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The 2008 Economic Crisis Ten Years On
in Retrospect, Context and Prospect

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The Crisis and The Asset Driven Household

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Abstract

The financialization of the US economy leading up to the 2008 economic crisis altered the structure and behavior of household saving and consumption. Shocks from the crisis to consumer confidence and credit markets rerouted the declining household saving rate and steady upward progression of consumption. Ten years later, with the gradual recovery and slow middle-income growth, US household saving and consumption have re-set upon their initial precipitous path. This paper outlines the theoretic and empirically observed links between wealth driven by asset prices and credit and their direct and indirect impacts upon household behavior. In analyzing the multi-tiered relationships between wealth and credit, we argue that the tenuous and vulnerable links within the asset driven household sector remain unresolved 10 years after the crisis.

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1. Introduction

In the years leading up to the 2008 economic crisis financialization of the US altered the structure and behavior of household saving and consumption. Shocks from the crisis to consumer confidence and credit markets rerouted the declining household saving rate and steady upward progression of consumption. Ten years later, with the gradual recovery and slow middle-income growth, US household saving and consumption have re-set on their initial precipitous paths. Consumption as a ratio of disposable income continues to slowly rise and the paradoxical decline in the personal saving rate persists.

To explain the lack of saving and continuance of spending, a renewed focus has been placed on the wealth effect (Poole, 2007; Fair, 2017). Other researchers have highlighted the ever-growing private debt ratios and the rising disparity in incomes and wealth in the US as driving household behavior(Mian & Sufi, 2014). Significant overlap exists for both theoretic narratives. Saving and consumption are inextricably linked to the interaction of household net worth and credit availability.

Essentially, a multi-directional link between household wealth and credit is present, in that rising wealth or collateral values raise access to credit and financing. Likewise, a significant portion of credit growth is channeled back into assets inflating their prices and starting the cycle. Borio highlights the link with an emphasis on property prices, in his work on the financial cycle

(2014). While these macro-phenomena are well-known, in revisiting what we call the net worth-credit nexus, this paper highlights lesser known structural aspects of the crisis and continued susceptibility of the US household sector.

Increasing complexity and vulnerability within the tiered links between wealth and credit ratios and that of saving and spending behavior are a result of rising wealth inequality, the private debt explosion, and what we term the net worth-credit nexus or financial cycles. The associations between wealth and credit and their impact upon saving and spending are multi-layered. The paper argues: 1) wealth effects prior to the crisis were only driven by asset price effects, whereas the other components within net worth such as saving moved in an anti-cyclical manner and 2) asset price changes primarily influence top income groups but their indirect influence middle- and lower-income groups is through the supply of credit. Section 2 briefly revisits the dominant theories of spending and saving and how they have been adapted in the years leading up to and following the sub-prime crisis. The behavior of household saving and consumption are shown in connection to rising net worth and credit ratios. In addition, the problems embodied in the simple wealth effect are highlighted. Section 3 further analyzes the components of aggregate household net worth. It highlights the specific role of asset prices as driving wealth ratios and the anti-cyclical nature of household saving. Finally, section 4 discusses the tenuous links found within an asset driven household sector that remain unresolved 10 years after the crisis.

2. Background: Theory and Reality

In the years leading up to the Great Recession, researchers found that U.S. household consumption had become increasingly dependent upon borrowing. Stagnant wage growth for all but the highest income quintile presented households the choice between reducing consumption and borrowing when income deteriorated. At the same time, asset prices, aggregate household wealth, international saving, and private debt all surged to new highs, fueling credit within the domestic economy. Growth in the size and scope of the U.S. credit market provided the means for aggregate consumption to continue its uptick, and private debt accumulation became the means by which expenditure could exceed income (Keen, 2013).

The question is whether these stylized facts can be explained by the traditional theories of household behavior such as Friedman's permanent income hypothesis (PIH) as complemented with the wealth effect. Freidman's PIH and Modigliani's related life cycle income hypothesis (LCIH) posit that consumer spending varies with an expected or permanent level of future income. Variations in household consumption are thus expected to be smoother than short-term fluctuations in income, with spending exceeding income in life's early and late phases and falling below it during peak or middle-life years. In the LCIH and PIH framework, debt is conceptualized as a means of consumption smoothing, so the lack of saving by midlife agents can appear as an anomaly.[1]

Beginning in the 1980s household saving as a ratio of disposable income in the US began to fall. Traditional explanations of wealth focus on accumulated saving over time. Prominent macroeconomic theories have argued that households rationally saved a percentage of income to

[1] Of course, the question needs explanation, i.e., steady consumption and falling savings are relevant for households except those in the top decile. In fact, although wages and incomes were stagnant during the stock boom of the 1990s and real estate boom of the 2000s, aggregate income and savings grew for those households on the top of the income distribution. So, unless otherwise indicated by *households,* the paper refers to those in the bottom 90%.

maximize lifetime spending and utility (Friedman,1956). However, net worth can also rise when the assets households hold appreciate. Following the Great Recession, researchers have posited that consumption growth was made possible by an increase in credit, and the expansion of credit is commonly explained by increased levels of household net worth (Mian & Sufi, 2015).

In regard to the saving paradox, various explanations for the decline have emerged (Brown, 2005). One school of thought has redefined saving to include asset price appreciation (Gale & Sablehaus, 1999; Fair, 2017). Positive asset revaluation raises household net worth, which allows further access to credit, both of which can occur without increasing saving. In connection to household spending, researchers (e.g., Bernanke, 2007; Bernanke, Gertler, & Gilchrist, 1999) have noted the role of collateral and wealth effects for amplifying shocks. Household net worth acts as the essential intermediary between asset prices and saving on the one side and credit financed spending on the other.

The wealth effect is often appended to the LCI/PI hypotheses, where accumulated wealth acts as another method to finance consumption for individual or aggregate consumption functions, although wealth has a smaller marginal spending reaction than that from changes in disposable income. Wealth effects can be either positive or negative, and result from an unexpected shift in household financial stance. Household wealth is held in financial and nonfinancial assets and accumulates over time mainly through flows of net saving and asset price revaluation.[2] If disposable income fails to grow, consumption can continue so long as wealth remains or credit access stays.

