Ten years after the crisis: a lost decade?

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Abstract
The Great Recession was the most significant economic downturn since the Great Depression. This paper discusses the primary causes of the Great Recession and studies whether these problems were resolved or are lying dormant at the periphery of the system waiting to wreak havoc again. We focus on the increasing financialization of the economy and the current state of household finances. Has the ten years following the Great Recession been a lost decade for American households?

JEL codes D14, E21, E44, G18, G28

Key words deregulation, financialization, housing bubble, household debt, income inequality, Glass-Steagall Act, Great Recession

"The more things change, the more they stay the same" Bon Jovi (as well as Jean-Baptiste Alphonse Karr).

1. Introduction

The Great Recession was the most significant economic downturn since the Great Depression. Understanding its primary causes and consequences is of immense importance. This paper discusses the causes of the Great recession, but more importantly, it studies whether the problems leading to the Great Recession have been resolved, or whether they are still lurking below the surface of the United States economy.

There is currently no agreement as to when the Great Recession began. Some take December 2007, the official NBER dating of the recession, as the official starting date. On this approach, the recession lasted until June 2009, making it the longest recession since the end of World War II. It also had the most severe financial consequences of all post-War recessions. According to the Federal Reserve (Rich, 2013),

> "Home prices fell approximately 30 percent, on average, from their mid-2006 peak to mid-2009, while the S&P 500 index fell 57 percent from its October 2007 peak to its trough in March 2009. The net worth of US households and non-profit organizations fell from a peak of approximately $69 trillion in 2007 to a trough of $55 trillion in 2009."

Others date the start of the Great Recession with the fall of Lehman Brothers on September 15, 2008. A good case can be made that this precipitated the subsequent stock market plunge, massive layoffs, sharply falling home prices, and government bailouts that we associate today with the Great Recession. Once Lehman failed, AIG could not make good on the loans made by other institutions to Lehman that it had insured. This put AIG at risk of collapse, as well as other financial institutions that had lent money to Lehman. As everyone sought safety, this led to large withdrawals from financial institutions, which were then forced to curtail their lending. A deep recession became inevitable.

We prefer another starting date for the Great Recession, February 2008, when the Auction Rate Securities (ARS) market collapsed, with more than 75% of auctions failing. Estimates put the value of this market at $330 billion at the time; so around $250 billion in assets were frozen in the US, rendering many investors illiquid (Lee, 2008). Seven years later, $50 billion of ARSs were still frozen (Doherty, 2015).

ARSs were developed in the early 1980s by Ronald Gallatin of Lehman Brothers. The first ARS was registered with the SEC in July 1984, and the first auctions took place a few months later. As the name implies, they carry a variable interest rate that is set periodically by auction. These securities typically receive AAA ratings before being auctioned off because security raters look at default probability when evaluating securities but not the possibility of auction or market failure. ARSs were "sold" to customers[1] of financial institutions as an alternative to money-market funds – they provided liquidity and a slightly higher rate of interest. With a minimum investment of $25,000, ARSs were held by many upper middle-class households. They were intended to finance retirement, a child's college education, or to buy a home.

These securities can probably be best described, following Keynes (1936, Ch. 12), as a game of Old Maid. There is a regular auction to see who gets the Old Maid card. Those winning the auction get slightly higher rate of return on their money. However, the game can end at any point. In this case, whoever holds the Old Maid is stuck because they cannot get their cash. They must wait until the game starts up again, or until a market develops again for these securities. If no market develops, they must wait until the underlying securities get paid off, which can take many years.

Whatever date is chosen as the start of the Great Recession, it is clear that something happened in early and mid-2008 causing severe damage to the US economy – unemployment at 10%, home values falling by more than 25% nationwide, and historic bank bailouts. This paper looks at the Great Recession around ten years after it began. It first examines primary causes of this event; then it argues that the problems leading to the Great Recession have not been solved. The final section concludes with some policy solutions.

2. What led to the Great Recession?

Just as there is little agreement on a starting date, there is little agreement on the causes of the Great Recession. A large number of studies (Blinder, 2013; Jarrow, 2011; Mian and Sufi, 2014; National Commission on the Causes of the Financial and Economic Crisis in the United States, 2011; Roubini and Mihn, 2010; Stiglitz, 2009; van Treeck and Sturn, 2012, to name just a few) have sought to determine what led to the economic and financial crisis that started ten years ago. Many suspects have been identified – lack of adequate government regulation, a worldwide saving glut, mortgage fraud, sub-prime and predatory lending, failures of corporate governance and risk management, a breakdown in accountability and ethics, and rising inequality. So many guilty parties have been identified that it feels like Agatha Christie's *Murder on the Orient Express* – spoiler alert, everyone did it.

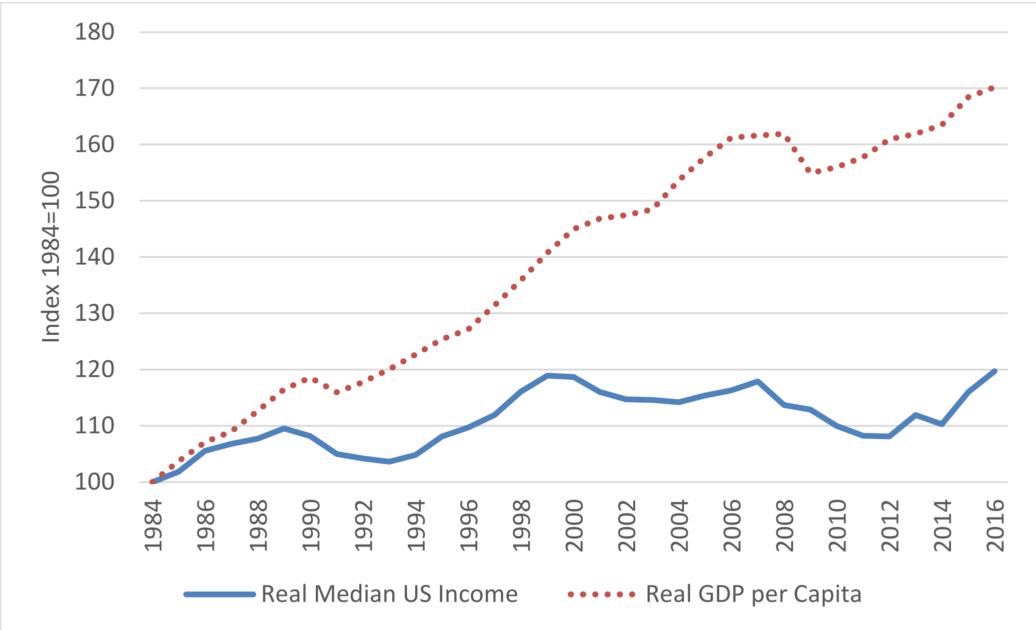
[1] Technically, they were "rented" to customers for a short period of time – until the next auction took place and someone else got to earn the interest on these securities.

