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Submission to Treasury Committee on Household Finances: income, saving, debt, asset markets, and the current account

Professor Steve Keen, Kingston University
debunking@gmail.com; www.patreon.com/profstevekeen

I will focus on the following three points from the Committee's Terms of Reference:

- • What determines the aggregate level of household net saving and the saving ratio in the macro-economy? Can policy affect the aggregate level of household saving?
- • Household indebtedness and consumer credit and incomes
- • Is the overall level of UK household debt and consumer credit sustainable?

My analysis focuses upon the constraints on household finances that set the overall possibility for households to save money. There is no point setting a savings target for households if that conflicts with the aggregate possibilities for saving.

To avoid the problem of drowning in the complexity of this topic and therefore "not seeing the wood for the trees", I will build a series of simple stylized models, adding levels of complexity only when necessary.

Model 0: No money creation

Consider an economy where there are no asset markets, so that the only way to acquire net financial assets is to spend less than you earn. Divide society into three groups: Poor Households; Rich Household; and Firms. Take the existence of money for granted, and start with each sector having £100. Banks play a completely passive role in this model of simply providing the accounts through which the three sectors spend.

Seen in isolation, Poor Households can save if their expenditure is less than their income. For the sake of illustration, imagine that each sector spends £100/Year on and receives £100/Year from each other sector, so that in Year 0, the Poor Household sector's income and expenditure are identical at £200/Year, and no savings occurs. In Year 1, the Poor Households sector spends £10/Year less, so that in Year 1 it saves £10.

Table 1: Poor Household sector savings from the its perspective

Poor Household Sector	Year 0	Year 1
Total Expenditure	-200	-190
Revenue from Rich	100	100
Revenue from Firms	100	100
Net Savings	0	+10

The impact of this net savings by the Household sector on the other sectors can be seen in an Income and Expenditure Table (see Table 2). The diagonal (in red) shows expenditure by each sector; the off-diagonals (in black) shows which sector receives that expenditure, which is therefore income

for that sector. The columns show net income by each sector. In these tables, all rows **must** sum to zero, since each row records a set of transactions in terms of their source and their destination.

Table 2 shows the situation in Year 0 from the aggregate perspective, rather than just from the Poor Household sector's point of view.

Table 2: The initial situation from the aggregate perspective

Year 0	Poor	Rich	Firms	Zero Check
Poor	-200	100	100	0
Rich	100	-200	100	0
Firms	100	100	-200	0
Net Savings	***0***	***0***	***0***	***0***

Table 3 shows the situation in Year 1, when the Household sector decides to save £10 that year by spending £5/Year less on each of Rich Households and Firms.

Table 3: Poor Household's decision to save £10/Year from the aggregate perspective

Year 1	Poor	Rich	Firms	Zero Check
Poor	-190	95	95	0
Rich	100	-200	100	0
Firms	100	100	-200	0
Net Savings	***+10***	***-5***	***-5***	***0***

The Household sector's decision to save £10/Year by spending less reduces the income of the Rich Household and Firm sectors by precisely £5/Year each, causing these other two sectors to dis-save by a total of £10/Year—precisely as much as the Poor Households save. So, the extra savings of the Household sector are completely offset by dis-savings by another sector.

This is the primary constraint on aggregate savings: its aggregate level is zero, because Expenditure and Receipts are necessarily identical at the national (and international) level.

The key point is that *savings at the sectoral level leads to an identical fall in income at the national level, with aggregate savings remaining at zero*. The savings by Poor Households, instead of causing identical savings at the national level, cause an identical fall in nominal GDP. This happens because, while an individual sector's expenditure and income can differ, at the aggregate level, expenditure **is** income: what is spending for you is income for the recipient. A fall in expenditure therefore causes an identical fall in income.

The Income and Expenditure Table makes this obvious. The sum of the magnitude of the entries on the horizontal axis measure GDP by the Expenditure method; the sum of the entries on the off-diagonal measure GDP by the Income method. They are necessarily identical, and both show that GDP has fallen by £10/Year, from £600/Year to £590/Year.

What happens if the Rich Households and Firm sectors respond to being forced into dis-savings by reducing their expenditure by the same amount? The end result is a fall in GDP precisely equal to the attempted aggregate savings of £30/Year. Nominal GDP falls by £30/Year, and aggregate and sectoral savings are both zero.

Table 4: Firm's decision to save £10/Year from the aggregate perspective

Year 2	Poor	Rich	Firms	Zero Check
Poor	-190	95	95	0
Rich	95	-190	95	0

| Firms | 95 | 95 | -190 | 0 |
| *Net Savings* | *0* | *0* | *0* | *0* |

These insights are captured in the Minsky model shown in Figure 1. Minsky is a system dynamics program specifically designed to enable monetary systems to be modelled. This is in contrast to the vast majority of economic models that ignore the monetary system completely.

Figure 1: A simple Minsky model of savings without money creation
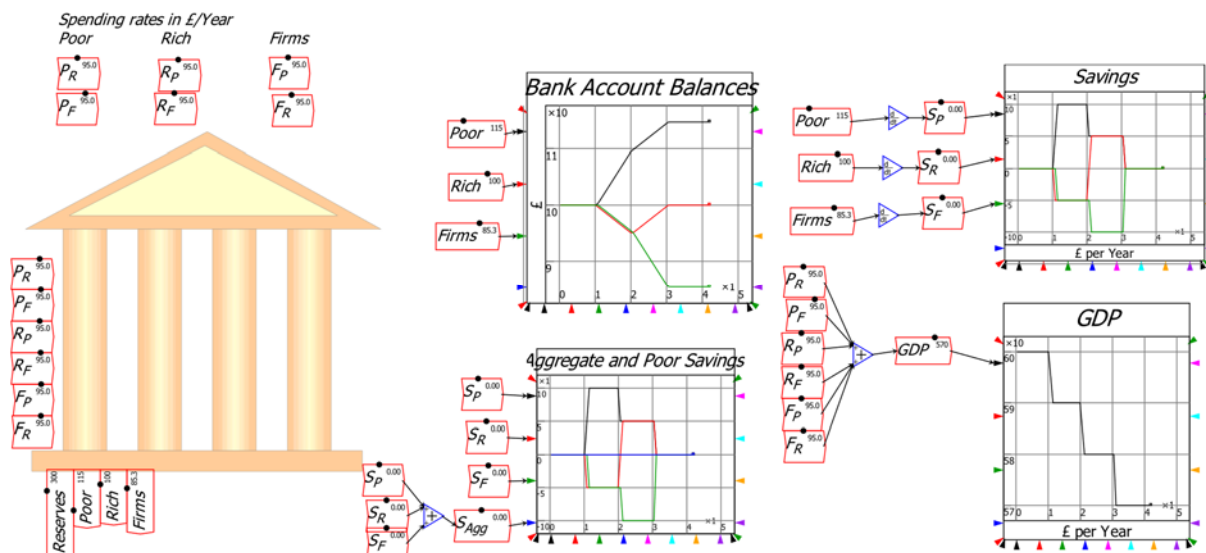
In the first year, each sector spends £100/Year on the other two sectors, resulting in aggregate savings of zero, while each sector has £100 in its bank account.

