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# Unburdening America's Middle Class

Shrinking Families' Debt Burden Faster Is Imperative for Strong, Sustained Economic Growth

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Center for American Progress



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# Introduction and summary

Excessive leverage—too much household debt—remains the scourge of our economy. It holds back consumer spending and results far too often in massive economic distress for millions of American families facing record-high foreclosures. Too much household debt also leaves banks reluctant to extend new loans for home purchases and business expansions because these lenders already have billions of dollars in bad loans on their books and don't want to throw good money after bad.

This all slows business investment. Businesses want to meet the existing demand of consumers and other businesses primarily with their existing capacity. Businesses have no incentive to quickly build up new capacity unless households can dig out from under the mountain of debt more quickly than has been the case so far.

Helping American workers and their families deleverage can occur through three channels. One is to leave the decline of debt to market forces through massive home mortgage foreclosures and tight lending standards that prevent the expansion of much new credit. Another, less-painful possibility for households is the refinancing of existing debt into lower-interest-rate debt, thus making it easier to repay their total outstanding debt. And the final way to deleverage household debt is an increase in after-tax incomes. Incomes can grow due to more jobs, higher wages, lower taxes, and better unemployment insurance benefits, among others.

A closer look at the data on household indebtedness in the United States illustrates the importance of deleveraging swiftly for a strong economic recovery as well as the value of a multipronged approach in reducing deleveraging through faster declines in outstanding debt, more refinancing into lower-cost debt, and quicker increases in personal incomes. Consider that:

- Economic growth stays too low. Gross domestic product, or GDP, grew at an annual rate of 2.5 percent in the third quarter of 2011. The economy has expanded now by 5.6 percent in inflation-adjusted terms, the slowest growth during the first nine quarters of an economic recovery since World War II. Business investment

expanded at a strong 16.3 percent in the third quarter of 2011, while export growth remained subpar with 4.0 percent, consumption regained some strength, expanding at 2.4 percent, but only because personal saving fell precipitously. And, government spending was flat. Economic growth is still too low to create sufficient jobs to substantially reduce the unemployment rate. Low personal income growth is holding back consumer demand and fiscal troubles of governments in the United States and abroad impede U.S. economic growth.

- The debt is highest among the middle class. Middle-income families before the crisis had a debt-to-income ratio of 155.4 percent in 2007, the last year for which data are available, for families with incomes between \$62,000 and \$100,000, which constituted the fourth quintile of income in our nation in 2007. This ratio is higher than for any other income group. Families in the top 20 percent of income (with incomes above \$100,000) had a ratio of debt to income of 123.6 percent, and families in the third quintile (with incomes between \$39,100 and \$62,000) owed 130.7 percent of their income. Households in the bottom 40 percent of the income distribution (with incomes below \$39,100 in 2007) owed well below 100 percent of their income.
- This high debt holds back consumption in the current recovery. Households used their homes as ATMs before the crisis, financing record shares of consumer spending with debt. But this trend reversed with the onset of the housing and financial crises, when households could no longer use their homes as ATMs. What's more, inflation-adjusted consumption expanded by only 4.3 percent from the start of the recovery in June 2009 to June 2011, marking its slowest growth of any recovery of this length since World War II.

All of these highly indebted households offer little incentive for businesses to invest more quickly. Highly indebted households also have high debt payments and thus less money to spend on other consumption items. And businesses may conclude that there is a likely slowdown for future consumption because consumers will remain heavily indebted into the foreseeable future. Businesses will conclude that there will be slow consumption growth in the future and thus invest less. The high debt levels of the past may thus help explain in part that business investment is well below its long-term historic trend.

So what can policymakers do to correct this problem? Well, in some cases Americans with heavy debt loads simply have too much debt for policy to intervene effectively. Policy reforms cannot help everybody, but for most Americans

in the middle class, the wherewithal to pay off their debt is within reach if given a fighting chance. Helping that process along more swiftly should be a top priority for policymakers. Here's why:

- It could take many more years for debt to reach sustainable levels if the decline in household debt is left to market forces alone. Debt levels could reach the levels of the 1990s, which went along with a fast growing economy and strong financial markets, only by the end of 2017 if after-tax income continues to grow at the rate of last year and debt stays flat. (see Table 1 on next page) This “do-nothing” scenario means prolonged foreclosures and tightening lending standards. It could alternatively take until September 2036 to reach the debt-to-after-tax-income ratio of the 1990s if income growth stays moderate and debt starts growing at the modest rate of 3 percent per year.
- Refinancing into lower-cost debt, especially mortgages, could accelerate deleveraging and boost consumption. Households, which today are able to take advantage of historically low mortgage rates if they are eligible for refinancing, could reduce their mortgage payments by substantial amounts and thus reach sustainable debt levels more quickly if they received targeted help in refinancing. They could then use the savings to pay back their debt more quickly. Refinancing alone would bring households to the debt levels of the 1990s about 18 months earlier than doing nothing would, assuming that refinancing lowers the debt service burden of consumers by 1 percent of their after-tax income and if the savings are used to repay the outstanding debt. (see Table 1 on next page)
- Boosts to after-tax incomes would allow household debt to fall to sustainable levels years earlier than it otherwise would. Raising after-tax income growth from the 4 percent levels of the past year to 7 percent could help households reach the debt levels of the 1990s about two-and-a-half years earlier than doing nothing. (see Table 1) The benefits from faster income growth are larger than from refinancing since interest rates cannot fall much further from where they are now. The combination of refinancing and faster income growth would allow households to reach the debt levels of the 1990s more than three years sooner than they would by doing nothing.

TABLE 1

## Unburdening our middle class

### Pathways to sustainable debt-to-after-tax-income ratios

Category	Share of saving explained by change in category, previous labor market contractions	Share of saving explained by change in category, Great Recession	Relative difference	Share of saving explained by change in category, two years after labor market contraction ended	Expected change after Great Recession
Motor vehicles and parts	-102.8	-27.3	-73.4%	-60.00%	-15.9%
Furnishings and durable household equipment	-44.3	-12.4	-72.0%	-4.70%	-1.3%
Recreational goods and vehicles	-16.6	-8.6	-48.2%	-13.50%	-7.0%
Other durable goods	-8.1	-2.2	-72.8%	-2.10%	-0.6%
Food and beverages purchased for off-premises consumption	-62.7	0.6	-101.0%	68.80%	-0.7%
Clothing and footwear	-50.9	-9.4	-81.5%	17.40%	3.2%
Gasoline and other energy goods	-8.8	-12.1	37.5%	-3.20%	-4.4%
Other nondurable goods	-10.9	1.5	-113.8%	-2.20%	0.3%
Services	196	-16.0	-108.2%	-90.20%	7.4%
Personal interest payments	-3.7	-18.2	391.9%	-8.30%	-40.8%
Personal current transfer payments	13.9	4.1	-70.5%	-1.60%	-0.5%
Housing and utilities	46.60%	2.50%	-94.6%	-15.40%	-0.8%
Health care	125.00%	22.20%	-82.2%	-32.00%	-5.7%
Transportation	-16.50%	-9.70%	-41.2%	-10.70%	-6.3%
Recreation services	9.50%	-5.40%	-156.8%	-9.30%	5.3%
Food services and accommodation	-15.70%	-6.30%	-59.9%	-7.10%	-2.8%
Financial	28.60%	-13.90%	-148.6%	-15.00%	7.3%

Notes: The scenarios assume a starting debt-to-after-tax-income level of 114.3 percent in June 2011. The average debt-to-after-tax-income ratio for the period from December 1994 to March 2001 was 89.1 percent, which is one possible threshold for sustainable debt levels, as discussed in the text. The scenarios further assume an after-tax income growth of 4 percent and debt growth of 0 percent for the baseline "do-nothing" proposal. Fast income growth is assumed to equal 7 percent.

Refinancing assumes a reduction of the debt service burden—measured as debt service to after-tax income—by 1 percent of after-tax income, and it assumes that the savings will be used to repay the outstanding principal. See text for further discussion of the effect of refinancing and after-tax-income growth on deleveraging.

Source: Author's calculations based on Release Z.1 Flow of Funds Accounts of the United States. Washington, DC: BOG.