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[2]The Bureau of Economic Analysis and Integrated Macro Accounts adds two other empirically less significant causes of changes in household wealth: volume changes and disaster loss.

From their inception, LCIH and PIH have been subject to criticism.[3] One primary weakness is the inability to explain persistent and growing consumption with flat lining middle incomes. Beginning in the 1970s, the wage share of income ratio has fallen while consumption to income has tracked upward, as shown in Figure 1. Adding to the discrepancy is the concurrent growth of income inequality (Piketty, 2001) and the rise in wealth disparity (Wolff, 2012). Growing wealth, shown in Figure 2, could potentially explain overall consumption behavior if all households are experiencing gains, or if those at the top spend sufficiently to offset those not experiencing any of the gain. As neither scenario appears to be occurring, observed income, wealth inequality, and stagnant wages with continued per capita consumption pose a puzzle for consumption theory. Under LCIH and PIH assumptions, middle- and lower-income agents should have been reducing rather than increasing consumption.[4]

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[3] One avenue of discord focuses on the absence of expected aggregate capital accumulation from that theorized by life-cycle authors (Kotlikoff & Summers, 1980). Accumulated savings should grow from either increased income or population allowing for further growth and investment, both growing until the Great Recession in spite of shrinking household saving. An additional issue is the lack of observed dissaving from retirees (Banks, 1998).

[4] Further critiques of the wealth effect literature include the use of a representative, rational, and risk-sharing agent for household spending. Early models combined individual households into one homogenous entity where a representative agent exhibited a small to nonexistent marginal propensity to consume from added wealth (Cochrane, 1991). Another issue was that housing wealth and its influence upon consumption was downplayed. Its omission was due to its nature as both an investment and consumer good. If modeled in this manner, a household is naturally hedged against house price shifts. Positive changes in price that raise an owner's net worth simultaneously increase rental prices for tenants, which results in only minor net changes as renters feel wealthier/poorer when house prices are declining/rising, which are counterbalanced by owning agents. In addition, homeowners may never realize the capital gain from selling the home. Instead, they may continue to live in or pass the asset to their offspring. In the latter scenario, households would not expect large reactions to housing wealth shocks.
Neoclassical models posit that consumption is relatively unresponsive to house price fluctuation so long as households have standard preferences, assets are priced correctly, and no credit market frictions exist. However, when these assumptions are eased, the models' predictions come undone. The spending response of homeowners and renters to wealth is no longer offset. Observed flaws in representative models, such as differences in wealth distribution and varying agent consumption response, demonstrate the need for heterogeneity.