In what follows we winnow down the main causes to a few related culprits – *stagnating household incomes* over a long period of time along with *rising household debt*; *housing problems*; and *government regulatory failure* regarding large financial institutions and shadow banks.

Let's start by looking at households and household income. Figure 1 below shows real median household income and per capita real Gross Domestic Product (GDP) since 1984. A few things stand out here. Median incomes decline during recessions (1991, 2001 and 2008) and then recover during the subsequent expansion. Over the long term, median incomes rose through the late 1980s and most of the 1990s, but stagnated thereafter. US median household income in 2016 was $59,039; in real terms this is nearly the same as 1999. To put this into a broader historical context, real median incomes grew during the four decades following World War II, and people came to expect that this would continue when making financial decisions. Starting in the late 1980s, we have seen only cyclical variations. The assumption of constantly rising living standards no longer holds true.

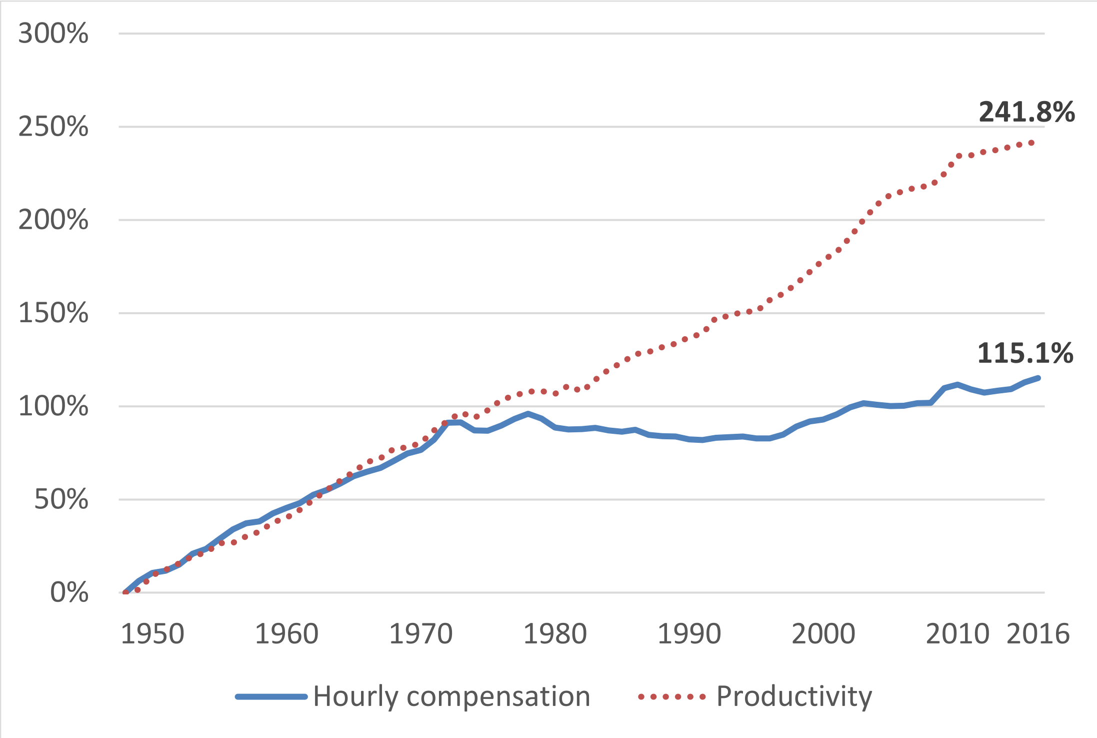
Equally concerning is the fact that per capita GDP has increased over 70% since 1984, while median incomes rose less than 20%. The slowdown of median income growth is *not* due to a lack of productivity, or reduced labor supply, but rather indicates a distributional problem. Another way to see this is through the difference between the growth in worker productivity and the growth in worker compensation. These two growth rates tracked each other closely until the 1970s, when they first began to diverge. Then they began to move apart more quickly, as well as continuously, with workers getting only a small fraction of the gains due to their improved productive capacity (see Figure 2).

Figure 1 Real median incomes in United States and real GDP per capita, 1984-2016



Source: FRED (2017).

Figure 2 Hourly compensation (wages and benefits) and productivity growth (per hour worked) in the United States, 1948-2016



Source: Economic Policy Institute (2017).

Things are even worse than the standard data show. One problem is the rise of household debt, something that we have focused on in previous work (Pressman and Scott, 2009; Scott and Pressman, 2011). Some debt was incurred during recessionary times, when government support (such as unemployment insurance) was inadequate. Some was incurred to deal with rising inequality (Kumhof et al., 2015). With wages falling for many people, households borrowed to pay fixed and relatively fixed expenses (such as rent or mortgages, food, car payments, insurance, and utilities). Also, contemporary consumption-based economies encourage consumption as part of identity. As previous non-necessary goods become *en vogue* in society (e.g., expensive coffee drinks) people engage in what Thorstein Veblen (1899) called pecuniary emulation – often beyond their financial limits. Finally, some debt undoubtedly stemmed from bad luck – a health problem, parents who could not or would not help pay for college, or an investment decision that turned out bad only in hindsight (Frank, 2016).