Table 5: Base Year with zero individual sector savings

Year 1	Assets	Liabilities		
Flows ↓ / Stock Variables →	Reserves	Poor	Rich	Firms
Bank Balances	*300*	*100*	*100*	*100*
Poor spend on Rich		-100	100	
Poor spend on Firms		-100		100
Rich spend on Poor		100	-100	
Rich spend on Firms			-100	100
Firms spend on Poor		100		-100
Firms spend on Rich			100	-100

Then in Year 2, Poor Households decide to save by spending £5/Year less on the other two sectors. This enables Poor Households to net save roughly £10, but this pushes the other two sectors into net negative £5 savings—the mirror image of the savings by Poor Households—and GDP falls by precisely the amount saved by Poor Households—from £600/Year to £590/Year.

Table 6: Year Two with net savings by Poor Households

Year 2	Assets	Liabilities		
Flows ↓ / Stock Variables →	Reserves	Poor	Rich	Firms
Bank Balances	*300*	*109*	*95.5*	*95.5*
Poor spend on Rich		-95	95	
Poor spend on Firms		-95		95
Rich spend on Poor		100	-100	
Rich spend on Firms			-100	100

Firms spend on Poor		100		-100
Firms spend on Rich			100	-100

In Year 3, Rich households respond by also cutting their spending by £10. This restores the savings lost by Rich Households in Year 2, but drives the Firm sector further into dis-savings, and reduces GDP by another £10/Year.

Table 7: Year Three with savings by Rich and Poor Households

Year 3	Assets	Liabilities		
Flows ↓ / Stock Variables →	Reserves	Poor	Rich	Firms
Bank Balances	***300***	***115***	***99.5***	***85.5***
Poor spend on Rich		-95	95	
Poor spend on Firms		-95		95
Rich spend on Poor		95	-95	
Rich spend on Firms			-95	95
Firms spend on Poor		100		-100
Firms spend on Rich			100	-100

In Year 4, the Firm sector also cuts back on its spending to attempt to save money. This stabilises its bank account, but ends up with the Firm Sector having dis-saved by £14 while the Poor Households saved £14. The money in bank accounts is redistributed—Poor Households now have £114 while Firms have £86—but net saving is zero, and GDP has fallen by precisely £30/Year.

Table 8: Fourth Year with zero individual sector savings and £30/Year fall in GDP

Year 4	Assets	Liabilities		
Flows ↓ / Stock Variables →	Reserves	Poor	Rich	Firms
Bank Balances	***300***	***114***	***99.7***	***86.3***
Poor spend on Rich		-95	95	
Poor spend on Firms		-95		95
Rich spend on Poor		95	-95	
Rich spend on Firms			-95	95
Firms spend on Poor		95		-95
Firms spend on Rich			95	-95

Three insights can be garnered from this simple model:

- *In the absence of either money creation or asset markets, the aggregate level of monetary savings is zero*. The net positive savings of any one sector are precisely offset by net negative savings of all others;
- Since the income source for each sector is the spending on it by other sectors, savings by any individual sector causes an identical fall in GDP; so that
- If both aggregate monetary savings and economic growth are to occur, then either money has to be created and injected into the economy by some other entity, or there need to be asset markets which can allow a net increase in financial assets over financial liabilities.

Reverting to the Income and Expenditure Table approach, what is needed for all sectors to be able to net save is some other sector which can consistently inject more into the other sectors than it extracts from them. A mystery sector which can do this is shown as Sector ??? in Table 9. As is necessarily the case, all rows in this Table sum to zero, including aggregate savings. But the

permanent excess of injections from Sector ??? over extractions by it mean that what we can call the "Real Economy"—the sum of the Household and Corporate Sectors—can save in the aggregate.

Table 9: Net savings by the private sector requires permanent net dis-savings by another as yet unspecified sector

Year 0	Poor	Rich	Firms	???	Zero Check
Poor	-220	100	100	20	0
Rich	100	-220	100	20	0
Firms	100	100	-220	20	0
???	30	30	30	-90	0
Net Savings	**10**	**10**	**10**	**-30**	**0**

If Sector ??? consistently extracts £20/Year from each of Poor and Rich Households and the Firm sector, but consistently injects £30/Year back into them, then each sector can net save £10/Year. In other words, the pre-requisite for net savings by the private sector is net "dis-savings" by some other sector. The first such sector we will consider is the banking sector.

Model 1: Money creation by banks

Though what the Banking Sector does can be portrayed as dis-saving from the perspective of an Income and Expenditure Table like Table 10 below, that is misleading, because it implies that the constraints on the Banking Sector are the same as those on households and firms. But this is not the case. Households and Firms are constrained in their spending: they can run out of pounds in their deposit accounts. However, banks are not constrained in their lending by an account from which they lend.

This is contrary to the model of money creation by banks that is taught in economics textbooks, known as "Fractional Reserve Banking" or the "Money Multiplier Model", which argues that banks lend from their Reserves, and are dependent on depositors' funds to enable lending. I am one of a group of non-mainstream economists which has argued for decades that this model is fallacious (Minsky 1963, Holmes 1969, Minsky 1977, Moore 1979, Minsky 1982, Moore 1988, Graziani 1990, Dymski 1992, Graziani 1995, Keen 1995, Godley 1999, Hudson 2004, Wray 2009, Jorda, Schularick et al. 2010, Fullwiler 2013, McLeay, Radia et al. 2014, Werner 2014, Werner 2014, Kumhof and Jakab 2015). Instead, we have asserted that bank lending creates deposits (which are the primary form of money), and that Reserves play no role in lending (but primarily exist to enable inter-bank transfers).

Recently our task was made much easier by several Central Banks, who have emphatically agreed with us that this textbook model is wrong. The first was the Bank of England, which stated that "The reality of how money is created today differs from the description found in some economics textbooks:"

- Rather than banks receiving deposits when households save and then lending them out, *bank lending creates deposits*.