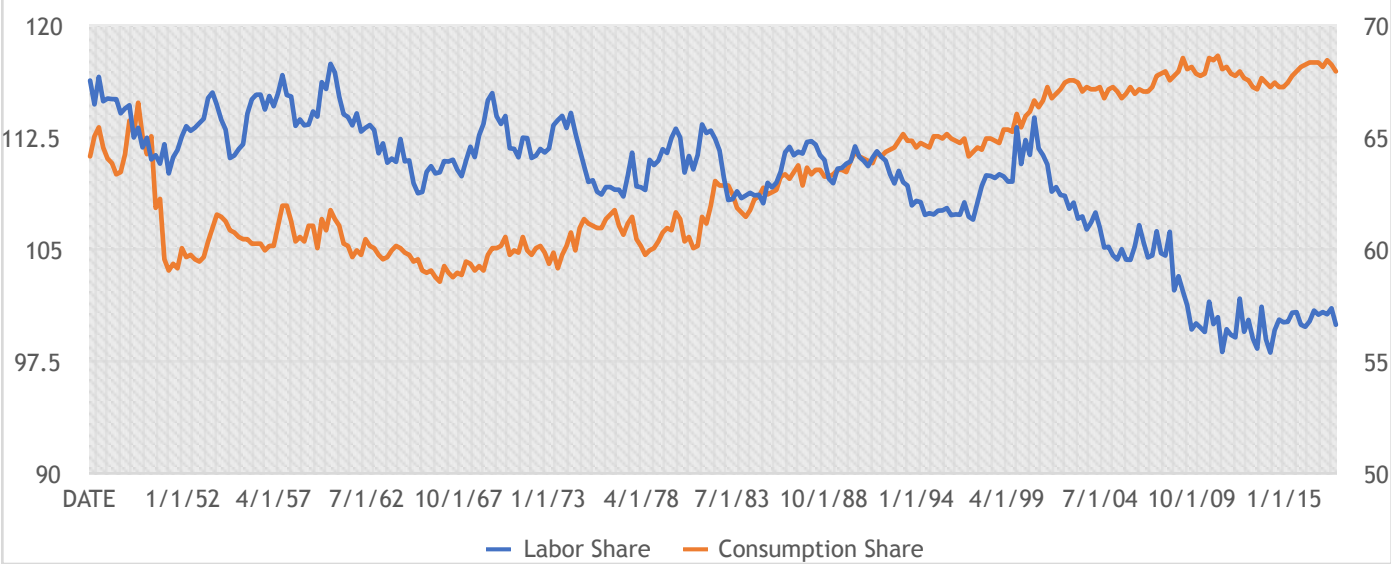

Figure 1: US Labor Share and the Ratio of Consumption to GDP

Source: U.S. Bureau of Economic Analysis

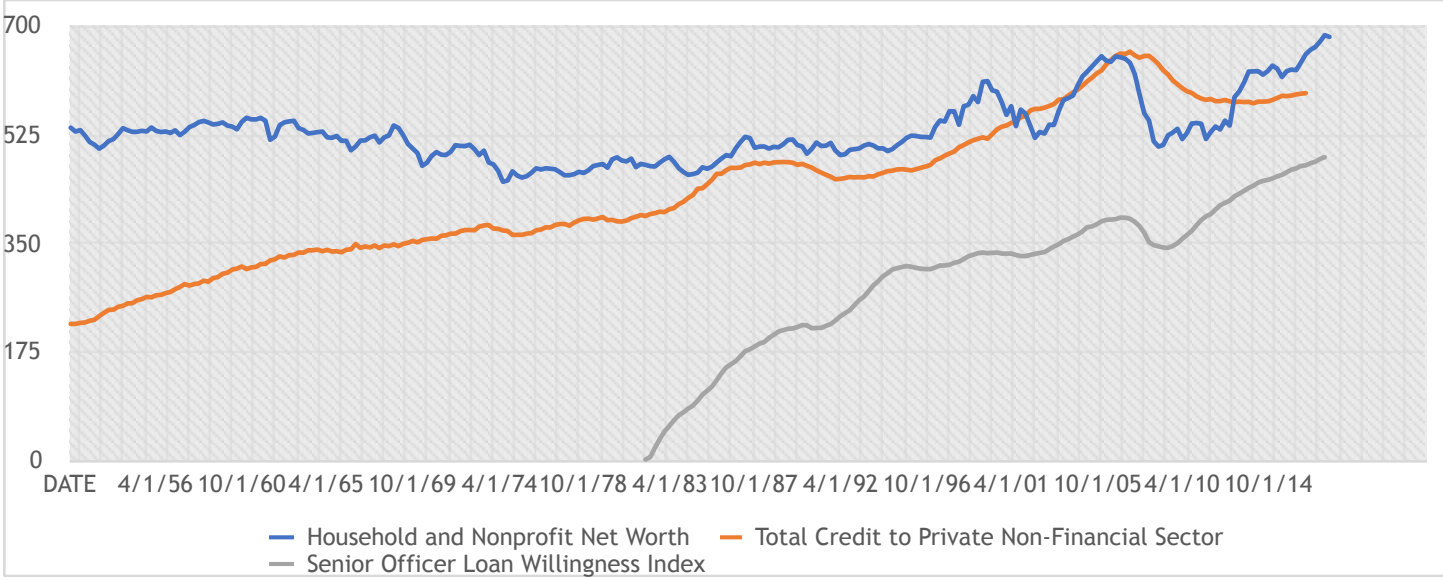

Figure 2: Household and Nonprofit Net Worth to Disposable Income and Total Credit to Private Non-Financial Sector to GDP

Source: U.S. Bureau of Economic Analysis

Rather than expectations of high future income, households were driven by social motives and increasingly relied upon access to credit markets to smooth out consumption (Barba

& Pivetti, 2011; Palley, 2012). Duesenberry's relative income hypothesis provides offers a different explanation of household saving or consumption decisions beyond LCIH or PIH (Cynamon & Fazzari, 2013; Duesenberry, 1949). Rather than projecting a future income stream, individuals attempt to keep their consumption at a level relative to their social settings. Expenditure can be linked to local and societal norms as agents try to maintain status. In contrast to an absolute level of consumption that might move with income, households are more concerned with 'keeping up with the Joneses' in a manner similar to Veblen's conspicuous consumption.

Debt and credit flows rose in earnest in 1984 and aggregate net worth followed suit in the mid-1990s. The rise of private debt and household net worth is shown in Figure 2. The gap between spending and income has been filled by net worth driven credit and private debt as consumers attempted to maintain their relative consumption levels. Income and wealth remain important, but now psychological nature and herd behavior also influence household spending and saving patterns. As with Veblen, Duesenberry accords an important role to habit formation, meeting of local norms, and the social visibility of consumption.

Few LCIH and PIH models address the cumulative rise of private debt in the last three decades and its effect on consumption. When debt markets are incorporated, they are used as a consumption smoothing mechanism, contracted when income is low, and repaid when income rebounds (Hasset & Mathur, 2012). The intuition for individual agent consumption smoothing, though attractive, is not easy to generalize at the macrolevel. Income growth has been slow for middle-income Americans, hindering the repayment of debts, and the productivity gap emerging

in the late 1970s has only grown.[5] Private debt has risen significantly for middle- and lower-income groups at all ages (other than seniors) while incomes and saving have faltered.[6] The LCIH and PIH explanation for stagnant wages coinciding with rising wealth and debt levels has been unsatisfactory.

Recent extensions to the wealth effect story link the decline of consumption to differential debt overhang following the Great Recession. Mian and Sufi (2015) argue that the private debt and credit buildup was unevenly distributed in poorer neighborhoods and that the crash disproportionately affected those regions. Using homes and real estate as collateral, U.S. households increasingly relied upon leverage to finance their spending. Lower income groups responded to a shock to their net worth by reducing consumption expenditures more than the affluent (Mian & Sufi, 2012). For instance, in lower-income regions the average propensity to consume is 5 to 7 cents for every dollar lost in housing wealth, larger than past wealth effect results (2 to 3 cents). Rising prices enable additional borrowing and spending. During a business cycle expansion, poorer regions' consumption responded more positively from access to credit.

However, a multitude of work has been done showing the rise in income inequality in the US since 1980 (Krueger, 2012; T. Piketty & Saez, 2003; Thomas Piketty & Saez, 2014). With the upward distribution of incomes and rising inequality, formerly middle-income households have fallen into lower socioeconomic standing (Pew Research, 2016). Using data from the World Wealth and Income Data (WID) base, the Pre-tax national income shares of the bottom 50%, top

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[5] Productivity has continued to grow for U.S. workers but median household wages have not. One example among many is from the Bureau of Labor Statistics authors Fleck, Glaser, and Sprague (2011).

[6] Household debt only grew from new borrowing during the 2000s. From 1980 to 1998, 'Fisher dynamics' of low-income growth, high effective interest rates, and low inflation were the cause for rising debt to income (Mason & Jayadev, 2012).

10%, and middle 40% can be shown in Figure 1.[7] Even with the exclusion of the top 1% group, income shares for the bottom and middle groups have fallen.

Trends in the disparity of US household wealth are even more significant than that of income. Using data from the WID, Figure 2 portrays the share of wealth controlled by the top 1 and middle 40% of households. The upward redistribution of wealth tracks closely with that of changes to income share in the early 1980s. In addition to what is shown, the top 10% have seen their share of wealth rise from both asset price growth and higher marginal saving (Piketty & Zucman, 2014; Bunting, 2009; and Dynan, Skinner & Zeldes, 2004). In contrast, the 50-90% group, while making some gain, compared to upper incomes, in the early years of the housing boom, has diminished. Wealth accruing to the lower 50% has stagnated, even falling as this group took on more debt in the 2000s (Wolfe, 2012).