Whatever the cause, debt must be repaid with interest. Looking at just the interest payments (and ignoring principal repayment), we previously estimated that government poverty rates were underestimated by 8% because they did not include lost income due to interest payments on consumer debt. We also found that, when interest payments on consumer debt get subtracted from income, income inequality was underestimated by 7.2% (Pressman and Scott, 2009). Likewise, the lost income from interest payments on consumer debt reduced the size of the middle class by 11.7%, or 2.1% of US households were "squeezed" out of the middle class[2] due to income going to make interest payments rather than purchase goods and services (Scott and Pressman, 2011).

A second problem with the standard measure of household income is that is assumes households remain the same over time. According the US Census Bureau, a household is officially defined as one or more people living together under the same roof. The make-up of these households can and do change over time due to economic circumstances and sociological factors. While this is not the place to analyze the causes of this change, we want to point out that there are consequences of this for estimates of median household income.

Consider a married couple with each making less than the median income, but whose combined income puts them above the median. If they divorce, then one income above the mid-point gets replaced with two incomes below the median. As a result, the new median becomes the income level that was just below the prior median income. If this happens hundreds of thousands of times, real median income can fall substantially.

Or consider a student who graduates from college. When jobs are plentiful and incomes reasonably good, the graduate can set up their own household and pay rent, utilities, etc. with their income (maybe a little help from their parents). Since young graduates are typically single and usually earn less money when starting their working career, they are likely to become a single-person household and earn less than the median income. When graduates form their own household when leaving college, this pushes down the median income. In contrast, when graduates cannot find a good job and live in their parents' home, or what Brunnermeier et al. (2016, pp. 110, 244) call "Hotel Mama," it increases income for many households because the income from the graduate living at home gets added to the income of other household members. Median incomes therefore rise.

This latter change is not just some theoretical curiosity. Fry and Passel (2014) report a sharp increase in multi-generational family households between 2000 and 2012. For the population as a whole, multi-generational households increased from 15.1% to 18.1% (bringing it back to 1950s levels) while for individuals aged 25 to 34, the increase was from 15.8% living in multi-generational families to 23.1%, returning it to 1940s levels. Moreover, they find this change beginning in earnest in 2008, at the outset of the Great Recession.

There is a third problem with the standard economic figures on household income. Seeking to maintain their standard of living, many households have increased their work effort. More family members are working and are working additional hours, additional days and additional jobs. The extra money gets counted in household income. But there is another side to greater work effort – it comes with higher costs. And these costs do not get counted in standard economic measures that are supposed to track living standards. Living costs rise due to such things as additional transportation requirements, and people eating out more because they lack the time and energy to cook meals at home. Most important of all, there are additional child care costs for many families when all the adults are working more. A family with a four-year old and an infant spend, on average, $18,000 per year on child care; this constitutes around one-third of the household income for a typical American family (Glynn and Corley, 2016).

[2] We define "middle-class households" as those with adjusted household income between 50% and 150% of median adjusted household income.

The cost of additional work effort may go even beyond the monetary cost. Households squeezed by lower income, greater debt and additional work lack time and the mental bandwidth to make good financial decisions (Mullainathan and Shafir, 2013). The financialization of everyday life (see Bryan et al., 2012) requires people to be experts in their financial affairs within a system that is complex and uncertain (e.g., the transition from pensions to 401Ks). Financial institutions are able to take advantage of this financial knowledge gap, which is where regulatory failure also comes into play. Deregulating the financial industry enabled firms to engage in risky, deceptive and illegal behavior, setting the stage for the housing bubble. Financial institutions pushed risky investments on unsuspecting middle-class households looking to maintain their economic condition and status in the face of economic slowdowns and rising inequality. For example, they promised higher returns on an investment that they claimed was completely liquid (ARSs), and they promised borrowers that their homes could only go up in price and that mortgages could always be refinanced with the gains from higher home prices.

The *Financial Crisis Inquiry Report* (National Commission on the Causes of the Financial and Economic Crisis in the United States, 2011) singles out the Federal Reserve, and Alan Greenspan in particular, for failing to do their job. Created to protect the public and ensure the safety and soundness of the US financial system, the Fed refused to set reasonable lending standards. It also failed to heed warnings about predatory lending – including warnings from Fed Governor Ed Gramlich (2007), while he was on his deathbed. Lack of regulation led to liar loans and NINJA (No Income, No Job, No Assets, no problem) loans, and to the exotic mortgages (some with interest-only payments and some where the principal grew over time rather than fell) with low teaser rates that homeowners could only pay if the value of their home increased sharply in value so that the mortgage could be refinanced when higher rates were about to kick in. These mortgages were then packaged, given AAA ratings (by agencies needing the business and ignoring systemic risk), and then sold or rented (as ARSs) to unsuspecting (or ill-informed) investors (see Pozsar, 2008).

3. Where are we now?

Casting blame is always fun; but that is not our purpose here. We wish to address a more serious issue – whether the problems leading to the Great Recession have been solved, or whether they lurk below the surface of the US economy. We fear the serious problems remaining, and we are concerned that once the US economy stops growing the next recession will also be deemed “Great,” similar to how the economic collapse of 1887-9 was called the “Great Depression” before the 1930s.

Considerable economic history backs the view that we should be worried about another economic and financial crisis. Until World War II, the US economy experienced frequent economic problems that looked just like a Great Recession or Great Depression. The panic of 1907 (Bruner and Carr, 2007) was the twelfth bank panic since 1814, and one of the worst (Calomiris and Gorton, 2000) in US history. It was so bad that private bankers (such as J.P. Morgan) could no longer solve the problems associated with a financial crisis, leading to the formation of the Federal Reserve in 1913. Nonetheless, panics arose 1914, in 1921 and again in 1929, when the great stock market crash led to the Great Depression. Over the 100-year period from the early 1800s to the early 1900s, the US economy encountered severe economic problems every 8-9 years on average.