- In normal times, the central bank does not fix the amount of money in circulation, nor is central bank money 'multiplied up' into more loans and deposits (McLeay, Radia et al. 2014, p. 1. Emphasis added)

This has been emphatically seconded by the Bundesbank:

> It suffices to look at the creation of (book) money as a set of straightforward accounting entries to grasp that money and credit are created as the result of complex interactions between banks, non- banks

and the central bank. And *a bank's ability to grant loans and create money
has nothing to do with whether it already has excess reserves or deposits at
its disposal*. {Deutsche Bundesbank, 2017 #13440, p. 13}

The Bundesbank has also recently published an excellent educational animation to explain money
creation by banks and its links with central bank policy:

Figure 2: Bundesbank educational animation at https://www.youtube.com/watch?v=mbrjSSFJoMo[1]
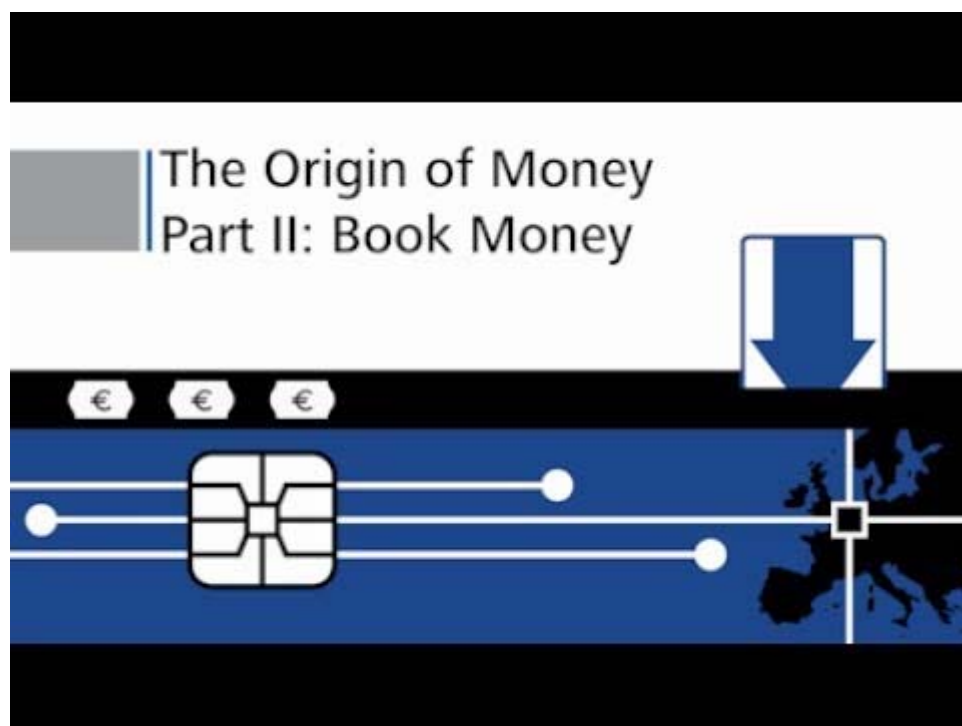
The banking sector thus injects money into the non-bank sectors when it lends, and removes it when
debts are repaid. In Table 10, repayments and debt service by each non-bank sector are shown as
£20/Year, while new loans are £30/Year per sector. With expenditure of £220/Year and incomings
(of both income and credit) of £230/Year, each sector is able to increase its deposits by £10/Year.

However, this increase in the deposit accounts of the non-bank sectors is financed by an identical
increase in the debt that each sector owes to the banks. The increase in private sector loans (when
new loans exceed repayment of old loans) thus reduces the net assets of the non-bank sector by
precisely as much as bank deposits rise. Net savings therefore remain at zero.

Table 10: Income & Expenditure Table including Banks

Year 0	Poor	Rich	Firms	Banks	Zero Check
Poor	-220	100	100	20	0
Rich	100	-220	100	20	0
Firms	100	100	-220	20	0
Banks	30	30	30	-90	0
Deposits change	*10*	*10*	*10*	*-30*	*0*
Net Assets change	*-10*	*-10*	*-10*	*30*	*0*
Net Savings	*0*	*0*	*0*	*0*	*0*

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[1] The preceding animation explains government cash creation:
https://www.youtube.com/watch?v=4wTKruE6q7Y.

The long-term consequences of bank money creation for the capacity of the non-bank sector to save are in fact worse than a net savings level of zero: in a pure bank-money-creation system, the net equity position of the non-bank sector must be negative. This is because banks *must* have positive equity—their Assets *must* exceed their Liabilities. A bank with negative equity is bankrupt. Non-bank entities can however operate with negative net worth so long as they can meet their financial commitments as and when they become due.

Since in a monetary system, every Asset is another entity's Liability, then the necessary maintenance of a positive equity position for the banking sector means that the non-bank sectors in the aggregate tend towards negative equity.

This is illustrated in a second Minsky model in which the banking sector is the sole provider of money. Without considering where net positive equity might originate from, I set the initial equity of all sectors—Poor and Rich Households, Firms and Banks—to £10 each.

Aggregate Equity in the model then remains at £40 over time, since bank money creation increases the Assets and Liabilities of the Bank and non-Bank sectors equally, leading to no net equity creation. What happens instead is a redistribution of Equity as the money supply and GDP grow as the Banking sector lends to each of the Poor, Rich and Firm sectors. I set the rates of lending and repayment proportional to GDP, with parameter values chosen to mimic UK private debt growth data between 1982 and the 2008 crisis (household debt rose at an average of 6% of GDP per year, as did corporate debt).

Spending in this model is based on the amount of money in each sector's deposit account, and the flow rates have been chosen so that the long run aggregate velocity of money is 1.33, which is in the middle of the post-1982 range. GDP grows exponentially as the money supply grows. The rates of spending between sectors then distributes this money between the deposit accounts and the bank's equity account.

Table 11 shows the initial conditions for the model: the total money supply (the sum of the amounts in the deposit accounts of Poor and Rich Households and Firms, plus the Equity account of the Banking Sector) is £40, GDP is £110.8/Year (the velocity of money starts high and then falls over time), and the total equity in the system is evenly distributed between the four sectors.

Table 11: Initial conditions for bank money creation model

Year 0	Poor	Rich	Firms	Banks	Totals
Bank Balances	10	10	10	10	40
Spending on Poor		2.5	5	10	
Spending on Rich	25		10	10	
Spending on Firms	33.3	5		10	
GDP					110.8
Debt	0	0	0	0	0
Debt Ratio					0%
Equity	10	10	10	10	40

The endgame takes 27 years to manifest itself: all the aggregate equity of £40 is concentrated in the Banking Sector, and the non-bank sectors end up with aggregate negative equity.