Stagnant wages and growing wealth inequality forced the US household to sustain itself on credit, private debt, and asset price growth. Credit fills the gap in aggregate demand that once was filled by wage growth (Palley, 2012). Consumption and its relation to disposable income appear to have changed, but permanent/expected income or simple wealth effects are unable to fully explain the shift. Rather than diminished consumption as incomes and wealth fell, middle-income Americans resorted to private debt to keep their relative consumption in line with their neighbors.

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[7] "Pre-tax national income is the sum of all pre-tax personal income flows accruing to the owners of the production factors, labor and capital, before taking into account the operation of the tax/transfer system, but after taking into account the operation of pension system. The central difference between personal factor income and pre-tax income is the treatment of pensions, which are counted on a contribution basis by factor income and on a distribution basis by pre-tax income. The population is comprised of individuals over age 20. The base unit is the individual (rather than the household) but resources are split equally within couples."

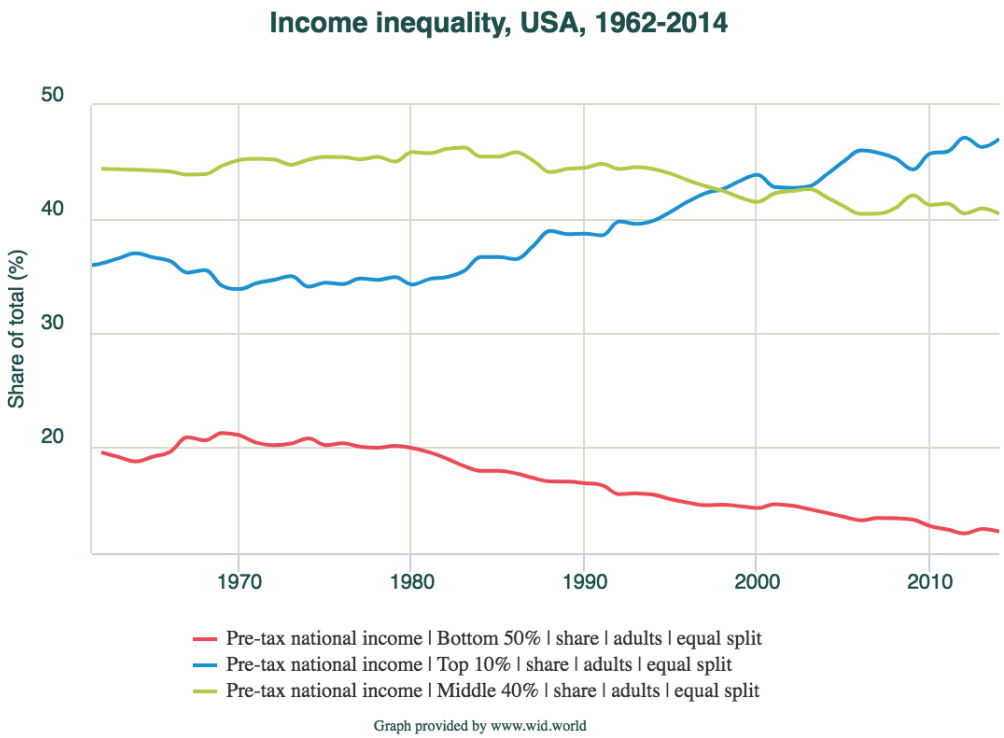

Figure 3. US Pre-Tax National Income Shares

Source: World Wealth and Income Database

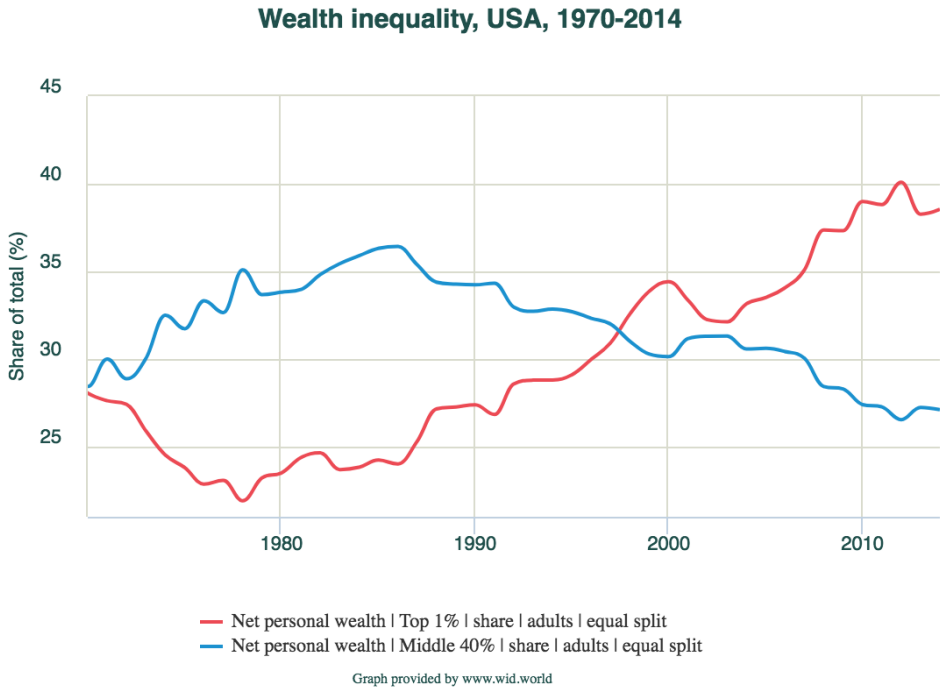

Figure 4. US Net Personal Wealth Shares

Source: World Wealth and Income Database

3. Drivers of Wealth and Credit

In addition to asset prices having a larger impact on consumption, inflated assets have also indirectly influenced the path of net saving and net worth, shown in Figure 5. Beginning in the 1980s, the two series drift apart as net saving falls and ceases to be the primary driver of the household sector's wealth. At the same time, realized and unrealized capital gains from financial and nonfinancial assets began to appreciate. The revaluation of existing assets (asset price inflation) appears to be responsible for changes in household net worth in the following periods. The net worth to disposable income ratio fluctuates around 4.5 between 1960 and 1990, peaking at 6.7 in 2007.[8] The raised levels of net worth ratio coincide with two major asset bubbles: the tech stock boom in the 1990s and the subprime-housing run that occurred in the 2000s.