For these reasons, we are interested in what happened 10 years ago and whether problems remain that threaten our economic future. As in the previous section, we divide these problems into three groups – stagnating household incomes (in conjunction with rising debt levels), housing, and inadequate regulation of financial institutions. This last problem is especially noteworthy because the crises in the 19th and early 20th century were financial panics that then damaged Main Street and average citizens. In contrast, the period from the end of World War II to the end of the 20th century was characterized by significant government regulation of the financial industry with few financial panics. Over time, the dominant paradigm changed from market regulation to a belief that free markets were more efficient than government regulation.

Deregulation began in the 1980s, and continued through the 1990s. The Garn-St Germain Depository Institutions Act of 1982 deregulated credit unions as well as savings and loans, and allowed non-bank banks (mortgage companies, payday lenders, and hedge funds that take in money from wealthy individuals and use this money to make loans) to exist. These "shadow banks" grew rapidly, unhampered by the many restrictions placed on banks. Their depositors or investors received higher returns on their money because they made risky loans at high interest rates. Deregulating these institutions increased the pressure to deregulate large commercial banks, so that they could compete with lightly regulated shadow banks.

The 1994 Riegel-Neal Interstate Bank Efficiency Act repealed restrictions on interstate banking. This fueled the rise of mega financial institutions that became too big to fail. Knowing that the government would have to bail them out if they were in jeopardy of going under, large banks could take on even greater risks since the downside of aggressive lending (bankruptcy) was mitigated by the implicit promise of a government bailout.

Finally, in November 1999 President Clinton signed the Gramm-Leach-Bliley bill, thereby repealing the Glass-Steagall Act of 1933. A New Deal reform, Glass-Steagall established deposit insurance and limited the risks that commercial banks could take with insured deposits. Under Glass-Steagall a bank could accept deposits and also make loans, or it could sell securities. However, it could not do both. If a bank made a loan, it had to keep that loan on its books, since it was prohibited from selling it. In addition, Glass-Steagall required that banks offer only standard fixed-rate mortgages. Its repeal led to the creation of exotic mortgages, which financial institutions then packaged together and sold off.

It seems noteworthy that a mere 9 years following repeal of Glass-Steagall we had our next major financial crisis.

3.a) Households

The good news for households is that jobs have returned. The US unemployment rate has fallen from 10% in October 2009, its peak during the Great Recession, to 4.1% in October 2017. Another bit of good news is that median household income (adjusted for inflation) has increased since 2012 by $5,708 – from $53,331 in 2012 to $59,039 in 2016 – putting it slightly above its level right before the Great Recession. The bad news is that median household income remains nearly unchanged since 1999 – resulting in no gains in living standards for typical household over a period of nearly two decades.

However, things are actually worse than this. As noted earlier in this paper, median income figures, released annually by the Census Bureau, do not take into account family size. As a result, they ignore the large demographic changes that took place over the past decade – fewer new households being created, adult children more likely to live with their parents, even returning home after college rather than finding a good job and establishing a household of their own. Adjusting household income by family size is a standard procedure for measuring inequality and computing relative poverty rates in cross-national studies. It is also standard in measures of absolute poverty rates, such as the Orshansky (1965; 1969) definition of poverty employed in the US.

Using the Federal Reserve's Survey of Consumer Finances (SCF) data (Federal Reserve Board of Governors 2017b), we adjusted household income using the OECD equivalence scale (see Atkinson, Rainwater and Smeeding, 1995), where each additional adult in the household counts as needing 0.5 of the income of the household to keep living standards constant and each child needs 0.7 of the income of the household head. We found that the real median adjusted household income was $33,315 in 2007, right before the start of the Great Recession; but in 2016 it was $32,220, or 3.3% lower. This decline does not show up in standard income measures. However, it indicates clearly that US households have lost ground; they are not yet back to where they were before the Great Recession.

Furthermore, these figures understate the two major financial problems plaguing many US households – debt and inadequate savings. Many people live paycheck to paycheck; nearly half (46%) of all adults say they could not come up with $400 in case of emergencies (Board of Governors of the Federal Reserve, 2016). The Federal Reserve Bank of New York (2017) reported that, in the first quarter of 2017, household debt exceeded debt levels from before the Great Recession. While these figures do not control for inflation during the past decade, it remains disturbing that debt levels are near their all-time peak. Moreover, the issue is not just debt; it is the ability to repay that debt. People are already struggling with high debt payments that they can barely afford to pay. Our debtor society is a result of loose lending practices, strict bankruptcy laws and flat real wages. What will happen when the next recession hits?

Several aspects of household debt are especially troubling. Rising college costs and the increase in college debt has become headline news. Student loan debt rose over 101% in real terms from an average of $3,789 in 2007 to $7,623 in 2016. This poses problems because this debt cannot easily be dismissed, as credit card debt can be dismissed in bankruptcy. If not paid, it will come out of Social Security payments during retirement. This debt also reduces the spending by young households as they begin their careers and adult lives, and is a main cause of the "Hotel Mama" phenomenon. Another concern is motor vehicle debt – both because auto prices have not increased substantially over the past several decades and because of auto title loans. Auto title loans use one's motor vehicle as collateral and typically come with higher interest rates than other sources of credit. A few missed payments can result in repossession, preventing people from getting to work and putting their jobs at risk. Last, but not least, credit card debt (an expensive way to borrow) is now at record levels, exceeding $1 trillion.

Updating our past work on the impact of household debt using the latest SCF 2016 data, we find that debt-to-median income ratios *rose* to 0.4 in 2016, compared to 0.349 in 2007, an increase of 14.6%. Also, it should be noted that 5.39% of households filed for bankruptcy over this period, wiping out their debt and thereby reducing debt ratios.

