

Income Distribution, Household Debt, and Aggregate Demand: A Critical Assessment

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PRELIMINARY DRAFT - NOT FOR DISTRIBUTION

It is sometimes argued that the steep fall in household expenditure in 2008-2009 is linked to changes in income distribution and rising household debt-income ratios over the preceding period. In this story, increasing household debt-income ratios reflect increased consumption spending by households relative to income. Debt rose because households lower in the income distribution borrowed in order to maintain expected levels of consumption growth despite slower income growth. Debt-financed expenditure, the story continues, made an important contribution to the growth of aggregate demand until it was interrupted by the financial crisis of 2008.

In the paper, I ask whether this story is logically coherent and is consistent with the empirical evidence, and suggest that it is not. The rise in household debt-income ratios was not primarily the result of increased spending on currently-produce goods and services. There was not an increase in the share of household debt at lower points in the income distribution. And consumption inequality appears to have increased in line with income inequality. It does not appear that aggregate changes in household balance sheets were driven by efforts to maintain consumption standards by lower-income households. Instead, I suggest, rising household debt is essentially a financial phenomenon, driven by an increase in interest rates relative to growth rates. Rising inequality, on the other hand, has simply led to lower living standards for lower-income households, without any cushioning by increased borrowing. Consumption demand was maintained by luxury consumption by the rich, and by social spending misleadingly classified as household consumption.

1 It has been argued that inequality contributed to the 2008 financial crisis: High household debt was the result of lower-income households borrowing maintain consumption.

In recent years, the following argument has become widespread:

1. There has been a large increase in income inequality across households.
2. Since consumption propensities fall with income, this upward redistribution has tended to reduce consumption demand.
3. Whether because of habit formation, emulation effects, or other reasons, lower-income households have sought to maintain rising living standards despite slower income growth.
4. They have been able to do so thanks to increased borrowing in credit markets.

5. This increased borrowing by lower income households to maintain rising living standards, explains the rise in aggregate household debt relative to income.
6. The high household debt resulting from the previous steps played a central role in the financial crisis that broke out in 2008.
7. The rising consumption relative to income of lower-income households allowed by increased borrowing, helped sustain aggregate demand in the period prior to the crisis.
8. The inability of lower-income households to continue borrowing after the crisis, helps explain the slow recovery of demand over the past decade.

So the inequality-debt link helps explain great recession in two ways. First, the high level of household debt, and its treatment by the financial system, created the conditions for the financial crisis of 2008. Second, without rising debt to boost consumption, high inequality inevitably means lower consumption spending and a shortfall of aggregate demand. In the remainder of this paper, I refer to this as the distribution-debt-demand argument, or the DDD argument for short. The argument is most often made for the United States, but it has also been made for other countries and in more abstract form.

In this paper, I seek to critically evaluate this argument. Despite the fairly large literature that has developed various forms of the DDD argument, there are serious logical and empirical challenges for it which have not been adequately addressed. My focus is on steps 3, 4 and especially 5 from the list above. I do not directly address the role of household debt in the financial crisis; but of course weakness in the steps I do look at has implications for the later steps of the story. The paper is concerned with the US, and with the 1980-2007 period as compare with the previous postwar decades. I take no definite position on whether the DDD story might apply to other countries or periods; but of course if it fails in the setting to which it is most often applied, that should lead us to adjust our priors about its applicability elsewhere.

The important question is whether this claim, or some form of it, is useful for making sense of social reality. The shortcomings of individual papers are not important in themselves. But for concreteness, the criticism in this paper is focused in a particular set of papers, which we take to be representative of the argument in general. these fall into two groups. The first group of papers describe the concrete evolution of the US economy (and, occasionally, other economies) in terms of the links between income distribution, household debt, and aggregate demand. These include Aiginger and Guger (2014); Barba and Pivetti (2009); Barnes and Young (2003); Chinn and Frieden (2011); Cynamon and Fazzari (2015, 2013); Debelle (2004); Kucera, Galli and Al-Hussami (2013); McCombie and Spreafico (2015); Onaran, Stockhammer and Grafl (2011); Perugini, Hölscher and Collie (2015); Stockhammer (2009); Stockhammer and Wildauer (2015); Sturn and van Treeck (forthcoming) and van Treeck (2014). A second group of papers are theoretical

papers exploring how such links might operate in principle, in an abstract economy based on various standard assumptions. These include Carvalho and Rezaei (2016); Kapeller and Schütz (2015, 2014); Kucera, Galli and Al-Hussami (2013); Kumhof and Ranciere (2010); Nikiforos (2015); Palley (2009); Setterfield and Kim (2016) and Tavani and Vasudevan (2014). Most, though not all, of these papers are based on more or less self-consciously heterodox approaches. The most prominent non-heterodox statement of the DDD story is probably found in Rajan (2011); indeed the story is sometimes referred to as the “Rajan hypothesis.” (McCombie and Spreafico, 2015)

There are a number of claims that must be true for the DDD story as a whole to make sense. First, there must in fact have been a large increase in income inequality. In this paper I do not challenge this first claim, but take it as given; but there are arguments that the increase in income inequality has been overstated. (Gordon, 2009)

Second, higher incomes should in general lead to a higher proportion of income being saved. For a given investment demand, this requires lower income - in other words, higher savings propensities imply weaker demand. This Keynesian consumption function is also not challenged here, but accepted as a background assumption.

Third, this general tendency of consumption to fall with increasing income inequality was not operative in the decades prior to 2007. During this period of rising inequality, consumption demand remained strong. This unusually high private consumption spending was driven by higher consumption at the bottom of the income distribution, whether motivated by an expectation that the previous rise in living standards would continue, a desire to match consumption standards of higher-income households (“Veblen effects”), or for some other reason.

Fourth, lower-income households maintained rising consumption in the face of stagnant incomes by increased credit-market borrowing. The rise in aggregate household debt-income ratios, in this story, mainly or entirely reflects increased borrowing to finance consumption. In some versions of the story, this is largely a supply-side phenomenon, with lower-income households increasingly able to obtain consumption loans. (Rajan, 2011) In the bulk of the papers considered here, it is driven by the demand side. But either way the increase in the stock of debt relative to income is taken to reflect a higher flow of new borrowing, which finances consumption spending.

These claims have some logical corollaries. Changes in debt stocks should in fact reflect changes in borrowing flows. Borrowing and debt should rise disproportionately at the bottom of the income distribution. And consumption inequality should rise by less than income inequality. (With stable consumption propensities, the share of fractile consumption would change by the same as the share of fractile income.)

In the remainder of the paper, I critically evaluate these claims. In my view, there are serious problems with the story both at an abstract level, with its logic, and at a more concrete level, with its correspondence to the empirical evidence.

On the more abstract level, there are two fundamental issues. First, proponents of the DDD story, like most of the economics profession, conceive of household debt in terms of consumption loans. But as Section 2 points out, most household debt is in fact incurred to finance acquisition of assets – homes most importantly, as well as cars, and college degrees, which resemble assets in economic terms even if they are not normally counted as such. Second, consumption involves not just expenditure for the consuming unit, but creates income for other units. So the relationship between consumption and balance-sheet positions at the level of the individual unit cannot simply be extrapolated to the economy as a whole. This is discussed in Section 3, with some simple mathematical examples showing how increased consumption at the level of the individual unit can reduce the aggregate debt-income ratio rather than raise it. Once this possibility is taken into account, there is no a priori reason to assume that increased debt-financed consumption at the household level will result in higher debt-income ratios for the household sector as a whole, just as attempts to save more by individual households do not necessarily lead to greater saving in the aggregate.