Figure 3: Bank money creation only, leading to negative equity for the non-bank sector
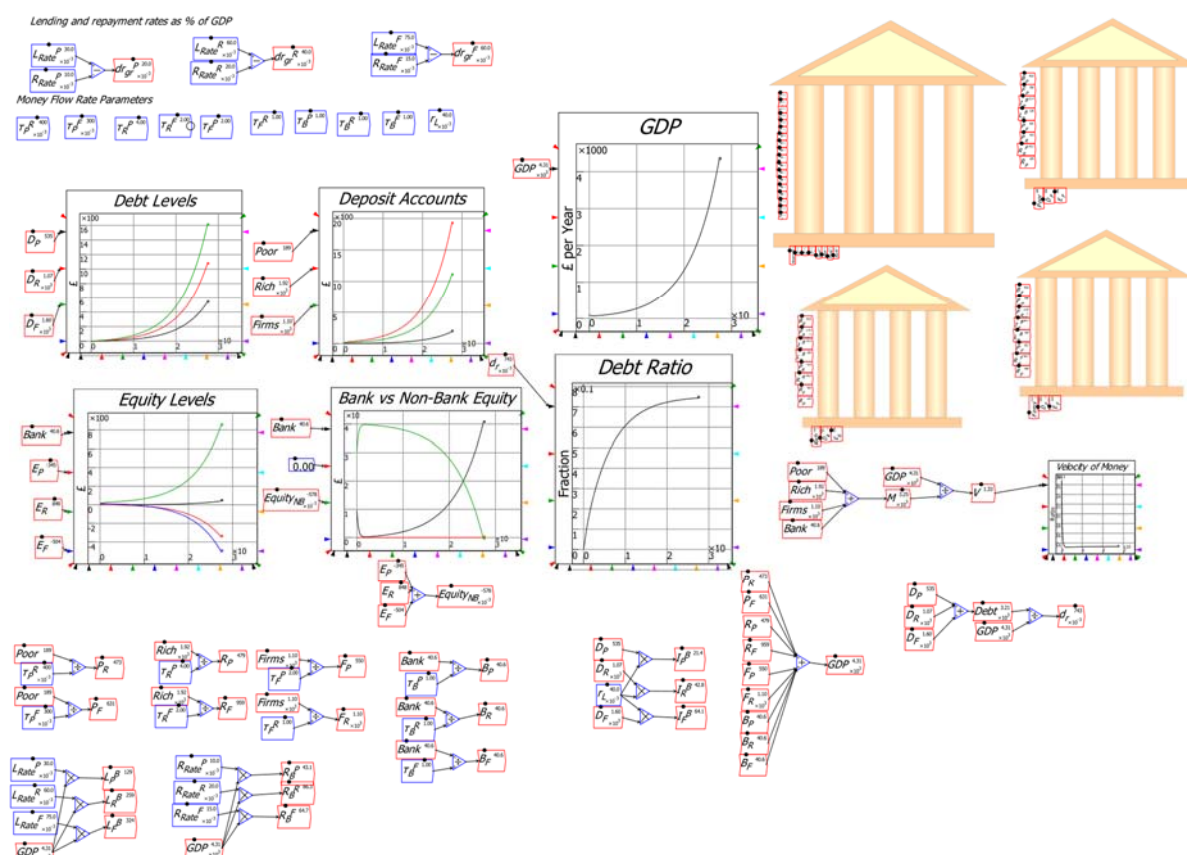
Poor households have a negative equity of £341 (roughly 8% of GDP), and Firms have negative equity of £498 (about 12% of GDP); only Rich households have a positive equity position (£839, roughly 20% of GDP). At this point, the non-bank Sectors have an aggregate Equity of zero; running the simulation further results in the negative equity of Poor Households and Firms more than outweighing the positive equity of the Rich Households.

Table 12: Model outcomes when aggregate Non-Bank Equity turns negative

Year 27.3	Poor	Rich	Firms	Banks	Totals
Bank Balances	187	1896	1087	40.1	3210
Spending on Poor		474	544	40.1	
Spending on Rich	468		1087	40.1	
Spending on Firms	624	948		40.1	
GDP					4265
Debt	529	1057	1586	0	3172
Debt Ratio					74%
Equity	-341	839	-498	40.1	40

This points out a fundamental problem with relying only upon private money creation to enable private savings. All sectors have a legitimate desire to save: to accumulate a surplus of their financial assets over their financial liabilities so that they have positive Equity. But since Banks must maintain positive equity, *the aggregate equity of the Non-Bank Sectors—**absent any equity created by means other than bank-created money**—must be negative*.

It is then only a question of which sectors are driven into negative equity. In this simulation, Poor Households and Firms are in negative equity, while Rich Households accumulate positive equity.

Other simulations with different parameters might reach different distributional results, but the aggregate picture will hold: aggregate non-bank Equity will be negative, so that in the aggregate, the private sector is dis-saving.

Obviously in this environment, setting aggregate savings targets for households, regardless of their income levels, is futile: if private-debt-created money is the only form of money in the economy, then for private banks to be viable, their need to maintain positive equity means that private sector savings must in the aggregate be negative. If Households are somehow enabled to maintain positive equity, then Firms will be driven into negative equity.

What is needed is a sector that can "dis-save"—inject more into the economy than it takes out—while creating positive Equity for the Non-Bank private sector.

Model 2: Money creation by government

If we consider the Government as Sector ??? in Table 9, then we get the situation shown in Table 13. In this case, the withdrawals from the economy are taxes; the injections are government spending, in transfer payments (welfare, social security, scholarships, etc.) or payments for services (infrastructure construction, research funding, wages for government workers, etc.). Leaving aside for the moment the question of how the Government funds an excess of injections into over withdrawals from the private sector, government payments (which increase the deposit accounts of Non-Bank recipients in private banks[2]) do not come with an obligation to repay, as is the case with bank payments (credit) which comes with an equivalent obligation to repay (an increase in private debt). Government payments in excess of government taxation thus creates net financial assets for the private sector.

Table 13: Income & Expenditure Table including Government

Year 0	Poor	Rich	Firms	Government	Zero Check
Poor	-220	100	100	20	0
Rich	100	-220	100	20	0
Firms	100	100	-220	20	0
Government	30	30	30	-90	0
Net Savings	***10***	***10***	***10***	***-30***	***0***

The Minsky model shown in Figure 4 illustrates these dynamics—without yet considering how government spending is financed. In this simulation, spending by Poor and Rich Households and Firms is based on the level of their deposit accounts, as in the previous Bank-only model. Total Equity starts at £100, with £20 in Poor Households, £50 in Rich, £20 in Firms and £10 in Bank equity (Bank activity is not considered for reasons of simplicity).

Government spending and taxation start at 30% of gross income for each sector, and stays at that level for ten years, so that net government spending is zero. GDP remains constant at £900/Year, because with no money creation, the only way for GDP to vary is for the rates of spending by each sector to change, and they are kept constant in this simulation.

Then in Year 10, the government decides to stimulate the economy by raising the spending rate to 31%. This causes GDP to rise exponentially to £2,432 by Year 20. Government debt also rises from zero to £153, and private equity rises from £100 to £253—*in other words, private equity rises by precisely as much as government debt rises.*

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[2] If banks receive payments from the government, then it increases their Assets and hence their Equity.

Figure 4: Basic Government money creation

In Year 20, the government decides to balance its budget and increases the taxation rate to 31%, the same as the spending rate. Net government spending falls to zero, and GDP, government debt and private equity all flatline.

In Year 30, the government decides to run a surplus by increasing the taxation rate to 32%. Net government spending turns negative, and government debt falls—by precisely the same amount that aggregate private equity falls.

By Year 40, government debt has fallen to zero, and both private equity and GDP return to the same level they were before the government stimulus.

The lessons of this model are that if the private sector is to save in the aggregate, then the government has to spend more than it takes back in taxes, because private sector savings are identical to the increase in government debt: *unless the government spends more than it takes back in taxation, the private sector cannot increase its aggregate savings*.

The next simulation shown in Figure 5 has the government maintaining the spending rate at 31% while the taxation rate is 30%. With different private sector flow rates to the last simulation (so that the velocity of money would be lower), this results in a nominal GDP growth rate of 2.23%—which is the size of the excess of government spending over taxation multiplied by the velocity of circulation of money (which rises slightly over time to 2.23 in this simulation).