It is clear that US households are in trouble. Real median income, adjusted for household size, has fallen 3.3% from 2007 to 2016. We can add to this decline another 3.1% due to rising interest payments on consumer debt. With the social safety net in tatters, it is no wonder that American households are struggling and are worried about what the future will bring.

This also raises an important question – how long can households accumulate debt, paying more and more of their income as interest on past debt? Or, to use Minsky's (1977; 1982) framework, when does speculative finance become Ponzi finance? Minsky focused on firm debt rather than household debt; his point of transition occurred when income was no longer sufficient to even pay the interest on past debt. Firms, then, had to borrow in order to pay the interest on past debt. For households we have not reached this point and probably never will – primarily because households, unlike firms, need food, clothing, and shelter in order to survive. However, we are approaching a point where households cannot purchase basic necessities and also make necessary interest payments on their past debt. This may not be the Ponzi finance that Minsky described; perhaps we need another name, something like "Lehman finance," where households cannot sustain themselves and also pay interest on their past debt. We do need to worry about what happens when we reach this point. We also need to understand what the practical limits are to household debt levels and whether we are approaching these limits. However, these are issues beyond the scope of this paper.

3.b) Housing

History shows how important housing is when it comes to economic and financial crises. The Nordic countries experienced problems like those of the US (and elsewhere) in the 1980s and 1990s (Moe et al., 2004). Housing was also a problem in the US during the Great Depression. In many ways, the 1920s and early 2000s are similar with respect to housing. During the 1920s, US home prices rose 45%. Prices then fell 49% in the 1930s (Fishback et al., 2010), and 20-25% of mortgages went into default. The Home Owners' Loan Corporation (HOLC) was established in 1933 to deal with the large number of mortgages in default during the Great Depression. It provided loans at 80% of appraised value for homes worth $20,000 or less ($336,000 today), and sought to keep people in their homes by providing assistance in collecting unemployment insurance, seeking paid work, and even finding tenants to help pay the mortgage (Harriss 1951, pp. 67f.). The government printed $2 billion of bonds ($33 billion in today's dollars) to purchase mortgages and then refinanced them at low interest rates – around 1-2 percentage points below market rates at the time. Second liens could be refinanced as well as overdue property taxes, but the total loan could not exceed 100% of assessed value. Anyone who sold their mortgages to the government got paid from the revenues of these bonds.

Nonetheless, there are a number of important differences between the housing problems in the 1920s and the housing problems today. Unlike the 1920s, home prices have increased quickly since the Great Recession. When the housing market peaked in July 2006 the S&P/Case-Schiller US National Home Price Index was 184.62; it bottomed out in February 2012 at 134. As of August 2017 the index stood at a new high of 195.05 (FRED, 2017).

But this does not mean that housing problems have disappeared. Housing is important because the amounts involved are enormous. A $30,000 car loan and $50,000 in education loans pale in comparison with $300,000 in mortgage debt. Greater loan amounts mean that interest and principal payments will take up a larger fraction of total household income and will have a greater impact on consumer spending for other household expenses. It also means more danger for those holding the Old Maid card, or the debt, if things go bad. Housing is also a problem because the other types of debt (college loans, credit cards, motor vehicles, etc.) are rising while at the same time household income is stagnating and even falling when household size is taken into account. This leaves less income to make mortgage payments, thereby increasing the chance of mortgage default.

Too many homeowners remain underwater on their mortgages. As of March 31, 2017, 10.4% of homes had negative equity (Zillow, 2017). As we argued previously (Scott and Pressman, 2017), it is not just underwater mortgages that are an issue. There is also a problem for households with only a small amount of equity in their home. While technically they are not underwater, they are still struggling since they cannot sell their home and move somewhere cheaper because selling costs and moving costs (including a security deposit and one month's rent on a new place to live) exceed their home equity and savings balances.

Various programs, enacted during the Obama administration, sought to help homeowners remain in their homes. The Home Affordable Modification Program (HAMP) put $75 billion on the table to refinance mortgages at lower rates, although all the money was not spent on helping homeowners. Fannie Mae and Freddie Mac were bailed out to the tune of $187 billion, so they could keep purchasing conforming mortgages and prop up the housing market. Still, many homeowners remain underwater with their mortgages and loans that were modified right after the start of the Great Recession are experiencing problems (SIGTARP, 2017). And, unlike the 1930s, HAMP support is temporary, with interest rates on loans already beginning to reset at higher levels. The future of Fannie and Freddie also remains uncertain under a Trump administration and Republican-controlled Congress.

This means that many homeowners, who continued paying their mortgage, face rising mortgage payments. Furthermore, the Federal Reserve has been raising interest rates and will likely continue to do so; those with variable rate mortgages (taken to keep monthly payments down) will see their mortgages reset at higher rates soon.