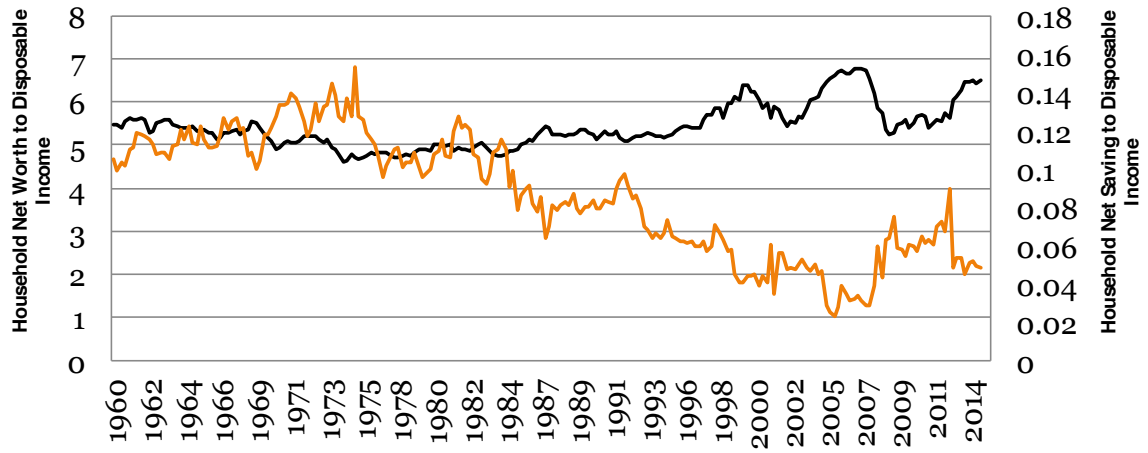

Figure 5. Net saving to disposable income and net worth to disposable income ratios.

Source: U.S. Bureau of Economic Analysis

[8] A similar rise in wealth is shown if using household net worth to GDP, which historically ranges between 3 to 3.5, but rising to 4.5 to 5 in the mid-2000s.

The relationship among household assets, net saving, and net worth can be further analyzed within the Integrated Macroeconomic Accounts (IMAs). From traditional national accounting, net saving is unspent disposable income for a given period. Each sector's residual flows of saving are then accumulated towards its net worth. Following the steps of Yamashita (2013), Figure 6 is a scatter plot of quarterly household net saving and net worth ratios for the period 1960-2018. The data depict a slightly negative relationship between household net worth and the saving rate, mirroring the negative relationship depicted in Figure 5. The inverse relation between household saving and net worth differs from the common narrative of wealth accumulation, where growth in the former is expected to raise the latter.

Holding gains are the other key component of household net worth; these gains capture changes in asset prices over a period of time. Fundamentally, holding gains account for the price revaluation of both financial assets such as corporate equities and nonfinancial assets in real estate. They also capture indirect assets such as mutual funds, pensions, and insurance contracts. Using the same period, 1960-2014, Figure 7 documents the close relationship between a change in household net worth and holding gains and that from net saving. The vertical axis measures the change in the net worth to disposable income ratio from one period to the next, and the horizontal axis shows holding gains or net saving for that period. Figure 6 and Figure 7 demonstrate that the increase in household wealth occurs from price change rather than quantity effects.

The inverse relation between household net worth and saving brings into question whether household saving is necessary for wealth accumulation or the supply of credit.[9] Even with the shrinking household saving ratio, both net worth and credit in the US have grown drastically. In questioning the measurement of domestic saving, one strand of research suggests that household net worth itself may act as a form of saving for Gale, Sabelhaus, and Hall (1999) and Pollin (1997).[10] Essentially, the traditional view of saving has been supplemented, beyond tracking the residual form. Clearly, net worth itself is a stock variable whereas saving is a flow variable. However, the essential point is that growing household net worth acts as an intermediary for credit even as flows of saving in relation to income shrink.

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[9] One explanation emphasizes net borrowing or the flow of international savings into the US as outlined in Ben Bernanke's 'global saving glut' (Bernanke, 2005). The famed 'glut' outlines how excess foreign saving has influenced U.S. credit conditions (Bernanke, 2007). During the mid-2000s, inflowing funds from the rest of the world purchased long-term U.S. financial assets. The net saving from the rest of the world made up for declining U.S. saving and pushed long-term interest rates down even as the Federal Reserve tried to raise them. Capital flows into the US propped up the dollar while allowing for 'liquidity trap' conditions (Krugman, Dominquez, & Rogoff, 1998). Bernanke's general conclusion is that excess saving resulted from an expansion in global funds in comparison to available global investment. In the US, capital account surpluses allowed for the persistent and expanding trade deficits, 6% of GDP at its peak. However, the 'saving glut' narrative may in fact be a story of global demand deficiency or a lack of investment opportunities. In search of safety, U.S. capital markets, and later real estate, provided a haven for foreign funds. Following these assumptions, the Great Recession resulted from an inability of the US to continue intermediating longer-term foreign saving with its own short-term foreign investment (D'Arista & Erturk, 2010). Rather, credit stayed within the US, thereby creating conditions for the housing bubble. Though essential to any narrative of U.S. credit conditions in the mid-2000s, we forego any additional discussion of international influences upon credit for the present. However, the influence of foreign saving, whether from Bernanke's glut in foreign saving or from a deficiency in global investment, fits well in either perspective on saving. The rise in U.S. financial asset purchases from the foreign sector inflates existing assets and props up net worth.

[10] Yet a third explanation why financial markets were not adversely affected by lower saving can be that gross saving might have had a trend different from that of net saving. However, the difference between gross and net saving is simply depreciation, and there is no evidence that depreciation has significantly increased in the last couple of decades.