On the more concrete level, the first empirical problem reflects these two conceptual issues. Debt is incurred for purposes other than current spending – including, importantly, interest payments on current debt – and the debt-income ratio has a denominator as well as a numerator. So changes in the debt ratio do not straightforwardly reflect new borrowing by households, let alone new consumption borrowing. A consistent decomposition of the historical evolution of household debt ratios in the US shows that the entire rise since 1980 can be explained by the combination of higher interest rates and slower nominal income growth; in the aggregate, the household sector did not borrow any more during the period of rising debt ratios prior to 2007 than it did during earlier decades in which debt-income ratios were flat. So as Section 4 shows, the rising debt ratio cannot be assumed to reflect increased borrowing, however motivated. In addition, most versions of the DDD story take at face value the rising consumption share reported in the national accounts. But in fact, as discussed in Section 5, the rise in consumption relative to income is entirely the result of increasing social consumption. Most importantly, there has been a steady increase in federal healthcare payments under Medicare and Medicaid, which are reported as household consumption in the national accounts. Once these third-party and noncash forms of consumption are stripped out, consumption expenditure by households did not increase relative to disposable income between 1980 and 2007.

While there is no link between consumption spending and rising debt ratios at the aggregate level, it might still be the case that increasing income inequality shifted the distribution of debt among households. Surprisingly, none of the papers mentioned above directly address the distribution of household debt. But this question can be straightforwardly answered with the Survey of Consumer Finances (SCF). Section 6 shows that, according to the SCF, there is little debt in the bottom of the income distribution, and no significant downward shift in the distribution of

debt. A second question is whether lower-income households have, in fact, been able to maintain rising consumption standards in the face of stagnant incomes, whether through increased debt or through other means. Answering this question is more difficult, since there is no comprehensive data on household consumption covering the relevant period. But most empirical studies of the issue conclude that between 1980 and 2007, consumption inequality basically tracked income inequality. This work is described in Section 7.

2 Debt is mainly incurred to finance asset positions, not consumption.

In orthodox economic theory, household debt is normally conceived as consumption loans. In this view, households borrow in order to achieve a path of consumption different from their path of income. The classic example is Samuelson (1959).¹ In the conventional version, lifetime consumption is still equal to lifetime income; consumption is just being shifted over the lifecycle. In more heterodox versions, such as a number of the DDD papers, credit-market borrowing can result in a consumption path that does not converge with the path of income, resulting in a debt stock that rises until some financial constraint is reached. (Orthodox theory is willing to contemplate such paths only for the public sector.) But in any case, the role of debt is to finance consumption in excess of current income. In this framework, debt is equivalent to negative saving, and assets are equivalent to positive saving. Households whose cumulative consumption to date exceeds their cumulative income hold debt, and households whose cumulative income exceeds their cumulative consumption hold assets. The normal case, in this framework, is for the household to have assets or liabilities but not both.

This analytic framework is reasonable for discussing the debt of sovereign governments. Sovereigns do normally use credit-market borrowing to bridge gaps between current expenditure and current income. Most governments do not accumulate significant (financial) asset positions. And while those that do so, in the form of sovereign wealth funds and the like, do not normally reduce their outstanding debt to zero first, it is the case that governments with large sovereign wealth funds tend to be those with relatively low public debt ratios. CITE NEEDED For other economic units, the orthodox framework described in the previous paragraph is less suitable. For units other than sovereign governments, debt is mainly incurred to finance assets, not to finance current expenditure. Businesses, especially smaller and younger ones, may also issue debt to finance operating losses. But for households, debt is overwhelmingly used to finance asset positions. This is also true of state and local governments. (Mason and Jayadev, forthcoming) This means that conceiving of debt in terms of a tradeoff between current and future expenditure is fundamentally misguided. Debt transactions do not normally involve any intertemporal component. They involve trading off two future payment streams – the income

¹Arguably the purpose of the consumption loan model in this paper has been misinterpreted. Samuelson's goal was not primarily to analyze interest rates in a world of consumption loans, but to demonstrate the efficiency of public retirement provision by creating a model in which private retirement saving would be inefficient. (Mehrling, 2014)

or services produced by the asset and the interest and principal on the debt that finances it – that will take place over comparable periods. Indeed, far from debt being a tool to move future income into the present, most economic units make an effort to match the time profile of assets and liabilities.

For households, asset and debt positions normally expand together. By far the most important form of household debt, accounting for more than 70 percent of total household debt through this period, is home mortgages. (Brown et al., 2013) The next most important forms of household debt are auto loans and student debt. The latter does not finance an asset recognized in the national accounts, but college degrees do function substantively as assets in many respects. In the 2013 Survey of Consumer Finance, 80 percent of household debt is reported to be incurred to finance purchase of a primary residence. Another 4 percent is incurred to purchase nonprimary residences and to improve existing residential properties. Five percent finances vehicle purchases and 7 percent finances education. Consumption loans account for only 4 percent of household debt. (See Table 1.)

Table 1: Share of Household Debt by Purpose, Various Years

	1989	1995	2001	2007	2013
Primary residence					
Purchase	71.3	78.0	77.2	79.8	79.6
Improvement	2.4	2.0	2.0	2.3	1.7
Other residential property	2.3	2.4	1.1	0.5	0.5
Non-residential investments	5.1	1.6	3.1	2.2	2.1
Vehicles	10.5	7.5	7.7	5.5	5.1
Goods and services	5.2	5.4	5.5	5.8	4.0
Education	3.1	3.1	3.5	4.0	7.1

Source: Survey of Consumer Finances

Because debt primarily finances assets, the negative relationship between debt and assets predicted by standard theory (and actually observed for sovereign governments) does not exist for households. Rather, debt and assets are positively correlated. A positive correlation between household debt and household assets is observed in the Survey of Consumer Finances in all years, exceeding 0.4 in the housing bubble years of the mid-2000s. This positive relationship between debt and assets is present whether or not one controls for income.

Debt is not simply used by households to finance asset ownership in general. It finances assets that are strongly linked to the household’s reproduction as a social and wage-earning unit.² Homes, cars and – more recently – higher education account for the overwhelming majority of household borrowing. Households typically borrow early in their lifetimes to purchase these assets, but the purpose is not to smooth consumption. On the contrary, the need to acquire these assets tends to amplify variation in current consumption, since all these forms of borrowing include

²This is widely recognized in public discussions of debt, if not by economists. For example, a recent article in the *Los Angeles Times* wonders if younger Americans have “abandoned what used to be one of the biggest rites of passage into adulthood: buying a car.” (“Millenials and Car Ownership? It’s Complicated,” Dec. 26, 2016)

substantial direct out-of-pocket costs, as well as indirect costs such as foregone wages during college attendance. It is almost never possible to finance the entire purchase of these assets with debt (the housing market of the mid 2000s is only a partial exception), so the transactions in which households incur debt early in their life cycles normally involve a *reduction* in current consumption. The familiar lifecycle model has little or no relevance for actual household borrowing. It is a puzzle why orthodox theory focuses so much on a category of borrowing that accounts for only a trivial share of household debt, while the fact that households – like businesses – borrow to finance investment, has been lost to view. By the same token, there is no connection between an increase in debt and a decrease in saving. Since the most important form of household borrowing – the mortgage – involves both acquisition of an asset and a substantial downpayment out of current income, higher household debt normally implies *higher* household saving.