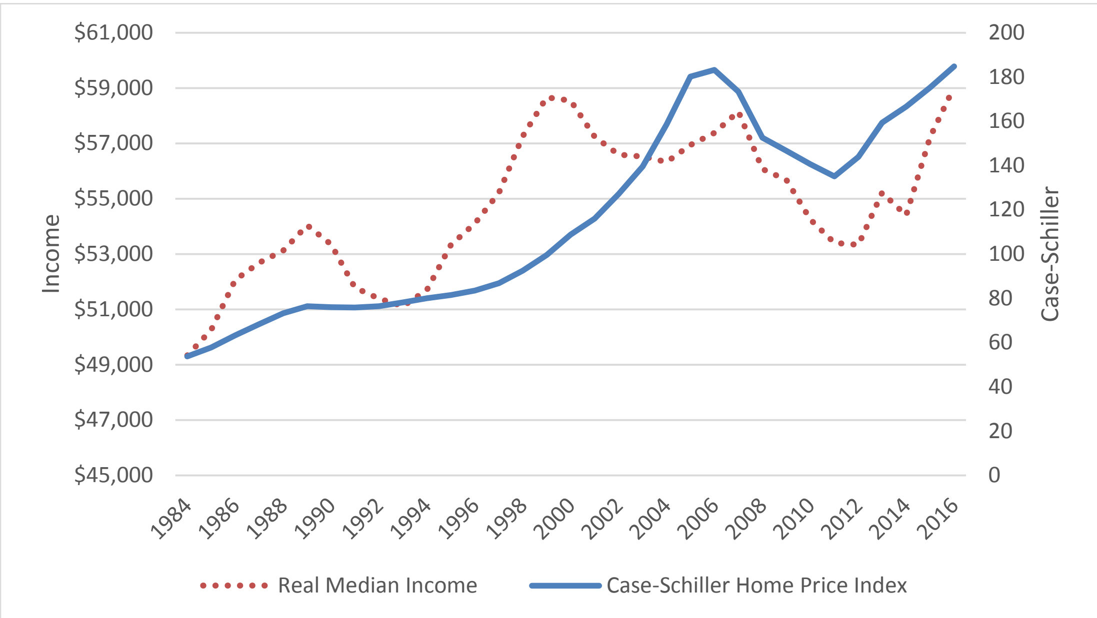
Scott and Pressman (2017) estimated that over 16% of homeowners in 2013 had less than 10% equity in their home. Half of this, or 8%, were homeowners with zero or negative equity in their homes. In the 2016 SCF, 6.3% of households have zero or negative equity and an additional 6.2% have less than 10% equity in their homes. These figures are taken after more than 4 million people lost their homes due to foreclosure and after home prices have appreciated above their previous peak in 2006. A decline in home prices will likely be devastating to these home owners, and they are likely to result in another round of foreclosures.

The problem is not just homeowners underwater or nearly so; there is also the problem of huge mortgage debt. According to the SCF, in the early 1980s home debt was 30% of home values. Homeowners, on average, owned 70% of their home. By 2006 home debt grew to 50% of home values despite the large appreciation of home values over this time period. In the 2016 SCF, home debt is 56.7% of home values. The combination of record foreclosures and record high home prices has not drastically raised Americans' equity share in their homes; rather, it has continued to decline over time.

Home prices are rising much faster than the incomes needed to support them. As a result, more households rely on increasing levels of debt to finance homes. Even before the housing bubble many homeowners faced great financial difficulty as a result of homeownership. One standard rule of thumb is that mortgages should not exceed 2.5 times one's gross income (up from the previous rule of 2 times gross income). A median income household (making $56,515) can then afford a mortgage of $141,540. With 10% down, they can afford a $156,000 home; with 20% down, they can afford a $178,000 home. Even rounding up to $200,000 the problems are clear. According to FRED, in the Q2 of 2017, the median price of a US home was $317,200, more than 50% higher than what a family with a median income could afford. Looking at this same problem using the SCF data, we find that outstanding mortgage debt is over 3.5 times median adjusted incomes, more than one-third greater than the standard rule of thumb. This is why many households with middle-class incomes are regarded as house poor or nearly house poor. Furthermore, house prices have not increased homogenously throughout the US. Homes in low-income and middle-income zip codes experienced less home value gains compared to high-income zip codes (Joint Center for Housing Studies, 2017).

We can look at this problem in yet another way. According to Fannie Mae, monthly housing expenses (on principal, insurance, interest and property taxes) should not exceed 25% to 28% of gross income. A family with a median income of $56,516 could afford to pay $14,129-$15,824 in housing-related expenses. With average mortgage interest rates at nearly 4% in August 2017, putting down 10% on a median-priced home results in monthly mortgage payments of $1,368, or $16,410 for one year. Already the recommended ratio has been exceeded. Adding another $1,200 for PMI and another $1,685 for the median annual property tax in the median state (Georgia), brings the total annual cost of home ownership to over $19,000. Even putting 20% down (which also saves PMI), the median household still cannot afford the median house. Anyway you cut it, a median household is unable to afford a median priced home.

Figure 3 Real median United States incomes and the Case-Shiller US Home Price Index, 1984-2016



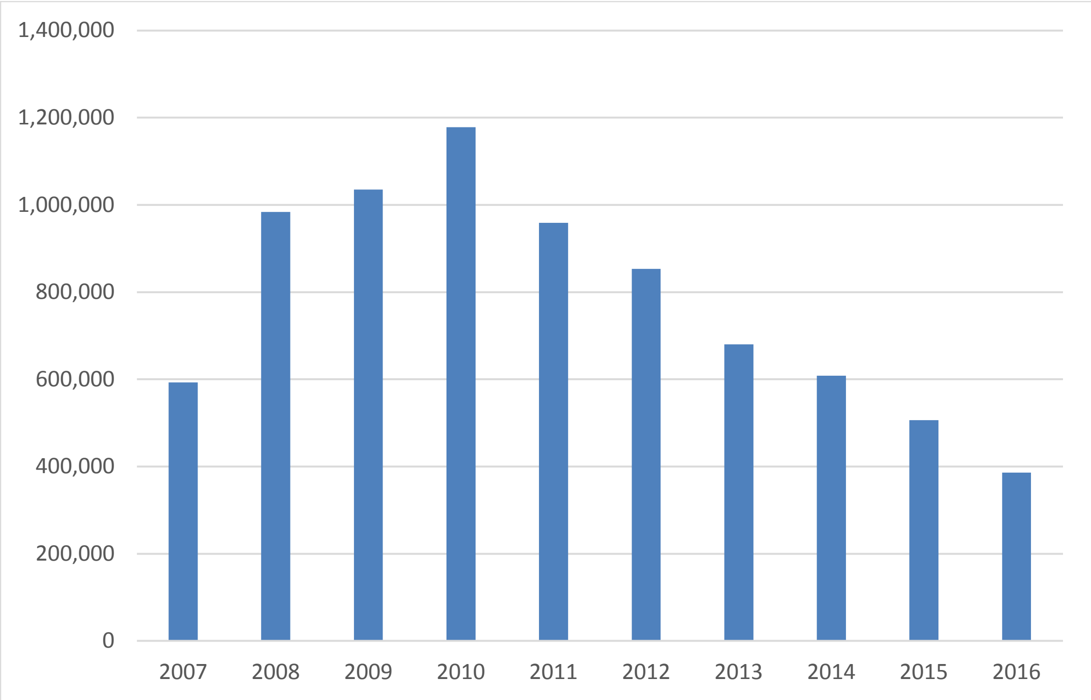
Source: FRED (2017)

The housing situation is even worse when we consider that many households were foreclosed on during the financial crisis. This lops off the bottom of the distribution the same way that multi-generational living cuts off the bottom of the income distribution and pushes up median incomes, making the income declines of a typical household worse than the reported data shows.