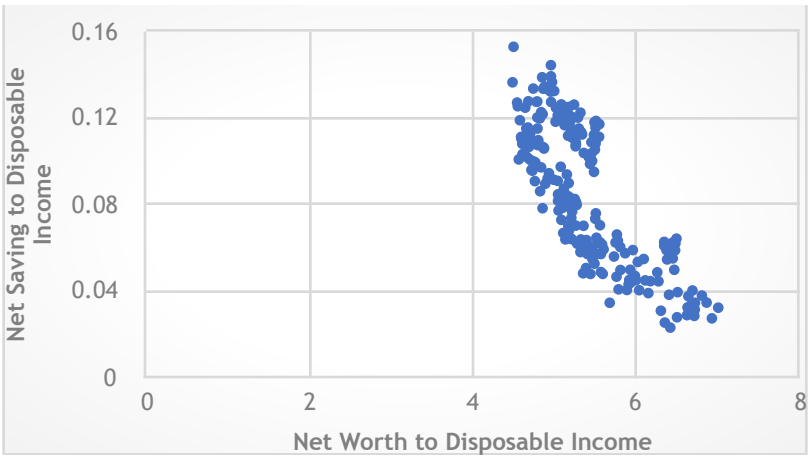

Figure 6: US Net Saving and Household Net Worth

Source: U.S. Bureau of Economic Analysis

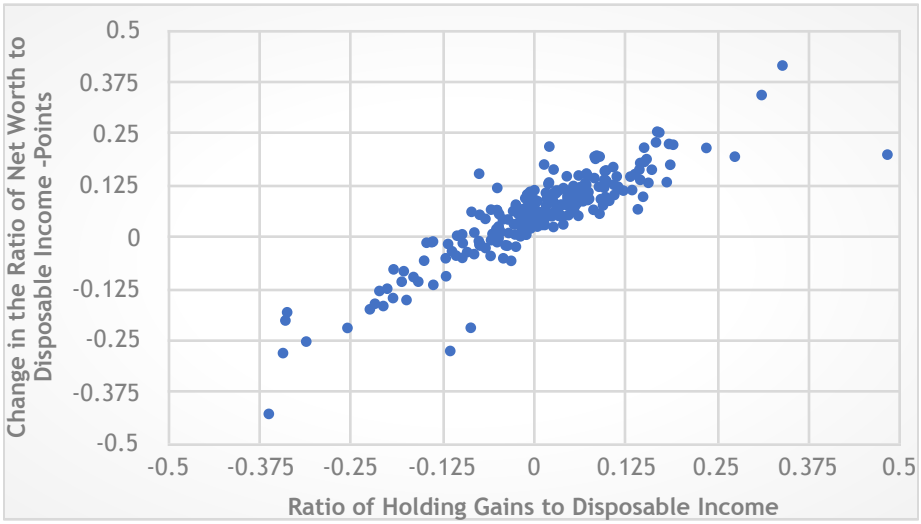

Figure 7: Change in the Ratio of Household Net Worth and the Ratio Holding Gains to Disposable Income

Source: U.S. Bureau of Economic Analysis

The increased importance of asset price inflation in U.S. households' ability to finance their expenditure goes beyond the simple wealth effect, because higher asset prices also increase

the households' ability to access credit.[11] Nonetheless, as depicted by Figures 6 and 7, growth in net wealth ratios are driven entirely by change in asset prices or holding gains. Much of the paradoxical behavior of household saving is answered by the rise of increasing inequality, depicted in Figures 3 and 4, and credit shown in Figure 2 (Brown, 2005). In addition, the saving that does take place is done by upper income groups (Dynan & Maki, 2005; Bunting, 2009).[12] Increased access to credit from asset price inflation, even if they do not own the assets, are sustaining lower and middle-income households.

4. Discussion and Policy

Figure 8 summarizes the two views presented in this paper. The upper portion describes the traditional though supplemented account of saving, consumption, and net worth. To explain the inverse relationship between the saving and net worth, also shown Figure 5, this view posits that the relationship is simply an artificial effect from excluding asset price revaluation in household saving. Agents with rational expectations view financial holding gains as a reflection of profit conditions in the real sector, permitting the decline in saving while maintaining net worth. If the growth of asset prices is in line with fundamental values, the prices can be thought of as part of future saving, which the measured increase in their net worth reflects. Household wealth becomes the intermediary, allowing for credit, which further impacts expenditure through

[11] In addition, macroeconomists must grapple with the question of whether savings remains a useful indicator of prosperity.

[12] Additionally, amplified procyclical credit and anticyclical saving have occurred for reasons beyond the rise of foreign saving and a rational household response to asset price inflation (Shiller, 2015).

wealth or collateral effects. In regards to consumption, additional wealth gains from asset prices substitute for income gains.

The lower portion of Figure 8 presents the alternative view argued here, which emphasizes the mutually reinforcing relationship between asset prices and credit. Rather than asset prices as a complement to saving, this view holds that the link between credit and asset values is stronger than that of credit to net worth. This distinction is important for three reasons: first, it explains and supports the view that asset mispricing is pervasive, with real macroeconomic effects. For instance, the appreciation of assets, of which lower income and wealth groups hold a small portion, still influences macro credit conditions. Second, asset price expectations may have more to do with their own dynamics rather than changes in any *fundamentals*. If asset prices rise from inertia or what Soros calls 'reflexivity', this calls from drastically different financial and monetary policy (2009). If asset values are interdependently formed from actual, expected, and fundamental values then investors' beliefs about markets efficiency change the way they invest, which then changes the nature of the markets[13]. Finally, the very changes in behavior that are discussed here support the view that financial innovation and deregulation have altered macrorelationships that were formerly considered stable. Amplified reliance on asset price and debt fueled growth rather than traditional sources, e.g., education, infrastructure and public works, research and technology, raises volatility and vulnerability for the household sector.

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[13] The process creates self-reinforcing or defeating feedback loops. For instance, "Negative feedback brings the participants' views and the actual situation closer together; positive feedback drives them further apart" (Soros, 2013, p. 322).