Figure 5: Net government spending causes rising nominal GDP

The final Minsky model shows the essence of how government finances spending in excess of taxation. The actual operations, for legal reasons, involve:

- The Treasury issuing bonds equivalent to the difference between expected spending and expected taxation;
- The Central Bank treating the Treasury's net spending as fully financed once the Supply Bills have been passed by Parliament;
- The bonds being sold to the private financial system (and they have always been at least fully subscribed); and
- The Central Bank then buying (and selling) government bonds from the private financial system.

The net effect is that net buying of government bonds by the Central Bank creates new money.

This simplified model abstracts from the sale of government bonds to the private financial sector to focus on the net effect in the last operation: purchases of government bonds by the Central Bank, though indirect, finance Treasury's net spending. Unlike any other institution, a government can borrow from its bank to pay the interest bill on its debt: payment of interest by the Treasury to the Central Bank increase government debt to the Central Bank and increase the Central Bank's Equity at the same time (though as observed in a recent Bank of England note, Central Banks, unlike private banks, can also operate with negative equity: see https://bankunderground.co.uk/2017/07/03/central-bank-balance-sheets-past-present-and-future/).

Table 14: Central Bank operations to finance Treasury net spending

	Assets	Liabilities		Equity
Flows ↓ / Stock Variables →	D_G	Reserves	Treasury	E_CB
Initial Conditions	100	100		
Spending on Firms		G_F	-G_F	
Spending on Poor		G_P	-G_P	
Spending on Rich		G_R	-G_R	
Taxes on Firms		-T_F	T_F	
Taxes on Poor		-T_P	T_P	
Taxes on Rich		-T_R	T_R	
Change in government debt	Gov_Net		Gov_Net	
Interest on government debt			-I_G	I_G
Borrowing to service debt	I_G		I_G	

The reason that this is possible—though made complicated by legal rules on Treasury financing—was first elucidated in 1945 by the then President of the New York Federal Reserve, Bearsley Ruml, in a paper entitled "Taxes for Revenue are Obsolete". It is worth quoting this piece a length,[3] since it shows the perspective of a practical Central Banker compared to the mainstream economic theorists who have dominated Central Banks since the 1970s:

> *The necessity for a government to tax in order to maintain both its independence and its solvency is true for state and local governments, but it is not true for a national government. Two changes of the greatest consequence have occurred in the last twenty-five years which have substantially altered the position of the national state with respect to financing its current requirements.*
>
> *The first of these changes is the gaining of vast new experience in the management of central banks.*
>
> *The second change is the elimination, for domestic purposes, of the convertibility of currency into gold.*
>
> Final freedom from the domestic money market exists for every sovereign national state where there exists an institution which functions in the manner of a modern central bank, and whose currency is not convertible into gold or some other commodity.

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[3] I will include a copy of this paper in my submission, since it is hard to locate online.

> The United States is a national state which has a central banking system,
> the Federal Reserve System, and whose currency, for domestic purposes, is
> not convertible into any commodity. It follows that our Federal
> Government has final freedom from the money market in meeting its
> financial requirements Accordingly, the inevitable social and economic
> consequences of any and all taxes have now become the prime
> consideration in the imposition of taxes. In general, it may be said that
> since all taxes have consequences of a social and economic character, the
> government should look to these consequences in formulating its tax
> policy. ***All federal taxes must meet the test of public policy and practical
> effect. The public purpose which is served should never be obscured in a
> ta program under the mask of raising revenue.*** (Brockway, Saunders et al.
> 2017, pp. 35-36. Boldface emphasis added)

This insight—that the government does not need to tax in order to spend—may seem preposterous,
given the emphasis of mainstream economists on the need for governments to run balanced
budgets over the long term, following the concept of "Ricardian Equivalence" developed by Robert
Barro (Barro 1989, Barro 1996), and given the widespread belief that the government should
"balance its books" across the political spectrum and the media.

But in fact, it is the arguments behind "Ricardian Equivalence" that are preposterous. Barro's
argument starts with the proposition that the government *must* run a balanced budget over the long
term:

> "a cut in today's taxes must be matched by a corresponding increase in the
> present value of future taxes (Barro 1989, p. 39)

As Ruml emphasises above, this is only true of governments that do not have a Central Bank—which
includes regional governments (councils, Scotland, Northern Ireland) and Eurozone countries. But
Barro applies this analysis to all governments.

Barro then asserts that the private sector will respond to a government deficit by reducing its
spending by the same amount:

> Suppose now that households' demands for goods depend on the expected
> present value of taxes—that is, each household subtracts its share of this
> present value from the expected present value of income to determine a
> net wealth position. (Barro 1989, p. 39)

When some economists objected to this argument on the basis that households would not save
money to pay future taxes that they expected to be levied after they died, Barro replied with an
argument that is transparently delusional:

> The argument fails if the typical person is already giving to his or her
> children out of altruism… a network of intergenerational transfers makes
> the typical person a part of an extended family that goes on indefinitely. *In
> this setting, **households** capitalize the entire array of expected future taxes,
> and thereby **plan effectively with an infinite horizon***. (Barro 1989, p. 39)

You have also lived through a practical experiment that shows that the government—defined to include the Central Bank—can spend simply by crediting private bank accounts: Quantitative Easing. For several years after the 2008 crisis, the Bank of England purchased £200 billion worth of bonds from the private financial sector every year—and the government levied *no* taxes to pay for it. It simply made a credit entry in the accounts that private banks have with the Bank of England (their Reserve accounts), and in return financial sector firms handed over bonds with a face value of £200 billion.

The same principle applies to Treasury spending on the private non-financial sector (Households and Firms). The government can easily finance spending in excess of taxes, via money creation by the Bank of England.

The essential insights of this section are:

- That (leaving aside international financial flows) the non-bank sectors of the economy can only save money if the government spends more than it takes back in taxation; and
- The government can afford to finance this excess since it has a Central Bank (the Bank of England) that finances government activity, and whose money is accepted by the non-bank sectors, and is not linked to a commodity (such as Gold);
- If the government instead aims to run a surplus and cuts its expenditure, then these cuts will reduce GDP by the same amount;
- If the government's actual excess of spending over taxation is less than the desired savings targets of the private sectors, then they will either also cut expenditure, leading to a sharper decline in nominal GDP, or borrow from the banks, which can set off an asset price bubble that gives the appearance, but not the reality, of an increase in private sector equity.

Other Issues: Asset Markets and the Current Account

Asset Markets

Asset market purchases—Housing and Shares—are the main methods by which Households and Firms have attempted to achieve positive equity, and hence the appearance of savings, in the last 30 years. This has superficially worked because the price in asset markets is set by the marginal transaction—the buying and selling actions of people actually trading on the market. But this price is then multiplied by the entire outstanding stock of assets to derive an implied aggregate net worth for the asset class. This implied net worth is then recorded as an Asset of the Private Sector

But it is a notional asset only, since if all house or share owners tried to actually turn their implicit gains (in terms of the increase of the implied worth of their properties and shares since the time of purchase) into actual gains, the volume of selling would overwhelm buying and prices would collapse. Then nominal value of these assets would collapse (as happened in the USA in particular during the Great Recession), putting their owners (including banks) into negative equity.