Again: Household debt is incurred to finance assets. And assets are acquired in conjunction with definite life cycle events, and because they are required for particular forms of wage labor and household production. This is not a margin on which adjustments can be made to in response to shortfalls of current income. On the contrary, since declining income makes households less able to afford the upfront costs of asset ownership, a fall in income will normally be associated with less borrowing, not more. Concretely: Households borrow in order to own a home; to go to college or to send a child to college; and to own a car. These are not forms of consumption, but productive assets. All of them involve upfront and operating costs, as well as debt finance.

In general, we should expect higher income inequality to be associated with less borrowing, not more. As discussed in Section 6, household debt varies positively with household income; low-income households report very little debt. Mortgages, student loans, and to some extent auto loans, are specifically middle-income phenomena. Peak debt-income ratios are found near the high end of the income distribution, between the 75th and 90th percentile by income. Absolute debt levels rise monotonically with income. The most natural result of a more unequal distribution of income, therefore, would be a *fall* in household debt. Poor households do not own the assets for which most debt is incurred, and rich households can buy them outright.

As discussed in Section 4, the rise in household debt-income ratios is better explained by other factors – higher effective average interest rates faced by households after 1980, and slower nominal income growth. More generally, the fact that debt is primarily incurred to finance asset ownership, not current consumption, must be the starting point for any discussion of household debt.

3 The relation between spending, income and balance-sheet changes for individual units, cannot be extrapolated to the economy as a whole.

Many versions of the DDD story suffer from a fallacy of composition. They describe changes in the income, expenditure and balance sheets at the level of the household,

and then extrapolate those to the economy as a whole. But this is invalid. At the level of the household, income and expenditure can adjust independently, with the difference between them accommodated by changes in asset and/or liability positions. But at the level of the economy as a whole, income and expenditure are not independent. Expenditure for a buyer of goods and services, is income for a the seller. In analyzing aggregate developments, both sides of this equation must be accounted for.

Suppose some economic unit – let’s say a household – chooses to increase its consumption by x . This requires a payment of x to another unit. In concrete reality this will be a business. But since the sale price will resolve into wages and profits to households, for simplicity we will imagine the payment being made directly to another household. We’ll refer to the first household as the consuming household and the second as the producing household.

In the first step, the consuming household must make a transfer of x to the producing unit. This can involve one of two balance-sheet changes in the consuming household. Either it reduces its existing holdings of liquid assets by x , or it incurs a new liability to a bank or some other financial intermediary, in order to acquire a new liquid asset that can then be used to make the payment to the producer household.³ In other words, the new consumption may be financed either out of existing assets or with debt.

In the next step, the producing household adjusts its own balance sheet in response to the new income it has received. The household has symmetrical choices with the consuming household: It may use the payment to increase its own holdings of liquid assets by x , or it may reduce its liabilities by x . Of course the producing household may use the income for other purposes as well, such as buying goods and services in turn. This possibility will become important in a moment, but for now, it doesn’t matter, since the next household in turn will have the same choices. Eventually the initial purchase of x , however it was financed, must eventually result in one or more producing households increasing their liquid assets or reducing their liabilities, by a total of x either way.

Of course intermediate cases are possible. Changes in expenditure and income can each be accommodated by any mix of changes on the asset and liability side with debits for the consuming unit and credits for the producing unit each totaling x . Let’s call the share of incremental expenditure financed by a reduction in assets a_e , and the share of expenditure financed by an increase in liabilities l_e ; similarly the share of incremental income used to increase asset holdings a_i and the share of incremental income used to reduce liabilities l_i . $a_e + l_e = 1$; $a_i + l_i \leq 1$. Then an exogenous increase in consumption spending of x will increase aggregate debt by $x(l_e - l_i)$ – the amount of new spending times the share of incremental expenditure financed by debt, minus the share of incremental income used to reduce debt. So if we write aggregate debt as D and consumption spending as C , then:

³For present purposes, it makes no difference if the financial intermediary creates a new liquid asset in the form of a deposit, or transfers an existing asset to the consuming household.

$$\frac{dD}{dC} = l_e - l_i \quad (1)$$

Equation 1 says simply that the total change in debt resulting from an increase in consumption, is equal to the share of the expenditure financed by debt, minus the share of income used to pay down debt (or equivalently, to reduce new borrowing by the producing unit). This means that it is logically possible for an increase of consumption spending of x to be associated with an increase of aggregate debt by x , a reduction of aggregate debt by x , or any value between. Even in a world where all debt is consumption debt, there is no logical requirement for aggregate debt and aggregate consumption to move together. Nor is there any *a priori* reason to think that l_e will in general be greater than l_i , let alone that l_e is normally close to 1 and l_i is normally close to zero. If consumption loans reflect the difference between current income and current desired consumption, then they should respond equally to changes in both income and consumption. The statement “households borrow because their current income is insufficient to fund their required consumption” logically entails the statement “households would borrow less if their incomes were higher.” In practice, the values of l_e and l_i will depend on the composition of both the households purchasing and the goods purchased, as well as on the various factors that determine desired and feasible balance sheet positions. While it is reasonable, for reasons to be given immediately below, to suppose that l_e is normally somewhat greater than l_i , and hence that increases in consumption spending will be associated with *some* increase in aggregate debt, we cannot exclude the possibility that in some important cases $l_i > l_e$, meaning that higher consumption spending is associated with lower aggregate debt. We certainly should not assume that they move together one for one.

Normally, we are not interested in the aggregate debt stock D , but the debt-income ratio, which we will write here as d . So we have to consider the effects of increased consumption spending on both aggregate debt and aggregate income. Initially, the increased consumption spending of x also increases income by x . Now it becomes important that some of the incremental income received by the new consumption is used for additional consumption spending by the producing unit. In the familiar Keynesian logic, the income created by this spending creates additional spending in turn, with the total increase in spending different by a factor given by the multiplier, which we will write μ . So writing aggregate income as Y , we have:

$$d = D/Y$$

$$\Delta Y = \mu \Delta C$$

This means that even when increasing consumption spending does increase the stock of debt (the numerator of the debt ratio), it also increases aggregate income (the denominator of the ratio), leaving the overall effect on the ratio indeterminate. In a closed economy, these effects combine to give:

$$\frac{dd}{dc} \approx (l_e - l_i) - \mu d \quad (2)$$

Here c means consumption as a share of income. From Equation 2, we see that the increase in aggregate debt given by the first term on the right is offset by the rise in the denominator of the debt-income ratio, as given by the second term. The higher the current debt ratio, the more important this latter effect will be.

In an open economy, some of the increased consumption spending will fall on foreign goods rather than domestic ones. This portion of spending does not imply any balance sheet changes for domestic units. So writing the incremental import share as m , we have:

$$\frac{dd}{dc} \approx l_e - (1 - m)l_i - \mu d \quad (3)$$

Here we see that in an open economy, the effect of consumption on the debt ratio will be smaller, since consumption spending will create less new (domestic) income that can be used to pay down existing debt. In the extreme case, as m approaches one, the effect on domestic income will vanish; for the same reason as m approaches one the multiplier will approach zero. So in the case of an arbitrarily small economy, the derivative of the debt ratio with respect to new consumption spending will approach the share of incremental consumption financed through debt, exactly as for a household. This makes sense, since in a very small, open economy, Keynesian logic ceases to operate and the economy can be treated the same as an individual unit.

but for the normal case of an economy where Keynesian aggregate demand operates, the effect of increased consumption propensities on the aggregate debt-income ratio is ambiguous. And the higher we believe the multiplier to be, the more seriously we should take the possibility that increased consumption spending by households will actually cause the household debt-income ratio to decrease.