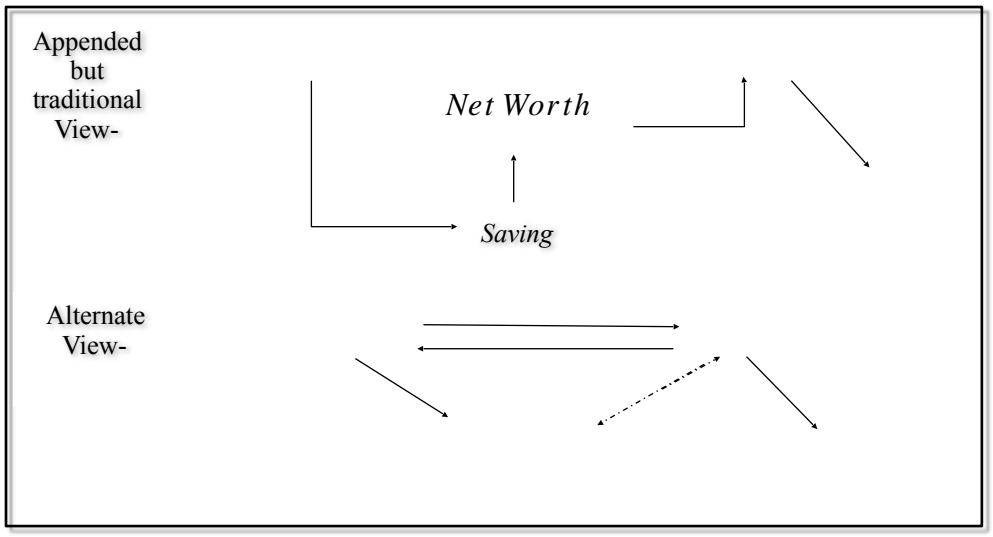

Figure 8. Views of credit-saving-asset price interaction.

The alternative view is supported by the following observations since the mid-1990s: (a) asset price inflation has been the primary driver of U.S. household net worth, (b) credit expansion has been the main factor behind asset price appreciation, and (c) real spending is increasingly responsive to asset swings as shown in Figure 9. Financial sentiment and profit expectations have always been relevant in the study of household and firm spending, the warnings of speculative motives from Keynes and Minsky are all the more prescient.

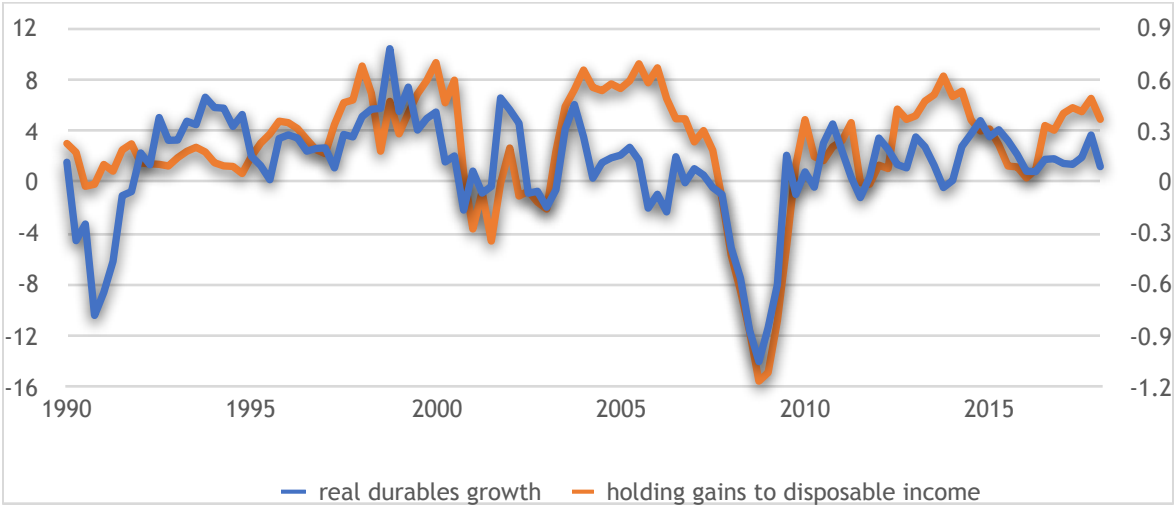

Figure 9: Real Consumer Durables Growth and Holding Gains to Disposable Income Ratio

Source: U.S. Bureau of Economic Analysis

The traditional view which builds upon the wealth effect literature is a useful augmentation for LCIH and PIH in explaining consumptive behavior with asset price appreciation; however, it ignored multiple crucial macroeconomic events of the previous two decades. Wealth effects as a supplemental theory omit debt and posit spending and saving changes when people think financial or nonfinancial asset values are changing. Rather than simple wealth effects, the rise of asset prices in conjunction with debt suggests the real vulnerability is reliance upon the supply of credit. The traditional story of a wealth shock, up or down, would not require an additional shift in private debt to affect consumption. Instead, an upward shift in wealth provides the collateral allowing access to credit and thus a spending change. Asset price growth and its role for collateral and credit availability goes further than what is suggested by traditional wealth effect research.

This paper has shown a multi-directionl link between wealth as driven by asset price inflation and credit with the significant theoretic and empirical work supporting it. However, the link is tiered due to staggering wealth inequality. First, wealth effects are really only asset price effects as the personal saving rate moves in the opposite direction to changes in net worth during the business cycle. Second, with the rapid rise in wealth disparity, asset price effects are only influential because of their influence upon credit conditions. With increased financial deregulation and financialization the US household sector's saving and consumption behavior are increasingly tied to asset prices. However, this paper argues that the link is indirect because wealth is held by so few and is only important for its influence upon credit conditions. The structural liabilities at the heart of the sub-crisis remain present. On the surface, employment

conditions have improved. Nonetheless, the deep-seated vulnerabilities of asset and debt-driven growth remain (Palley, 2014). In the face of another asset price burst and national wealth shock, lower and middle-income households remain susceptible.

Nevertheless, traditional explanations of household behavior such as life cycle and permanent income hypothesis have attempted to tie the appreciation asset prices to explain persistent consumption and the fall in saving. The result leads to an excessive reliance on the wealth effect to restore economic prosperity[14]. The multiple rounds of quantitative easing (QE) to save the financial system have restored the saving and wealth of higher income groups. QE has restored asset prices and demonstrates a continued reliance upon the saving of the rentier, famously criticized by Keynes.