On the other side of the ledger, most assets are purchased with money borrowed directly or indirectly from the banking sector: mortgage credit makes up of the order of 80% of the money used to buy properties, and margin lending and other forms of leverage account for of the order of 50% or more of share purchases.

This increase in the liabilities of the private non-bank sector to the banks does not go away when asset prices fall, so the private sector can go from apparent high net worth to negative net worth very quickly.

Since bank assets also include shares and property, then the financial sector can also collapse, as it did in the Great Recession, because the plunge in asset prices can rapidly drive financial firms into negative equity.

This UK has followed the asset-bubble-route-to-riches ever since the early 1980s, when banks were encouraged into mortgage lending that had previously been the province of building societies.[4] The unanticipated aspect of these changes was that building society "peer to peer" lending, which does not create money and does not add to aggregate demand, was replaced by bank lending, which does create money, and does add to aggregate demand.

The intention of these policies was to democratise home ownership, but the effect of this introduction of net credit was to drive house prices up and, ultimately, to drive home ownership down, making it inaccessible to the majority of young people today. Inflation-adjusted house prices are now 2.5 times what they were in 1988 (see Figure 6).

Figure 6: Rising household debt and rising house prices

Household Debt and House Prices UK

BIS Data

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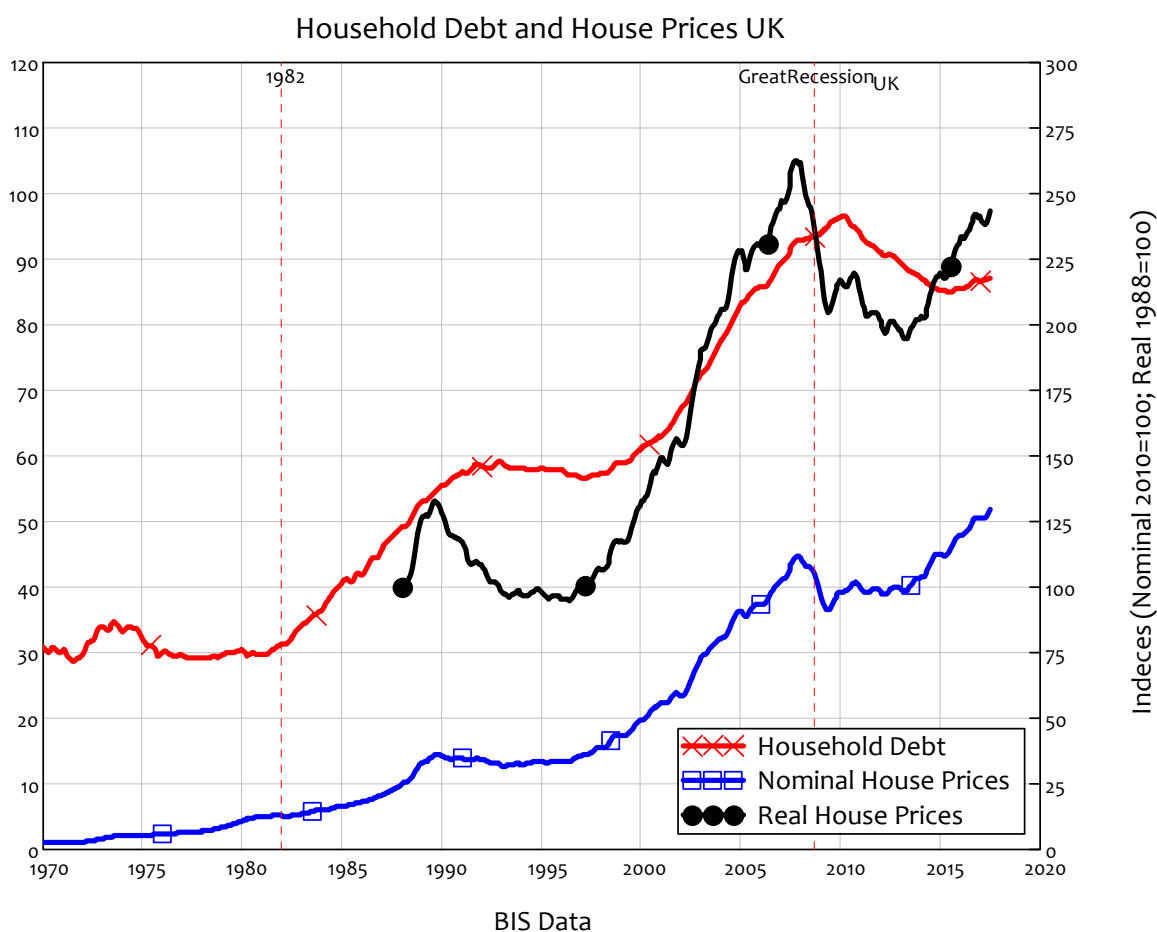
[4] The key regulatory measures included Mortgage Interest Relief At Source (MIRAS) and Right to Buy, but there were many others.

The causal mechanism is that the physical flow of demand for housing is predominantly the flow of new mortgages, divided by the price level, so that there is a link between the level of new mortgages and the level of house prices. There is therefore a link between change in the level of new mortgages, and change in house prices (see Figure 7).