It is striking that almost all versions of the DDD story ignore the relationship between expenditure and income, even though many are written within a broadly Keynesian or Post Keynesian framework and this relationship is central to Keynes' analysis. Along the same lines, it is striking that so many of the authors here treat low *realized* savings as directly reflecting the savings propensities of individual households (as conditioned by income distribution). In Keynes' analysis, individual savings decisions affect aggregate demand and income, *not* aggregate savings; aggregate savings is entirely determined by business investment and similar sources of autonomous demand.

It is common to see DDD papers making claims to the effect that increased borrowing by lower-income households raised aggregate demand and aggregate debt-income ratios, and reduced the aggregate savings rate. There is never an acknowledgement that insofar as such spending raised income – which is what it means to raise aggregate demand – that would *reduce* the realized debt-income ratio. It is perfectly possible, as demonstrated in this section, for this second effect to dominate

– for an autonomous increase in household spending to result in a lower debt-income ratio for the household sector as a whole. We do not claim that this was necessarily true for the US between 1980 and 2007, but it is a serious analytic weakness not to even consider the possibility. This is especially true given that, as documented in Section 4, changes in income growth play a central role in historical movements in debt-income ratios. The acceleration of household debt growth in the 1984-1993 period relative to the previous decade (from 0.2 points per year to 3.2 points per year) is mainly (1.7 points out of the 3 point acceleration) the result of slower nominal income growth, as opposed to faster absolute debt growth. As shown in Sections 6 and 7, the claim that lower-income households sustained consumption spending via higher borrowing faces serious empirical challenges. But insofar as this did occur, it may well have *lowered* the sector’s overall debt-income ratio.

4 *Changes in household debt ratios are not mainly driven by variation in new borrowing.*

An assumption in most discussions of household debt is that changes in the debt-income ratio, are equivalent to new borrowing. This implicitly assumes that the growth rates of income are equal to the average interest rate on household debt, and that defaults and other non-borrowing changes in the stock of debt do not play an important role in the evolution of the debt ratio. Neither of these assumptions is justified.⁴

For any unit or sector, one can define the evolution of leverage over time as:

$$b_{t+1} = d_t + \left(\frac{1+i}{1+g+\pi}\right)b_t + sfa_t$$

$$\Delta b_t = b_{t+1} - b_t = d_t + \left(\frac{i-g-\pi}{1+g+\pi}\right)b_t + sfa_t \quad (4)$$

where b is the ratio of gross debt to income, d is the ratio of the borrowing – that is, deficit net of interest payments – to income, i is the *nominal* interest rate, g is the *real* growth rate of GDP, and π is the inflation rate. sfa_t is the stock-flow adjustment term and captures any difference in debt stocks that cannot be attributed to either interest payments or new borrowing. This last term is needed to capture measurement errors that lead to the observed debt stocks being different from those implied by the previous period’s debt stock and borrowing. It’s also needed to account for defaults, and other developments that change the outstanding stock of debt independent of the flows of income and expenditure.⁵ Equation 4 is well known to macroeconomists as the law of motion of government debt and in that context has been called “the least controversial equation in macroeconomics.” (Hall and Sargent, 2011) Whatever sector it is applied to, the equation is an accounting

⁴The analysis in this section is based on Mason and Jayadev (2014) and Mason and Jayadev (2015).

⁵“Stock-flow consistency” may be a desirable feature of an economic model, but it is definitely not a feature of real economies.

identity – it is true by definition.

One useful application of Equation 4 is to decompose changes in debt ratios into the contributions of each of the variables. In order to separate out the contributions of the variables, we use a linear approximation of the equation:

$$\Delta b_t \approx d_t + (i_t - g_t - \pi_t - c_t)b_{t-1} \tag{5}$$

Here c_t is the fraction of debt charged off due to default. A key point is that d_t gives the net new funds flowing to households through the credit system for that period. A rise in borrowing, for whatever reason, must show up as a rise in d .

The typical application of this equation is to decompose changes in the public debt-GDP ratio over time, generally into changes due to the primary balance, the real growth rate, the nominal interest rate, and inflation. Decompositions of the changes in the debt-GDP ratio have been carried out both for the US and for various other countries. (for example Aizenman and Marion, 2009; Abbas et al., 2011; Hall and Sargent, 2011). A common finding in these papers is that changes in growth, inflation and interest rates play a large role in the evolution of public-debt GDP ratios historically. As it turns out, the same is true of US household debt.

Table 2: Decomposition of Change in Household Debt-Income Ratio, in Percentage Points per Year

	Change in Debt Ratio	Attributable to:				
		Primary Deficit	Interest	Growth	Inflation	Default
1946 to 1963	2.9	2.6	2.9	-1.5	-0.8	-0.0
1964 to 1983	0.2	0.8	6.4	-2.6	-4.1	-0.2
1984 to 1993	3.2	-1.1	9.9	-2.0	-3.0	-0.5
1994 to 1999	1.7	-0.9	9.9	-4.4	-2.0	-0.8
2000 to 2007	5.8	5.7	9.5	-4.3	-3.3	-1.5
2008 to 2011	-4.1	-6.6	9.1	1.2	-2.2	-5.1
1946 to 1983	1.5	1.7	4.7	-2.1	-2.6	-0.1
1984 to 2007	2.8	0.1	9.7	-2.9	-2.8	-1.5

Source: Mason and Jayadev (2015)

Table 2 shows annual changes in leverage and the contributions to that change of primary deficits and interest, growth, inflation rates and defaults. The contribution of growth, inflation and effective interest rates to the change in leverage is equal to the value of the variable multiplied by the debt stock at the end of the previous period. A negative number represents a component reducing in leverage and a positive number one increasing it. The table shows that over some periods – especially between 1945 and 1980, and in the housing boom period of the 2000s – changes in leverage track new borrowing (the primary deficit) closely. But over other periods, the two correspond less closely, or even move inversely. For our purposes, the most important comparison is between the period 1964-1983 and the period 1984-2011. Looking at the last two lines of Table 2, we see that households

were running primary deficits (expenditure exceeded income) in the first period, but not in the second; yet household leverage was essentially flat in the first period and rose sharply in the second.

Over the full 1984-2011 period, the household sector debt-income ratio almost exactly doubled, from 0.77 to 1.54. Over the preceding 20 years, debt-income ratios were essentially constant. Yet over 1963-1983, households ran cumulative primary deficits equal to 20 percent of income, compared with cumulative primary deficits of just 3 percent of income over 1984-2012. So if the goal is to explain the difference in household debt growth in the decades before and after 1980, the answer cannot involve any change in borrowing behavior. Any explanation of rising household debt of the form “households borrowed more because...” does not apply to the historical facts. The entire growth of household debt after 1983 is explained by the combination of higher interest payments, which contributed an additional 3.3 points per year to leverage after 1983 compared with the prior period, and lower inflation, which reduced leverage by 1.3 points per year less. The question is not why households borrowed more after 1980; they did not. The question is why the operation of the monetary system increased the value of already-incurred debt much more rapidly after 1980 than before.

