% of such values in a year and represented a loss of 90% of 2008 GDP. If one compares this to the original \$1.2 trillion in sub-prime mortgages, the multiplier effect was more than 10. The losses in home values alone were \$3.3 trillion in 2008. The remainder came from the problems in the banking sector, in the corporate sector through reduced demands and in the government sector.

From an economic point of view with home depreciations representing a very steady amount, such divergence between financial and economic depreciations should never have occurred. A possible policy solution could be found in enhancing economic growth. How this could be done, with the help of economic easing policies, has been spelled out in my paper: *When Capitalism No Longer Works - A Profit Warning*⁷. The key issue is to use financial savings temporarily to correct the errors of the bankers. The historical errors made by the banks can not be undone, not by increasing equity capital requirements, not by splitting up investment from retail banks, nor by changing the bank supervisors. It needs banks to improve their credit risk judgments skills. It needs education for the bankers from top to bottom. What can be done -as explained in above paper- is using pension fund savings temporarily to create extra consumer demand. Such action will help to restore economic growth, get people back into jobs and earnings and help restore net worth levels of individual households. When economic growth has reached its long term potential, the tax payers could return the savings back to the pension pots. The key group to focus on is the collective of individual households and not the banks. Most banks have learned their lessons. The remainder group requires re-education.

2. Government funding and government debt.

2.1 Government funding

The funding of all economic households, including funding of a government, originates from the individual households. They are the ultimate owners of all equity and debt as well as all savings in a society.

For the purpose of this paper it is not necessary to go into details about which section of the society pays what kind of taxes; what is important is to what extent are a government's assets and liabilities matched and to which extent is the prevailing level of tax income sufficient to cover government expenses.

The National Audit Office has produced an accountants approach to U.K.'s government assets and liabilities and income and expenditure. This is called the "Whole of Government Accounts" The first and only WGA statement of accounts was published in 2011 for the fiscal year 2009-2010. The WGA differs from the national accounts in a number of ways. They are however in line with the International Financial Reporting Standards. The highlights are reproduced below:

"Whole of Government Accounts 2009-10: At a glance

Although there are other quoted measures of the UK's national debt, such as those produced by the Office for National Statistics, the WGA provides, for the first time, an accountant's view of the government's financial position. It shows our "current deficit" is £164.5bn whereas our Net Liability position (equivalent to the "national debt") to be some £1,211.8bn.

Revenue and Expenditure

⁷ <http://mpa.ub.uni-muenchen.de/41671/>

Total revenue: £582bn

Description	£bn
Taxation revenue from direct taxes	(285.2)
Taxation revenue from indirect taxes	(148.0)
Taxation revenue from local taxes	(52.1)
Revenue from sales of goods and services	(51.0)
Other revenue	(45.7)
Total revenue	(582.0)

Total expenditure: £665.7bn

Description	£bn
Social security benefits	197.1
Staff costs	180.4
Purchase of goods and services	160.9
Cost of grants and subsidies	66.2
Depreciation and impairment charges	51.6
Provision expense	(17.0)
Other expenditure	26.5
Total expenditure	665.7

Net financing costs: £80.5bn

Description	£bn
Investment revenue	(4.3)
Finance costs	34.9
Interest on pension scheme liabilities	58.9
Expected return on funding pension schemes' assets	(9.0)
Net financing costs	80.5

Net loss on sale of assets: £0.3bn

Net deficit for the year: £164.5bn

Assets and Liabilities

Non-current assets: £953.8bn

Description	£bn
Property, plant and equipment	708.0
Investment property	14.6
Intangible assets	36.3
Trade and other receivables	40.0
Equity investment in the public sector banks	65.3
Other financial assets	89.6
Total non-current assets	953.8

Current assets: £253.7bn

Description	£bn
Inventories	12.4
Trade and other receivables	125.7
Cash and cash equivalents	8.1
Gold holdings	7.3
Other financial assets	100.2
Total current assets	253.7

Total assets: £1207.5bn

Current liabilities: £355.1bn

Description	£bn
Trade and other payables	(102.5)
Government borrowing and financing	(200.9)
Provisions for liabilities and charges	(15.4)
Other financial liabilities	(36.3)
Total current liabilities	(355.1)

Net current liabilities: £101.4bn

Total assets less current liabilities: £852.4bn

Non-current liabilities: £2,064.2bn

Description	£bn
Trade and other payables	(73.7)
Government borrowing and financing	(764.7)
Provisions for liabilities and charges	(86.2)
Net public service pension liability	(1,132.3)
Other financial liabilities	(7.3)
Total non-current liabilities	(2,064.2)

Net liabilities: £1,211.8bn”

By the end of 2012 the next set of WGA data will be published. Discussions are still ongoing about inclusion of all government entities such as Network Rail, the Bank of England and the partly nationalised banks, which have not been included in above data.