Homeownership rates fell by 5.4 percentage points between 2004 and 2016 (from 69.1% in 2004 to 63.7% in 2016) (Bricker et al., 2017). Some of this was due to declining ownership of speculative or vacation properties. Nonetheless, the remaining homeowners should be those in the best financial circumstances; still they remain in precarious shape. Analyzing the SCF data we found that in the past ten years, 3.5% of households had a foreclosure. This percent equates to over 4.4 million American households going into foreclosure. CoreLogic (2017) estimates that from 2007 to 2016 over 7.5 million residential homes were lost due to foreclosure – see Figure 4 below. For comparison sake, according to the SCF between 1971 and 2006, 2.48% of homes were foreclosed; and this is for a 35-year period rather than a ten-year period. The Great Recession resulted in more home foreclosures and a steeper drop in home values than the Great Depression – even taking into consideration the larger population size (Zillow, 2011). According to William Hedberg and John Krainer (2012) only 10% of homeowners that had a foreclosure (or serious delinquency) were able to get a mortgage within the following ten years.

The combined fall in homeownership and the large number of foreclosures had two important effects. First, households experienced a tremendous loss of wealth. Second, the "surviving" homeowners of the Great Recession (a) are more likely in better financial shape because they were able to avoid foreclosure and (b) were able to rebound from the low housing market to experience the tremendous appreciation in housing values that occurred after 2012 (see Figure 3 above). Yet, almost 13% of homeowners still have less than 10% equity in their homes.

Figure 4 Foreclosures of residential homes in the United States, 2007-2016



Source: CoreLogic (2017).

Finally, the large number of foreclosures, in conjunction with rising debt (mortgage debt plus consumer debt), decimated household wealth in the US. As is fairly well-known, the largest asset by far for most middle-class families is the value of their home. Using SCF data we find that, for households between the 40th and 80th percentile, real net worth fell from a median of $339,000 in 2007 to $249,000 in 2016 – a reduction of 26.5%. In contrast, households in the top 10% saw their net worth increase 26.4% over the same period ($1.297 million to $1.64 million) (also see Wolff, 2016).

3.c) Financial Institutions and Finance

The precarious state of many US financial institutions is one reason that the Great Recession was so great. In the 2000s these institutions had too little capital (Mian and Sufi, 2014) and too many non-performing assets on their balance sheet. Had they been forced to report their loans at market value in 2008 or 2009, many large banks would have been bankrupt. Since then bank assets have improved (due to increasing home prices, incomes and mortgage refinancing). Bank capital also increased as a result of this, as well as capital coming from the Federal Reserve in conjunction with dividend-payment restrictions for institutions taking central bank capital.

Recent Federal Reserve stress tests of banks provide some additional good news. Simulating the impact of a recession on bank balance sheets, the Board of Governors of the Federal Reserve (2017a) found that the 34 largest banks in the US could all survive a recession; they would not go under as Lehman Brothers did in 2008. Nonetheless, we need to approach these tests with some degree of skepticism. One issue is how much are these results like extra security at airports, designed to assure the public that flying is safe rather than thwarting terrorists. Similarly, stress tests can be seen as a way to reassure the public that it is safe to bank while not really making the banking system any safer. The Financial Stability Board (2013) notes progress made to increase bank customer protections and oversight through the Dodd-Frank Act – especially regarding the swaps market.[3] Yet, they also found financial regulations convoluted in their overall supervision and mitigation of systemic risks.

Thun (2012) has criticized stress tests as being far too conservative when estimating the possible risks facing banks, for underestimating bank linkages, and for ignoring correlations between the prices of different assets. Let us take these points up in turn. Banks may be able to survive a normal recession, such as what the US experienced between the end of World War II and the early 2000s, but not a great slump. And systemic risk is not accounted for in these stress tests, as was true before the Great Recession. Another concern is that stress tests focus on common and known risks, giving banks an incentive to hide their risky endeavors in ways that the stress tests will not detect. Even if these tests were sufficiently tough, and even with bank capital up to 10 percent, a small rise in bankruptcies could push capital below the point where banks can make more loans due to capital requirement constraints. So it is not clear that the problems facing financial institutions have been solved.

Perhaps our greatest concern at present is that Congress is pressuring the Federal Reserve to reduce regulations on financial institutions. At the same time, the Trump administration is opposed to regulations and is not disposed to enforce existing regulations—in the hope that banks will lend more and make riskier loans that can be hidden from regulators who are pre-

[3] Similar things are true in the UK, where the Financial Stability Board claimed that the financial system had become more stable. They are likely true as well in other countries.

disposed to look the other way. Even worse, the Trump administration and Congress continue to talk about repealing the meager regulations that exist as a result of Dodd-Frank (Puzzanghera, 2017).