While this analysis shows that the rise in aggregate debt ratios cannot be explained by higher household borrowing – whether due to more unequal income distribution or any other cause – it is still possible that rising inequality is reflected in the distribution of debt across households. We will return to this question in Section 6.

5 The rise in measured consumption relative to income is all due to imputed and social consumption, not households’ own consumption spending.

The received view on household consumption, incorporated into the DDD story, is that it has increased relative to income. But careful analysis of the national accounts shows that this is not the case. The discussion in this section follows Cynamon and Fazzari (2014).

A usually implicit assumption of this literature is that the increase in household debt-income ratios reflects increased household borrowing, which in turn reflects increased household consumption spending. Indeed, these three terms are often treated as equivalent. As discussed in Sections 2 and 4, changes in debt ratios do not necessarily reflect changes in borrowing, and most borrowing does not finance consumption.

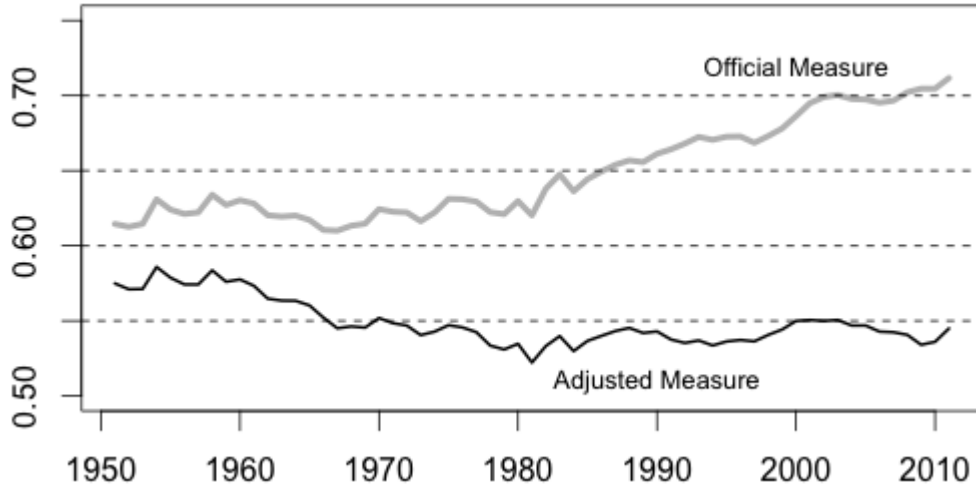
In addition, it is not the case that household consumption spending has increased. The increase in measured consumption spending as a share of GDP is entirely the result of spending by third parties – mainly government, but also employers – that is counted as household spending in the national accounts. The most important of these are the public health insurance programs Medicare and Medicaid; payments to health care providers are counted as consumption spending by households in the national accounts. Reasonable arguments can be made for

and against this treatment, but it is logically impossible that such payments could contribute to rising household debt, since they do not involve any expenditure by households.

The most important features of the national accounts that raise reported consumption but do not involve any actual monetary outlays by households are:

- “Households” include nonprofits. For many purposes in the national accounts, the household sector also includes nonprofit institutions like churches, charities, and nonprofit hospitals and universities. Total costs incurred by these institutions less any revenue from sales, are counted as consumption spending. In recent years, consumption by nonprofit institutions has accounted for about 2.5 percent of total official consumption.
- Homeowners are considered to rent to themselves. By the standard conventions of the national accounts, anyone who owns their own home is considered to be renting that home to themselves. The BEA imputes the value of that rent as both income and spending for the household sector, even though no money changes hands. These owners’ equivalent rents accounting for a bit over 10 percent of official household consumption, representing housing services provided by owner-occupied homes.
- Health insurance payments are considered household consumption. All spending on health care for individuals is counted as income and consumption for the household sector, no matter who pays for it. This includes all payments to healthcare providers by both employer-sponsored health insurance plans and government health insurance programs such as Medicaid and Medicare. As far as the national accounts are concerned, when people receive medical treatment and Medicare pays for it, that means the federal government sent them a check and they decided to purchase medical care with it. Spending by employer-provided health insurance plans accounts for about 5 percent of official household consumption, and spending by public health insurance programs for about 9 percent.
- There are large imputed financial services. Household consumption includes the “services” imputed to households that hold assets that pay less than the market interest rate, or borrow money at more than the market interest rate. The BEA assumes that anyone holding an account at below-market interest is in effect purchasing some financial service from the bank equal in value to the foregone interest. The value of these imputed financial services varies with market interest rates but in recent years has come to about 4% of total household consumption.
- Pension funds are considered to be directly owned by their beneficiaries. This does not affect measured consumption spending, since pension transactions do not involve purchases of goods or services. but it does affect household income as reported in the national accounts: Employer contributions to pension funds

Figure 1: Official and Adjusted Household Consumption as Share of GDP, 1950-2012



The adjusted consumption measure includes only cash outlays by households. It excludes nonprofit expenditure, imputed noncash expenditure, and third-party expenditure on behalf of households. Source: NIPAs, Cynamon and Fazzari (2014), author's analysis

are considered to be income for the household sector, but disbursements from pension funds are not.

In all, nearly a third of what the BEA counts as household consumption involves no cash outlay by households. This share has not been constant; rather, it has increased over time. In fact, as shown in Figure 5, the entire increase in reported household consumption since 1980 is accounted for by these items. (About 80 percent of the total increase is public healthcare spending; owners equivalent rents play an important role in the steep rise around the year 2000.)

The nonmonetary and third-party components of measured consumption may raise the living standards of households in ways comparable to their own consumption spending. But these components cannot contribute to any change in household balance sheets. Debt is incurred or paid down, and assets accumulated or decumulated, as a result of a divergence between cash income and cash outgoings. Changes in non-market flows or third-party payments cannot directly affect either borrowing requirements or repayment capacity. For example, a reduction in employer contributions to defined benefit pension funds is reported as a fall in household income in the national accounts; if household expenditure remained unchanged, this would imply a fall in the personal savings rate. But it is logically impossible for such a fall in pension contributions to explain an increase in household borrowing, since employer pension contributions have no direct effect on current household cashflows. Similarly, an increase in imputed rents for owner-occupied homes will show up as an increase in consumption, again implying, all else equal, a fall in personal savings. But again, this cannot explain an increase in borrowing, since it has no effect on

the cash payments made by households.

6 Rising debt is not concentrated at the bottom of the income distribution; low-income households have little debt.

An explicit or implicit claim of all variations of the DDD story is that the rise in household debt was concentrated in the lower part of the income distribution.

It is true that debt-income ratios are somewhat lower at the very top of the income distribution – they peak around the 90th percentile. So if the question is framed in terms of the top 5 percent and the bottom 95 percent, then it is true that debt-income ratios are higher, and have risen by more, in the lower part of the distribution. (Cynamon and Fazzari, 2015) But it would be misleading to treat this as representing a more general downward shift in the distribution of debt. As Table 3 shows, over the whole period household debt has been concentrated in the upper-middle range. More than three-quarters of household debt is owed by the top 40 percent of the income distribution; less than 10 percent is owed by the bottom 40 percent. This is not surprising, when we recall that debt is mainly incurred to finance asset ownership. It is precisely the upper-middle strata that are likely to own expensive assets but to need to borrow for them. Increasing income inequality means that fewer households are located in this middle part of the distribution; so as noted in Section 2, the most natural result of greater income inequality would be a reduction in household debt.