Nonetheless, the neoclassical approach to consumption and saving remain, as it "delivers an ideological backing for individualism as both an explanation of and justification for the distribution of wealth (Green, 1991)." The appended approach re-defining saving to include net worth suggested by mainstream authors, Gale & Sablehaus (1999), Poole (2007), and Skinner (2007), further justifies the status quo in macroeconomic policy. Rather than changing income conditions through rebuilding and the socialization of investment Keynes advocated for, policy makers have restored credit conditions. Effectively, we have traded current income for credit, hoping it has the ability to finance the present and future.

REFERENCES

Ando, Albert, and Franco Modigliani. "The" life cycle" hypothesis of saving: Aggregate implications and tests." *The American economic review* 53, no. 1 (1963): 55-84.

Bernanke, Ben S. *The global saving glut and the US current account deficit*. No. 77. (2005). Speech, Board of Governors of the Federal Reserve System (U.S.), Retrieved from http://EconPapers.repec.org/RePEc:fip:fedgsq:77.

Bernanke, Ben S. *The financial accelerator and the credit channel*. No. 296. (2007). Speech, Board of Governors of the Federal Reserve System (U.S.), Retrieved from http://EconPapers.repec.org/RePEc:fip:fedgsq:296.

Bernanke, Ben S., Mark Gertler, and Simon Gilchrist. "The financial accelerator in a quantitative business cycle framework." *Handbook of macroeconomics* 1 (1999): 1341-1393.

Board of Governors of the Federal Reserve System (US), Rest of the world; net lending (+) or borrowing (-) (capital account), Flow [RWLBCAQ027S], accessed from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/RWLBCAQ027S, March 4, 2017

_____. "Survey of Consumer Finances." (2013). Accessed at https://www.federalreserve.gov/econres/scfindex.htm

Borio, Claudio. "The financial cycle and macroeconomics: What have we learnt?." *Journal of Banking & Finance* 45 (2014): 182-198.

Brown, Christopher. *Inequality, consumer credit and the saving puzzle*. Edward Elgar Publishing, (2008).

Bunting, David. "The saving decline: Macro-facts, micro-behavior." *Journal of Economic Behavior & Organization* 70, no. 1 (2009): 282-295.

Cynamon, Barry Z., Steven Fazzari, and Mark Setterfield, eds. *After the great recession: the struggle for economic recovery and growth*. Cambridge University Press, (2013).

Duesenberry, James Stemble. "Income, saving, and the theory of consumer behavior." Cambridge, MA. Harvard University Press. (1949).

Dynan, Karen E., Jonathan Skinner, and Stephen P. Zeldes. "Do the rich save more?." *Journal of political economy* 112, no. 2 (2004): 397-444.

Fair, Ray C. "Wealth effects on world private financial saving." *International Economics* 149 (2017): 15-26.

Friedman, Milton. "The methodology of positive economics." *Essays in positive economics*. University of Chicago Press, (1953).

Friedman, M. *A theory of the consumption function*. Cambridge, MA: NBER Books. (1957).

Galbraith, John Kenneth. *The affluent society*. Houghton Mifflin Harcourt, (1998).

Gale, William G., John Sabelhaus, and Robert E. Hall. "Perspectives on the household saving rate." *Brookings papers on economic activity* 1999, no. 1 (1999): 181-224.

Glick, Reuven, and Kevin J. Lansing. "Consumers and the economy, part I: Household credit and personal saving." *FRBSF Economic Letter* 1 (2011): 1-5.

Greenspan, A. Greenspan: Ignore The Economy, "Only The Stock Market Matters". *Zerohedge*. T. Durden. New York, Tyler Durden. (2013).

Guidolin, Massimo, and Elizabeth A. La Jeunesse. "The decline in the US personal saving rate: is it real and is it a puzzle?." *Federal Reserve Bank of St. Louis Review* 89, no. November/ December 2007 (2007).

Keynes, John Maynard. "The general theory of employment, interest, and money (McMillan, London)." (1936).

Keynes, John Maynard. "The general theory of employment." *The quarterly journal of economics* 51, no. 2 (1937): 209-223.

Mian, A.R., & Sufi, A. *House of debt: How they (and you) caused the great recession, and how we can prevent it from happening again*. Chicago, IL: University of Chicago Press. (2015).

Piketty, Thomas, and Gabriel Zucman. "Capital is back: Wealth-income ratios in rich countries 1700–2010." *The Quarterly Journal of Economics* 129, no. 3 (2014): 1255-1310.

Poole, W. How dangerous is the U.S. current account deficit?, No 93, (2005). Speech, Federal Reserve Bank of St. Louis, Retrieved from http://EconPapers.repec.org/RePEc:fip:fedlps:93.

Poole, W. U.S. saving. Speech. Presented at the CFA Society of Nebraska, Omaha, NE, (2007). February 15, 2007; Retrieved from https://fraser.stlouisfed.org/scribd/?item_id=18937&filepath=/docs/historical/frbsl_history/presidents/poole/20070215.pdf#scribd-open.

Skinner, Jonathan. "Are you sure you're saving enough for retirement?." *The Journal of Economic Perspectives* 21, no. 3 (2007): 59-80.

U.S. Bureau of Economic Analysis, "Table S.q.3 Households and Nonprofit Institutions Serving Households," (2015). https://www.bea.gov/national/nipaweb/Ni_FedBeaSna/TableView.asp?SelectedTable=12&FirstYear=2015&LastYear=2017&Freq=Qtr. Accessed September 10, 2015

------. Personal Saving Rate [PSAVERT], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/PSAVERT, March 4, 2017.

Veblen, Thorstein. "Fisher's rate of interest." *Political Science Quarterly* 24, no. 2 (1909): 296-303.

Veblen, Thorstein. "The Theory of the Leisure Class (Modern Library, New York)." (1934).

Watkins, John P. "Corporate power and the evolution of consumer credit." *Journal of Economic Issues* 34, no. 4 (2000): 909-932.

World Wealth and Income Database, "Wealth Inequality, USA, 1970-2014." (2017). http://wid.world/country/usa/. Accessed May 12, 2017.

Wolff, Edward N. *The asset price meltdown and the wealth of the middle class*. No. w18559. National Bureau of Economic Research, 2012.