The continued high debt levels that households carry on their shoulders pose a major drag on household spending and on the economy. Policymakers thus face a choice to leave the adjustment of high debt levels relative to after-tax incomes to market forces alone, with all of the economic pain that it entails. Or policymakers could do something about it by:

- Helping more borrowers refinance at historically low interest
- Boosting after-tax incomes through faster job creation by investing in infrastructure
- Enacting temporary payroll tax breaks
- Extending unemployment insurance benefits

In the pages that follow, then, this paper will examine in more detail the consequences of high indebtedness to American families and the broader economy before exploring the benefits of encouraging the more swift resolution of high indebtedness in our society. We then discuss some basic policy guidelines that policymakers should consider to make this happen in the coming years.



# Defining household leverage

Household leverage is the amount of money that a household owes relative to its ability to repay that money. That simple concept translates into several different measures, all of which allow for slightly different insights.

First, there is the ratio of debt to total after-tax income. This ratio shows the indebtedness of a household relative to its ability to pay back a loan now and in the future. This ratio, though, ignores the fact that interest rates can change over time, which may make it harder to repay the existing amount of debt if interest rates rise or easier if interest rates fall.

There is thus a second, related measure that captures the repayment burden—principal and interest—of all outstanding debt to after-tax income. This measure shows how much the average household currently pays for its outstanding debt. This measure, though, provides little direct sense of how much debt a household owns. Specifically, this measure does not give a sense of economic vulnerabilities if interest rates rise again since higher debt levels can translate more quickly into higher debt repayments if interest rates go up than would be the case for lower debt levels.

A third household leverage measure is the ratio of total debt to assets. It shows how much money a bank could recover if assets that a household owned were sold to repay the loans. This measure, however, assumes that assets can actually be sold when the household needs to repay the loan. The recent experience in the housing market shows that this is not always the case. Banks may not be able to recover their outstanding loans even if the household has an asset as collateral for a loan.

The discussion below uses all three measures of household leverage but the preferred indicators are the first two, which capture the burden that debt places on households relative to their ability to pay back that debt. Most of the discussion will in fact concentrate on the ratio of debt to after-tax income, and will use the other measures to illustrate key points only where appropriate.

## Leverage is still high after years of declining loans

The recent economic and financial crises got underway in 2007, although the Great Recession did not officially start until the end of 2007. The crisis started when families who had borrowed ever-larger mortgages during the housing boom years to make up for weak income growth and rapidly rising prices could no longer repay their debt. Banks subsequently foreclosed on the homes of millions of families while bad loans continued to pile up in a rapidly weakening economy. The financial crisis and economic recession fed on each other, leading to further foreclosures, less new debt from banks, and the worst recession since the Great Depression.

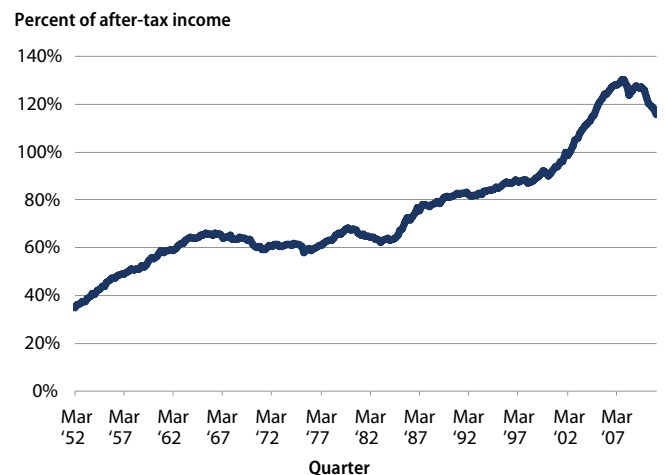
The implications for the current tepid economic recovery are huge. High household indebtedness is one factor that holds back consumption growth in the recovery and thus impedes faster economic growth and more hiring. Consumption and economic growth are intricately linked since consumption makes up more than 70 percent of gross domestic product—the broadest measure of economic growth—and since 87.6 percent of economic growth during the economic recovery that started in June 2009 came from consumption.<sup>1</sup> But consumption growth amounted to only a total of 4.3 percent for the first eight quarters of this recovery, which is the slowest growth rate for any recovery of this length since World War II.<sup>2</sup>

Slow consumption growth hence contributes to slow economic growth in this recovery. High and falling indebtedness likely explains part of this slow growth pattern just like rising indebtedness during the boom years before the crisis contributed to faster consumption growth than otherwise would have been the case, as discussed below.