Figure 6 shows the median ratio of household debt to income for each of 20 income bins, for six years between 1983 and 2013. Table 3 shows the share of total household debt accounted for by each income decile for each of the same six years. So for instance, in 2013 the median debt-income for a household at the 50th income percentile was a bit below 0.5. And in 2013, 34 percent of total household debt was owed by the highest-income decile, while only 2 percent of total debt was owed by each of the two lowest-income deciles.

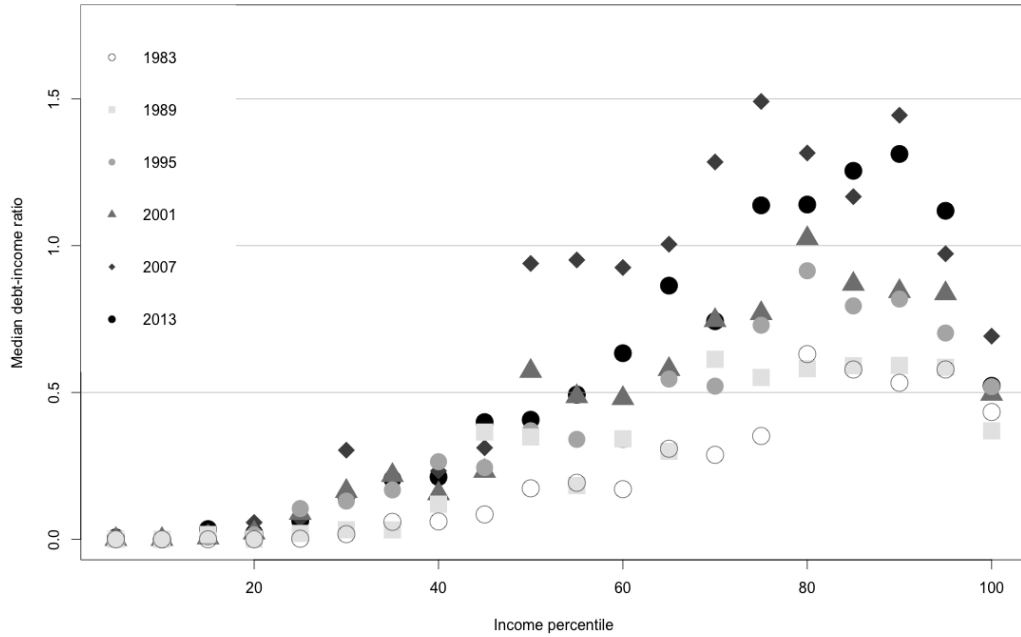
A few points come out clearly here. First, household debt is mainly found in the upper-middle part of the income distribution. The majority of households in the

Table 3: Share of Total Household Debt by Income Decile, Various Years

	1983	1989	1995	2001	2007	2013
bottom	0.01	0.01	0.01	0.01	0.01	0.02
2	0.02	0.01	0.02	0.02	0.02	0.02
3	0.02	0.02	0.04	0.03	0.03	0.03
4	0.04	0.04	0.04	0.04	0.03	0.04
5	0.05	0.06	0.06	0.07	0.06	0.05
6	0.07	0.07	0.08	0.08	0.08	0.08
7	0.09	0.11	0.11	0.10	0.11	0.10
8	0.13	0.15	0.14	0.14	0.16	0.14
9	0.18	0.19	0.19	0.18	0.19	0.19
top	0.38	0.35	0.32	0.33	0.31	0.34

Source: Survey of Consumer Finances, author's analysis

Figure 2: Median Debt-Income Ratios by Income Percentile and Year



Source: Survey of Consumer Finances, author's analysis

bottom quintile report no debt, and this has been true of every year in the survey. Median debt ratios in the second quintile from the bottom are also consistently very low. The highest debt ratios are consistently found between the 75th and 90th percentiles. This is the natural result of the point stressed in Section 2, that debt is incurred to finance asset ownership, not current expenditure. The great majority of household debt (over 90 percent) is incurred to finance home ownership, auto ownership and postsecondary degrees. Low-income households are unlikely to own homes or attend college or university, especially the more expensive selective private and professional schools; most low-income households do own vehicles, but they are often purchased used, which may not require debt financing. Lack of assets among lower-income households is in part because they cannot get credit for these purchases; probably more important, all these purchases also involve significant out-of-pocket costs (down payments and so on), and are linked to a larger set of life cycle choices that are shaped by class position. So it is not surprising that the highest debt ratios (and the great majority of aggregate debt) are found in the top two quintiles.

Debt ratios do fall somewhat at the very top of the distribution, but the absolute level of debt rises monotonically with income. This distribution is especially striking since the income measured here is current, not lifetime, income. If a major purpose of borrowing was to smooth consumption in the face of short-term variations in

income, you would expect to see a large fraction of debt owed by households whose income was currently low. The fact that we do not see this, means that either most income variation is persistent rather than transitory, or that households do not use debt for this purpose. Both are probably true. It's also worth noting that even in the 2000s, when debt ratios rose sharply in the middle part of the distribution (discussed immediately below) the aggregate distribution of debt did not change very much. Even when debt-income ratios are higher in the upper middle part of the distribution than at the very top, the total quantity of debt owed is still higher at the top.

The fact that debt rises with income, and that there is very little debt in the bottom half of the distribution, is a problem for versions of the DDD story that emphasize *working class* incomes and living standards. It is a less serious problem for versions like Cynamon and Fazzari (2015), which focus on the division between the top few percentiles and the bulk of the population.

The second point that comes out of Figure 6 is that there *is* an exceptional increase in debt ratios between 2001 and 2007, from roughly the 50th to the 80th percentiles. During this period, debt-income ratios roughly doubled for these income ranges, with increases ranging from 0.5 to 1.0 at the 50th percentile, up to from 0.75 to 1.5 to the 75th percentile. Unlike the rest of the 1983-2013 period, this six year stretch saw both a large increase in aggregate household debt and some downward shift in its distribution.

On the face of it, this seems to support the DDD story. There are some problems, though. First of all, the rise in middle-income debt ratios are limited to the 2011-2007 period, even though income inequality has risen steadily since the early 1980s. Second, the rise in debt ratios during the 2001-2007 period is almost entirely a matter of mortgage borrowing. Third, there was no similar rise in debt ratios in the bottom half of the income distribution. Finally, as discussed in Section 5, there was no corresponding increase in aggregate demand from the household sector during this period. (Mason and Jayadev, 2015)

The natural interpretation of these facts is that the mid-2000s rise in household debt is not directly linked to income distribution but is, rather, explained by the housing bubble. Higher mortgage borrowing was both required and enabled by the rise in the prices of existing houses increased mortgage borrowing in turn sustained the price rise. (Mian and Sufi, 2011) In some cases, rising home prices may also have allowed households to maintain a higher level of current expenditure. But while reverse mortgages, HELOCs and so on received a great deal of media attention during the housing bubble and its aftermath, the large majority of borrowing in this period was traditional first mortgages. And, again, in the aggregate, there was no increase in current household expenditure relative to income. The housing bubble of the 2000s was certainly shaped by the larger economic context, including the distribution of income. But we should not look for a *direct* link between distribution and rising middle-class debt – the immediate cause was the housing bubble.