2.2 Government Debt

To stick to the U.K. figures as an example, when the net government debt is £1.212 trillion, the tax revenue base is £582 billion and the GDP level stands at £1.279 trillion all in the same year, it will be clear that the U.K.'s government debt cannot be paid back any time soon. The ultimate obligors for the debt are the individual households. They already pay -directly and indirectly- around half of their income to the government. Just to getting back to a balanced budget situation is now predicted to happen by 2018.

What the current level of debt represents is a very long term obligation on the one hand and on the other hand an asset incorporating the benefits of education, healthcare, defence and a public infrastructure. It probably does not include the social security benefits, which represent a transfer payment between households in a current year.

The type of assets -government debt- compares well with the homes we live in. The character of the asset is for the most part an intangible asset with a proven long term benefit. Just like homes for the users, the economic value of government bonds could be depreciated in equal amounts over a period to be decided, but this period should probably be linked to the average U.K. life expectancy⁸, which is 80 years. In amounts this means £15.15 billion in annual repayments plus interest amounts. This leads to the question of the appropriate interest rates. If a loan period stretches out over an 80 year period, it should make no difference whether one enters the obligation for a 2, a 5, a 10 or a 30 year period. Each of these loans needs to be rolled over till the principal amount is reduced. What is currently happening, both in the U.K., but also in the U.S. and in nearly all Eurozone countries, is that the actual level of government debt is increasing rather than being reduced. The “banking” question is: Can the individual households collectively repay or at least reduce the outstanding government debt level over a period of some 80 years? If the assessment is positive than the best debt funding strategy is to gradually switch all debt issuance to 10 and 30 years maturity. The best interest rate strategy would be to provide savers with a fixed return of say 2% over inflation levels for 10 years bonds and 2.5% for 30 year bonds. Central banks could play a key role in maintaining such interest rates.

Currently financial markets do not operate in this manner, because the governments have not made their funding strategies clear. For instance, the financial depreciation level of gilts has been manipulated by the exercise of quantitative easing, through which the Bank of England has printed money and bought up £366 billion as of to-day out of a total gilt market of £1.164 trillion. An interesting comment about how much of

⁸ <http://www.nhs.uk/news/2011/03March/Pages/uk-life-expectancy-still-rising.aspx>

the U.K.'s government deficit was funded by printing money by the Bank of England was made in an article in the Daily Telegraph⁹ of 17th October 2012. Among the observations made is that since August 1, 2012 the Debt Management Office sold £34.3 billion in IOU's and the Bank of England bought £32 billion of them. The article concluded that there is a false market in government bonds.

My conclusion goes further. There is a current financial market price for U.K. gilts, but this a financial market price, which has totally been distorted by quantitative easing and by the effects of capital flight from other countries. The economic value assessment of these assets and their depreciation method should be given priority over the financial markets liability assessments. The latter "only" reflects to-day's views on how an 80 year obligation could be settled. As seen in other European countries, such views can cause capital flight and increased interest rates, which have little to do with the long term ability to pay back outstanding government debt. However just as in the case of homes, such financial markets actions can force economies into a tailspin.

The solution is of course fiscal discipline, which only stands for balancing the budgets, including the provision for interest payments to be kept current and principal amount to be repaid over an 80 year period. The solution is also to get people and companies back to work, so that full utilisation is made of all available manpower and other resources. Such action helps individual households to earn more, spend more on consumption, save more and yes pay collectively more taxes, not by raising the tax rates, but in having a higher income level to distribute.

3. Conclusions

Accountants, auditors and actuaries have been very effective in assessing corporate assets and liabilities as well as their incomes and expenses. As the Whole of Government Accounts efforts show, the U.K. and other governments have started to get a better grip on their assets and liabilities as well as on their income and expenses. What has been the forgotten sector has been the Individual Households. They are the source of all wealth creation, but also the victims if the money men -bankers (including other financial sector operators) and governments- get their risk assessments wrong and force depreciations of homes and government debt. Such depreciations are driven by financial markets -the liability side- and out of line with the economic depreciation of such assets based on actual asset values. Company assets valuations are based on the economic value to companies; they are not based on how such assets have been funded. The same philosophy should be applied to both the home markets and to government bonds. They both represent assets which can be depreciated.

Understanding the depreciation gap between the financial markets and the economic method provides possible solutions of how to shorten the adjustment period and how to avoid repeating making the same errors in future. Economic easing and appointment of a top macro-economic risk manager were suggested in my previous paper: When Capitalism No Longer Works - a Profit Warning.

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⁹ <http://www.telegraph.co.uk/finance/comment/9613297/Britain-will-feel-the-pain-when-the-QE-bubble-finally-bursts.html>