Figure 7: Accelerating household debt causes rising house prices[5]
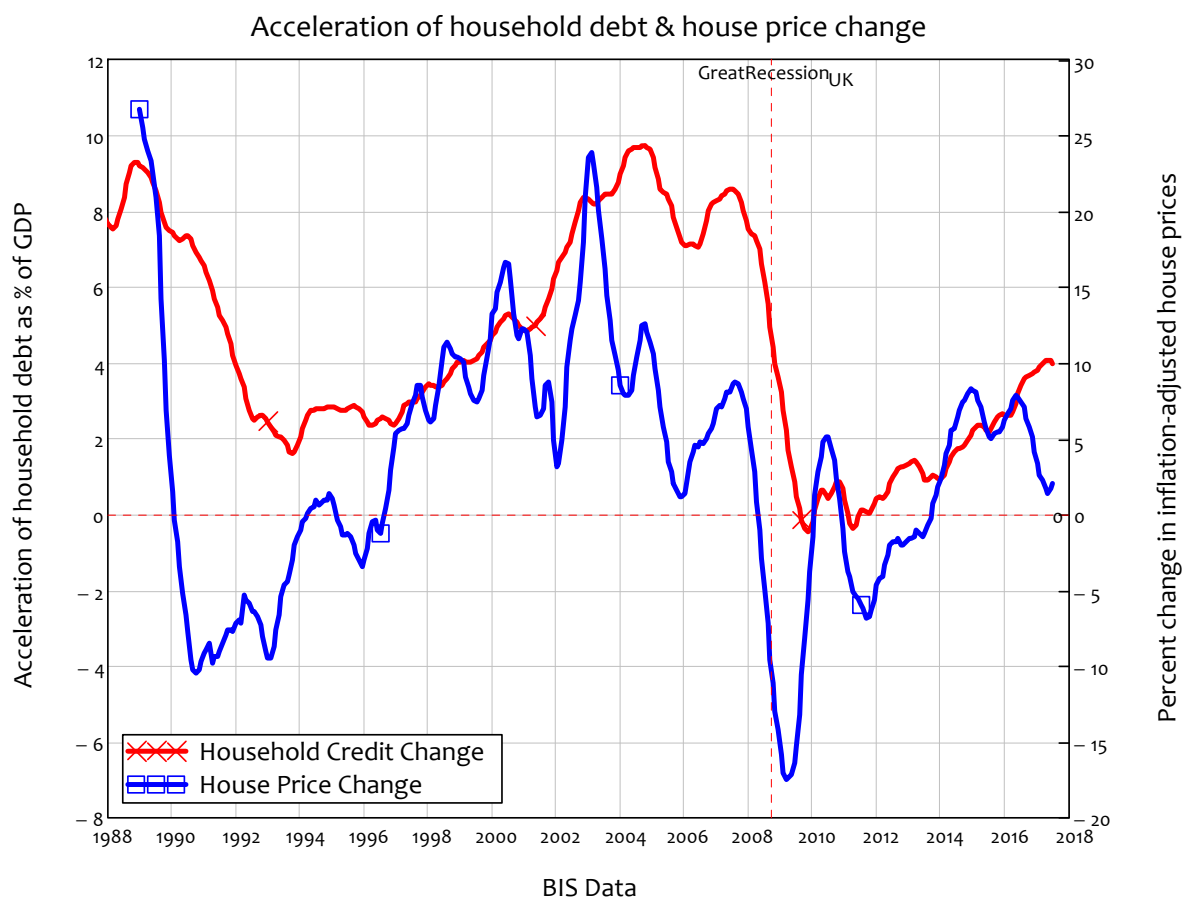
This levered increase in house prices has been matched by an increase in corporate sector leverage which commenced at the same time (see Figure 8).

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[5] The BIS does not provide a separate data series for mortgage debt, but since mortgage debt is by far the largest component of household debt, the correlation (which in this case does imply causation; we have confirmed this link using Granger causality tests) is still reasonably strong at 0.5.

Figure 8: The rise in corporate debt began at the same time as the rise in household debt

UK Private sector debt by sector
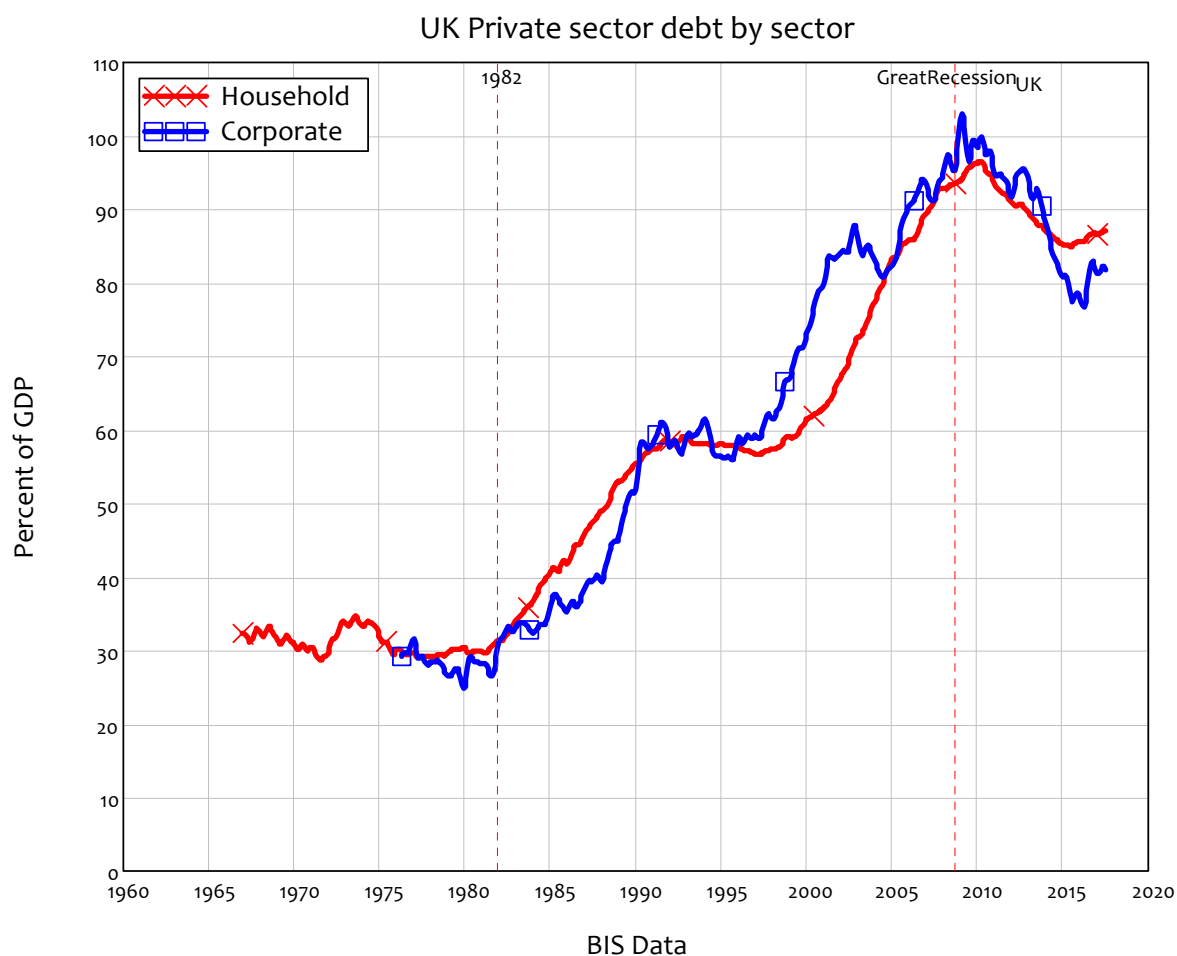
Data assembled by the Bank of England after the financial crisis revealed just how exceptional the period since 1982 has been. For the century before 1982, private sector debt never exceeded 73% of GDP, and there were numerous occasions where credit (which is identical to the annual change in private debt) was negative. Since 1982, private debt rose to almost three times the pre-deregulation maximum, and credit was exclusively positive until the Great Recession.

Private debt is still far higher than the pre-deregulation level: as Figure 9 shows, even after the deleveraging that has occurred since the Great Recession, private debt now stands at 170% of GDP, versus 60% in 1982.