The housing bubble was a discrete phenomenon. There was a sharp rise in

debt in the middle class (the 50th-90th percentiles.) But this was specifically about mortgage debt. And it was limited to distinct period - the first half of the 2000s. Up to 2001, there was a steady rise in debt ratios across the whole population without any change in the distribution. But from 2001-2007, there was a sharp rise centered at the 75th percentile or so that pushed the distribution somewhat downward. This downward shift in the debt distribution was reversed after 2007, in large part due to default. (See the last column of Table 2.) This temporary downward shift in debt is a result of the housing bubble specifically, not a more generic response to changing income distribution. And even during the housing bubble period, very little debt was owed by households in the bottom half of the income distribution.

7 Consumption inequality appears to track income inequality.

A central claim in the debt-distribution-demand story is the claim that lower income households borrowed in order to maintain their expected standards of consumption, and/or to emulate the consumption of higher-income households. This implies that inequality in consumption should have increased by less than inequality in incomes. This is explicitly acknowledged in many of these papers. For example, McCombie and Spreafico (2015) claim that “the change in the inequality in consumption was considerably less than the change in income inequality.” They do not provide any reference for this claim. But there is empirical work on this question. While measuring the distribution of consumption presents serious challenges, most of the recent literature concludes that consumption inequality in the US has in fact risen about as much as income inequality.

There are two comprehensive US datasets on household consumption available over a long period. First (available from 1980) is the Consumer Expenditure Survey (CEX) conducted by the Bureau of Labor Statistics (BLS). Its primary purpose is to form weights placed on price changes of goods in the computation of the overall Consumer Price Index. The other dataset (available from 1968) is the Panel Study of Income Dynamics (PSID), originally created to study income dynamics across generations. Until 1997, the PSID collected information only on a few consumption items: food, home rent, and utility payments. Starting with the 1999 wave, however, the PSID began to collect information on a larger range of items. (Browning, Crossley and Winter, 2014)

A puzzle about consumption as measured in both these surveys is that the implied aggregate consumption level is inconsistent with the aggregate consumption reflected in the national accounts. One important reason for this discrepancy is that the surveys measure a different consumption concept than does the national accounts. Households normally report only cash outlays for consumption goods in the current period as consumption. But the definition of household consumption used in the national accounts includes third-party expenditure for health care and other purposes, and imputed noncash spending on owned housing, financial services, and other areas. (Attanasio and Pistaferri, 2016) This issue is discussed more in Section 5 below. Other forms of noncash consumption, such as the flow of services

provided by consumer durables, are counted by neither surveys nor in the national accounts, but arguably should be included if the goal is to measure living standards. Since these flows do not involve cash outlays by households, however, they are not relevant for a discussion of household debt. In addition to conceptual issues, it is clear that household reporting of consumption expenditures is less accurate than income reporting, and that the errors are not random, but correlated with income – consumption is disproportionately underreported by higher income households. (Aguiar and Bils, 2015) Finally, households do not necessarily face the same prices for consumption goods, so the distribution of consumption across households may be different from the distribution of consumption expenditure. (Gordon, 2009)

A number of recent papers attempt to overcome these problems and produce consistent measures of the distribution of household consumption and consumption expenditure. Most of these papers have found that changes in the distribution of consumption spending across income groups have generally tracked changes in the distribution of income. In the remainder of this section, I briefly review some recent examples.

Aguiar and Bils (2015) makes use of Consumer Expenditure Survey (CEX) interview data from 1980 through 2010. They seek to overcome the limitations of the CEX data by constructing a measure of consumption inequality based on

how richer versus poorer households allocate spending across goods. ... Intuitively, if consumption inequality is increasing substantially over time, then higher income households will shift consumption toward luxuries more dramatically than lower income households. The key advantage of this approach is that it does not require that the overall expenditures of households be well measured. Starting from consistent estimates of a demand system (Engel curves), the ratio of spending across any two goods with different expenditure elasticities identifies the household's total expenditure.

In their preferred specification, they find that consumption inequality – measured as the ratio of consumption by the top income quintile to consumption by the bottom income quintile – increased by between 30 and 42 percent over the full period, compared with an increase in the equivalent measure of income inequality of 33 percent. In other words, they find that consumption inequality rose by at least as much as income inequality.

Fisher, Johnson and Smeeding (2013) also make use of the CEX data. They construct a measure of household consumption that includes all cash outlays classed as consumption except for vehicle purchases and expenditures on owned homes, plus the imputed flow of services from owned homes and vehicles, all adjusted for household size. Measuring inequality by the Gini index, their main finding is that, while income inequality is always greater than consumption inequality, they follow the same trend: “income and consumption inequality increase at approximately the same rate between 1985 and 2006.” Again, this contradicts the claim that consumption inequality increased less than income inequality, whether due to borrowing or

for some other reason.

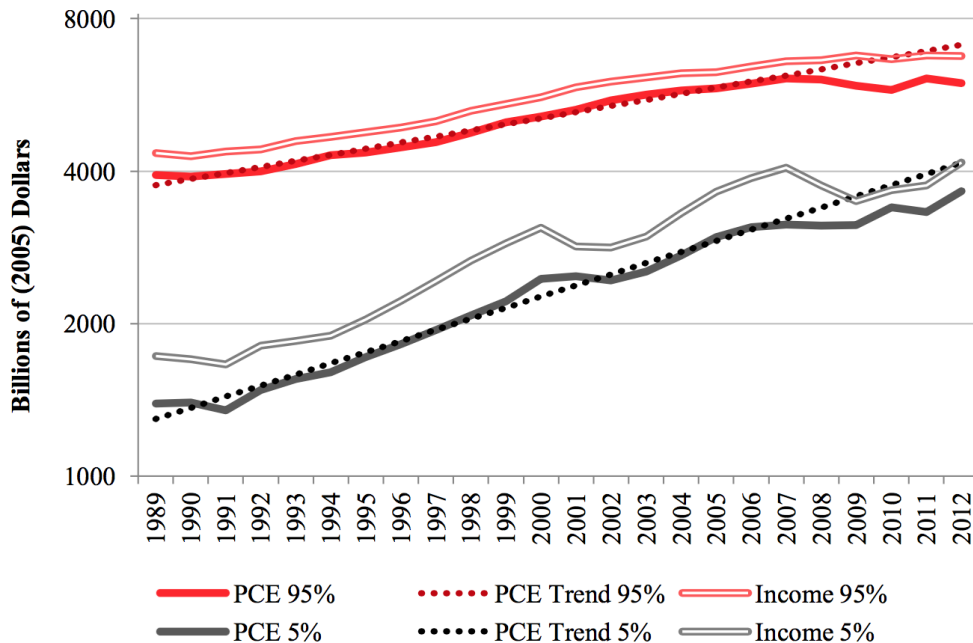
Attanasio, Hurst and Pistaferri (2012) employ a number of strategies to overcome the limitations of the CEX data. In one specification, they limit their analysis to consumption categories where measurement error has been found to be less of an issue. In another, they follow the same approach as Aguiar and Bils (2015) by comparing the spending on luxuries (entertainment) relative to necessities (food). Third, they use expenditure data from the PSID to the CEX to compare the resulting measures of consumption inequality for the period covered by both. All these approaches yield the same results: “Consumption inequality within the U.S. between 1980 and 2010 has increased by nearly the same amount as income inequality.” Measuring inequality as the standard deviation of log income and log consumption respectively, they find that income inequality increased by 0.20 percentage points, while the standard deviation of log consumption increased by between 0.15 and 0.20 points.