While mortgage-backed securities, and their offshoots, such as CDOs and the ARSs mentioned at the beginning of this paper, have been identified as a main cause of the 2008-9 financial crisis (Jarrow, 2011; Stiglitz, 2009), today we have their close cousins to deal with – collateral loan obligations (CLOs). CLOs are bundles of risky loans that have been packaged together in order to get a high credit rating from Moody's and Standard & Poor's (based on their rating algorithms). These packages typically include student debt and auto title loans—two things discussed earlier in this paper. Many individuals and institutions buying CLOs believe that the default risk is near zero, just as buyers of mortgage-backed securities and CDOs believed that defaults on home loans were not possible following the 1993 Supreme Court decision that prohibited homeowners from reducing their mortgage debt in bankruptcy (Taub, 2014). Dodd-Frank was supposed to stop this process of securitization and sale, but the SEC has allowed it to continue. This puts on the balance sheets of financial institutions, as well as households, assets that are AAA rated and that many believe are default proof. Their owners seek high yields in an era of low interest rates, and believe that there is little risk in holding these assets because there cannot be a large asset price decline or market crash, and because people need their cars and cannot default on auto-title loans or student debt.

One final problem looming on the horizon concerns tax reform. As of this writing there is talk of both reducing the mortgage deduction (possibly indirectly, through a large increase in the standard deduction), as well as reducing or eliminating the deduction for property taxes. These actions will hurt many middle-income families owning homes. Some families are able to pay their mortgage only because their property taxes and mortgage interest are tax deductible; they may no longer be able to continue paying their mortgage if tax benefits from homeownership are reduced but are not cut for middle-income households (as is currently being proposed). Eliminating these deductions will also put downward pressure on home prices, worsening the problem of underwater and near-underwater mortgages, as well as the wealth of middle-income households.

4. Conclusion – preventing another Great Recession

Minsky (1982; 1984) argued that financial crises would be somewhat infrequent because memories remain vivid in the post-crisis period and lenders turn conservative. On this point Minsky was wrong. First, as we saw above, the US economic history has been a history of frequent economic crises – on average, one every 8-9 years. This indicates that memories are relatively short rather than long. Minsky also underestimated the role of greed as part of human nature and the desire to be a little better than everyone else. In contrast, Veblen [1899] understood this point well, as do Frank and Cook (1995). In his recent book, *The Broken Ladder*, Keith Payne (2017) shows this to be part of our evolutionary nature and our psychological makeup. He cites many studies demonstrating that humans, and our evolutionary ancestors in the animal world, care about relative position. One of the most noteworthy involves monkeys who were given either grapes (which they love) or cucumbers (which they merely like) for returning a stone. Monkeys that were happy getting cucumbers got angry when other monkeys received a grape for performing the exact same task. They frequently threw their cucumber at the experimenter; and they stopped returning stones.

The importance of relative incomes, as modeled by James Duesenberry (1949), leads people to consume based *not* on their own incomes, but relative to those within the culture where they live and want to be associated. In addition, Thorstein Veblen's (1899) pecuniary emulation takes Duesenberry's insights a step further, showing that people want to consume one social strata above what their current income allows. Eventually, these cultural and psychological tendencies can create problems for people in the form of excessive debt, and for financial institutions that make loans to households that are overwhelmed by debt and unable to repay their debt obligations, especially in an era of stagnant or declining real incomes.

There are many reasons to be concerned about the US recovery from the Great Recession. This paper argues that the US economy has not escaped from the problems that created the Great Recession. Real median household income, adjusted for household size, has fallen 3.3% over the past decade. Larger interest payments on past debt has reduced the living standard of the median household another 3.1%. From business-cycle peak to now (presumably close to another peak), the standard of living for the median US household (adjusted for household size and consumer debt interest) is 6.4% below the level of 2007. Further, household debt levels remain high, especially relative to current household income levels; and housing remains a problem. Many homeowners are underwater or nearly underwater on their mortgages; and large financial institutions still face inadequate regulation.

The good news is that we can mitigate these problems and reduce the chances of another Great Recession.

We could raise taxes on the very rich. Thomas Piketty (2014; Piketty et al., 2014) cites low top marginal tax rates as one reason CEO pay has soared. It also explains why CEOs have sought to cut labor costs dramatically and why wages have not kept up with either productivity growth or economic growth. Tax hikes on the richest Americans will counter this, and will help to prop up wages. The additional government revenues could finance more generous programs to help households during hard economic times, making them less dependent on high-interest loans in times of personal financial crisis. Liberalizing bankruptcy laws would help, making it easier for households to escape from suffocating debt.

Greater restrictions can be placed on financial institutions, which are much larger today than ten years ago. In addition, regulations will require real teeth and substantial penalties for those who break the rules. Returning to Glass-Steagall should also be a top priority. Individual consumers cannot be expected to battle a few large financial institutions on their own. The Dodd-Frank financial reform bill established the Consumer Financial Protection Bureau (CFPB) to curb egregious practices by financial institutions.[4] This is not enough.

Third, housing costs need to be brought under control so that debt ratios can become more manageable if incomes rise. The tax deductibility of mortgage interest and property taxes adds to price pressures. It also benefits wealthier households in higher tax brackets who can afford more housing because of the tax benefits given to them. This tends to have a cascading effect, pushing up the price of other homes, even though their owners will get few tax breaks. One simple reform would be to convert the tax deduction for mortgage interest and property taxes into a refundable tax credit so that everyone benefits to the same extent from this tax provision. Another way to control housing prices would be to provide incentives

[4] Even this minor and weak reform was fought by banks, and Republicans refused to approve anyone nominated to head the agency for a long time.

to increase the housing stock, especially in those areas where prices have risen rapidly during the past few decades. One solution might be to provide incentives to convert abandoned shopping malls into housing units, similar to what has been done in some places with abandoned factories. Of course, given the large percentage of underwater and near-underwater mortgages, these changes must be made very slowly.

Our big fear is that it is unlikely that such policy changes will be made in time to avoid another great crisis. However, if they are not made, the next recession seems destined to result in massive bankruptcies and layoffs. Homeowners will again lose their homes. Households holding CLOs will find their assets are no longer liquid. In sum, it will appear that we really never escaped the Great Recession; rather, we papered over our problems so that they lay dormant, waiting to create havoc for the US economy.

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