Figure 9: Private debt and credit in the UK since 1880

UK Private Debt and Credit since 1880

Bank of England Data
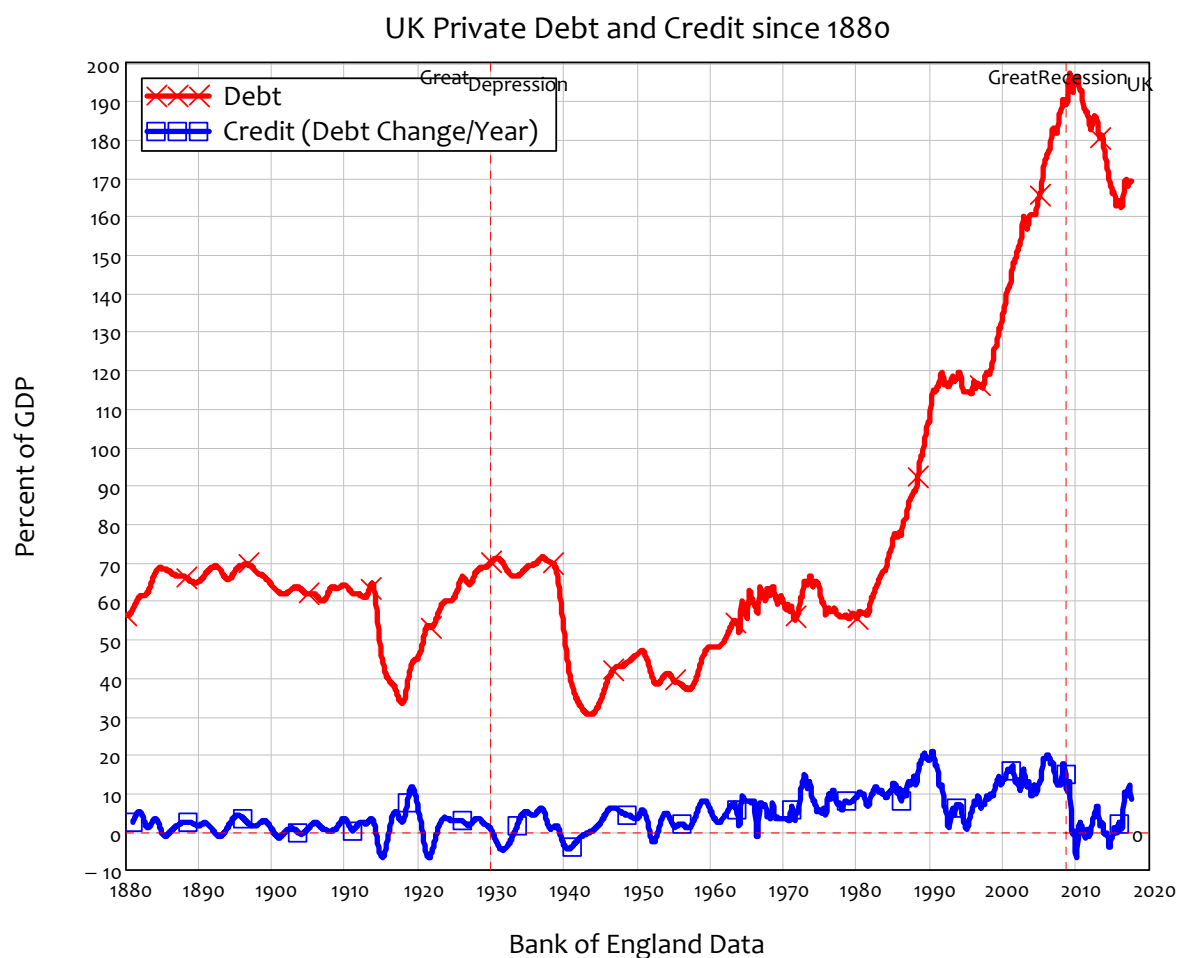
Quantitative Easing stopped the private sector plunging into negative equity by drastically increasing asset prices. But this has come at the additional cost of the inability of even moderately high-income earners to buy into the housing market, as QE benefited those who already owned assets (the Rich Households in my previous models).

This imbalance, coming on top of the impact of the Great Recession and then years of Austerity, is a major contribution to the level of social discord in the UK today. It can only be addressed by policies which reduce both the level of private debt, and the level of asset prices, without undermining the solvency or liquidity of either the Bank or non-Bank sectors. I have a set of proposals I call a "Modern Debt Jubilee" to achieve these. My only available statement of this is quite dated and uses Australian data (see http://www.debtdeflation.com/blogs/manifesto), but I will update these and discuss with the Committee, should the opportunity arise.

The Current Account

The other way that all domestic non-Bank sectors can achieve positive savings and increasing income is if the country's current account is in surplus. Then, the mechanisms of turning a surplus of foreign currency into domestic currency causes the Bank of England to create pounds, which are credited to private bank accounts.

However, since the UK is running a current account deficit, the opposite effect applies: UK pounds are helping to create Euros and Renminbi in Germany and China respectively, and so on. This makes it additionally hard for Households to save, as can be seen by drawing up an Income and Expenditure table where the sectors are now the UK Private Sector, the UK Government, and the Rest of the world (ROW). In the stylized example in Table 15, the Private and Government sectors each spend £200/Year on the other two sectors (including the Rest of the World) while the Rest of the World spends only £190 in total on the domestic sectors. This causes £10/Year dis-savings by the domestic sectors, which can only be made up by the government spending commensurately more than it taxes.

Table 15: International Income and Expenditure Table

	Private UK	Government UK	ROW	Zero Check
Private UK	-200	100	100	0
Government UK	100	-200	100	0
ROW	95	95	-190	0
Net Savings	*-5*	*-5*	*+10*	*0*

This is clearly an unsustainable trend in the long run, but it can only be reversed by either improving the competitiveness of UK industry so that the current account gap ultimately closes, or by internationally coordinated policies to reduce current account imbalances.

Can policy affect the aggregate level of household saving?

The answer, clearly, is yes: but the policy may be unexpected. The policies needed to boost the aggregate level of household savings are:

- *For the government to inject more money into the economy by spending than it takes out in taxation*, thus enabling the private non-bank economy to spend less than it receives from the domestic economy; and
- *For the government to affect the economy's international competitiveness so that the current account deficit falls*, thus reducing the extent to which the deficit depletes the bank accounts of the private non-bank economy.
  - Policies here can include promoting industrial investment and R&D;
  - Reducing the relative value of the Pound Sterling to make domestic production competitive with offshoring, as John Mills has been arguing for decades now (Mills 2013, Mills 2017)

Without these aggregate level government policies, then the sum of Household and Corporate savings will be the mirror image of the government net spending position plus the current account: if (for example) the government runs a surplus of 1% of GDP and the current account deficit is 3% of GDP, then the sum of corporate and household savings will be *minus* 4% of GDP. The economy might still boom if, for example, the private sector borrowing from the banking sector is 20% of GDP rather than just 4% (as it was in 1990 and again in 2007), but the *net* position of corporate and household savings will still be minus 4% of GDP because, as shown in the previous section, borrowing from banks creates no net savings (the increase in money in deposit accounts is precisely offset by the increase in debt).

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