Cynamon and Fazzari (2015) embrace a version of the DDD hypothesis in their text. But the data they present on income and consumption distribution tell a different story. By their measure, the ratio of consumption to income for the bottom 95 percent was essentially flat between 1989 and 2009; consumption rose as a share of income only at the *top* of the distribution – in fact, by the end of the period, for the first time, the consumption ratio of the top 5 percent was higher than that of the bottom 95 percent. This implies that consumption inequality has actually increased *more* than income inequality – exactly the opposite of the DDD prediction.⁶

In our view, Cynamon and Fazzari (2015) presents the most convincing measurement of consumption across households. Their figure showing the key results is reproduced here as Figure 7. Two things are clear from this figure. First, the distribution of consumption between the top 5 percent and bottom 95 percent by income, has closely tracked the distribution of income between these two groups. Second, to the extent consumption trends have diverged from income trends, it has been in the direction of higher consumption as a share of income among high-income households, and lower consumption relative to income among lower-income households. If a mechanism is needed to explain rising consumption demand in the face of more unequal income in the period before 2007, it should focus on luxury consumption among the rich – perhaps driven by a wealth effect from capital gains – rather than on debt-financed consumption among the bottom 95 percent. As discussed in Section 5, it is not clear how much we need to postulate any such mechanism: When measured consistently as money expenditure by households, there does not appear to have been any rise in aggregate consumption spending as a share of income since 1980. Still, since consumption propensities do fall with income at least for the bulk of the period, even a constant aggregate consumption-income ratio needs an explanation, and an increasing fraction of high incomes being spent on luxury consumption is a plausible candidate.

⁶In the paper, Cynamon and Fazzari (2015) merely observe in passing that the flat consumption share of the bottom 95 percent is “perhaps somewhat surprising.” In personal correspondence, they acknowledge the fundamental problem it creates for their larger argument.

Figure 3: Consumption and Income for the Top 5% and Bottom 95%, 1989-2012



Source: Cynamon and Fazzari (2015)

Among the few recent studies of US consumption inequality to find that it has increased significantly less than income inequality is Meyer and Sullivan (2010). They report a number of alternative measures of both consumption and income inequality, but by most of them, the increase in consumption inequality since 1980 has been much less than the increase in income inequality, especially in the later part of this period. Since 2000, they find, there has been no increase in consumption inequality at all. (Meyer and Sullivan, 2013) It's beyond the scope of this paper to evaluate these competing claims, or explain why this work finds such different results from other studies of income and consumption distribution.

Compared with the issues discussed in the other sections of this paper, the data on consumption inequality is not straightforward to interpret, and the conclusions of this section should be taken as more tentative than the others. But certainly the bulk of the empirical literature suggests that consumption inequality rose no less than income inequality between the 1980s and 2007.

A final note: The alternative to the view that income inequality has led to an increase in borrowing among lower income households is that the income inequality has led to a decline in living standards among lower income households. As people get poorer, they don't borrow more, they buy less. This decline in living standards among lower-income households is reflected in many indicators of health and well-being, such as falling life expectancies. (Case and Deaton, 2015) It is strange that so many of these writers implicitly deny that income inequality has led to falling living standards for poor and working class households, but instead has been cushioned

by borrowing.

8 *Conclusion: The claim that rising inequality led to rising household debt and contributed to the financial crisis is attractive, but it is not consistent with the historical evidence, at least for the US.*

In Sections 2 through 7, we have made the following claims:

1. The great majority of household debt is incurred to finance asset positions, not current consumption.
2. Because expenditure creates income for other units, the relationship between spending and balance-sheet positions for individual units cannot be extrapolated to the economy as a whole.
3. Historically, changes in household debt-income ratios have been driven more by variation in nominal income growth and interest on existing debt, than by new borrowing.
4. Household debt is concentrated near the top of the income distribution; very little is owed by lower-income households.
5. Consumption inequality appears to have increased in line with income inequality.
6. The apparent rise in household consumption relative to income is entirely the result of third-party and imputed noncash expenditure; cash outlays for consumption by households are no higher as a share of income than they were in 1980.

Each of these claims creates challenges for a story in which debt-income ratios rose due to increased borrowing to finance consumption, required to maintain living standards in the face of greater inequality. Together, they are fatal.

On the positive side, critically investigating the premises of the DDD story helps clarify the actual historical trajectory of household balance sheets.

Future work on these linkages, we suggest, would benefit from the following methodological strictures. First, we cannot analyze the economy as a whole through the lens of a representative household; we must keep sight of the fundamental Keynesian insight that at the level of the economy as a whole, expenditure creates income. Second, when balance sheet variables like debt are the object of inquiry, we need to take a consistent “accounting view” of the economy. (Bezemer, 2016) We cannot analyze treat balance sheet variables as if they simply recorded income and expenditure flows. As a corollary to this, we should keep in mind that debt is used mainly to finance assets; consumption loans are much more important in orthodox theory than in the real world. Third, we need to be careful about mapping variables as reported in the national accounts onto the equivalent variables in theory. This concern is as old as empirical economics, but it is too often ignored

in practice.⁷ The differences between the definition of the reported variables and the definition required by theory cannot be assumed to be of second-order importance. The national accounts are constructed on the basis of an uneasy, sometimes unstable compromise between economic theory (itself of different vintages), private accounting practices and administrative convenience. We must be very cautious in assuming that the values in the national accounts labeled “consumption,” “saving,” and so on corresponds to either the equivalent terms in our theoretical models or to the commonsense uses of those terms in everyday life.

With respect to the rise in household debt: This is a monetary phenomenon. Fundamentally, it is the result of higher interest rates and lower real income growth and inflation. On the other side of the equation, increasing income inequality has simply led to an increase in private consumption inequality. To the extent that consumption demand has been stronger than would be predicted by a Keynesian story of consumption propensities declining with income, the explanations appear to be a mix of increased luxury consumption by high-income households and increased social spending classified as household consumption in the national accounts. Income inequality may indeed have contributed to weaker aggregate demand. But so may a number of other factors, including : the progressive satiation of consumption demand; slowing population growth; increasing monopoly power; the end of the industrialization process; changes in the fraction of profits retained in the business sector; the trade deficit; and increased longevity of capital goods. The possible influences of all these factors, along with countervailing forces tending to raise aggregate demand, need to be investigated systematically we should not immediately focus on one possible story to the exclusion of the others.

Politically, the conclusion suggested by this paper is that the problem of debt is *not* that it substitutes for rising wages. It is, rather, first, that security and social status depend on asset ownership. Debt-financed home ownership, for instance, substitutes for strong tenant protections that would make renting a more viable alternative. And second, it is that over the past generation, the monetary system has operated in such a way as to inflate the value of existing financial claims.

⁷ “There is hardly an economist who feels really happy about identifying the current series of ‘national income,’ ‘consumptions,’ etc. with the variables by those names in his theories. Or, conversely, he would often think it too complicated or perhaps even uninteresting to try to build models... [that] would correspond to the variables actually given by current economic statistics.” (Haavelmo, 1944)

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