The data on total household indebtedness illustrate the boom-and-bust cycle of the past years. (see Figure 1) Household leverage is typically defined as the amount of debt relative to after-tax income, meaning the ratio of what is owed to households' ability to repay what is owed. Households owed a record-high 130.2 percent of their after-tax income in September 2007.<sup>3</sup>

**FIGURE 1**  
**Tracking high indebtedness**

Household debt to after-tax income, 1952-2011



Notes: Total debt refers to credit market liabilities. Sources: Calculations are based on "Federal Reserve Statistical Release Z.1 - Flow of Funds Accounts of the United States," available at <http://www.federalreserve.gov/releases/z1/>.

The data also show an unprecedented acceleration in household debt just before the financial and economic crises. Household debt started to gradually increase beginning in the mid-1980s as inflation and interest rates started to fall from very high levels that made it easier for borrowers to afford more debt. But household indebtedness first began to accelerate with the recession that started in March 2001. Households needed more debt to maintain their consumption as first the recession in 2001 destroyed jobs and then a very weak labor market expansion through 2007 went along with the slowest job growth of any business cycle since the Great Depression.<sup>4</sup>

The ratio of debt to after-tax income increased each quarter at a rate of 1.4 percentage points from March 2001 to December 2007. Household indebtedness rose by less than one-fifth this rate—0.28 percentage points on average each quarter—during the business cycle of the 1990s, from September 1990 to March 2001.

The financial and economic crises of 2007 to 2009 reversed a decades-long trend of ever-more household indebtedness. The ratio of debt to after-tax income stood at 114.3 percent in June 2011, well below its peak level of 130.2 percent in September 2007. This reflects an unprecedented drop in the ratio of debt to after-tax income, largely because banks held tight on giving out a lot of new loans so that households paid off old debt but couldn't get new debt.

In addition, many outstanding loans, especially mortgages but also credit cards and other forms of household debt, went bad during the crisis.<sup>5</sup> Banks wrote them off their books, thus lowering the amount of outstanding debt further. Total inflation-adjusted household debt hence fell by \$1.4 trillion (in 2011 dollars) or 9.4 percent from September 2007 to June 2011.<sup>6</sup>

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### Leverage highest among middle-income households before the crisis

The debt boom preceding these crises was intimately tied to a housing boom. That is, households who owned their own home or who bought a new home could go deeper into debt than renters. This implies that the debt boom was concentrated among middle-income families. Lower-income families were less likely than middle-income families to own their own home and thus had less access to home equity against which they could borrow. And higher-income families often had more financial resources (savings and income) than middle-income families, which kept them from going deeper into debt to maintain their spending.

Different takes on the same data show that leverage was highest among middle-income families, just before the crises. This author finds—based on household data from the Federal Reserve’s Survey of Consumer Finances—that the ratio of debt to income for families in the fourth quintile of income (between \$55,331 and \$88,030) was 137 percent in 2004, higher than for any other income group. (see Figure 2) Families in the top quintile earning more than \$88,030 had a ratio of debt to income of 116 percent, and families in the third quintile (between \$34,738 and \$55,331) owed 108 percent of their income. Households in the bottom 40 percent of the income distribution (earning less than \$34,738) owed well below 100 percent of their income.

Similarly, Brian Bucks and his colleagues at the Federal Reserve concluded that the share of debt to assets was highest among households in the fourth quintile in 2007, with a ratio of 25.3 percent of debt to assets, compared to 24.3 percent for households in the third quintile, and 23.4 for households between the 80th and 90th percentile. Households in the top 10 percent and in the bottom 40 percent of the income distribution owed substantially less than 20 percent of their assets in 2007.<sup>7</sup>

Figure 2 shows that debt was also highest among middle-income families before the crisis in 2007, the last year for which data exist. The median debt-to-income ratio for households in the third and fourth quintile, earning between \$39,100 and \$100,000 in 2007, was higher with 130.7 percent and 155.4 percent than for any other income group.<sup>8</sup> The data also show that very high-income families—those in the top 5 percent of the income distribution, earning more than \$177,000 in 2007—had less than 100 percent of their income in debt.

The increases in debt, relative to income or relative to assets, were largest among middle-income households after 2001, when that eight-month-long recession ended. The ratio of debt to income rose by more than 30 percent, for instance, for households in the third and fourth quintile of the income distribution from 2001 to 2004. This ratio grew by less than 30 percent for all other households, lower income and higher income.<sup>9</sup>

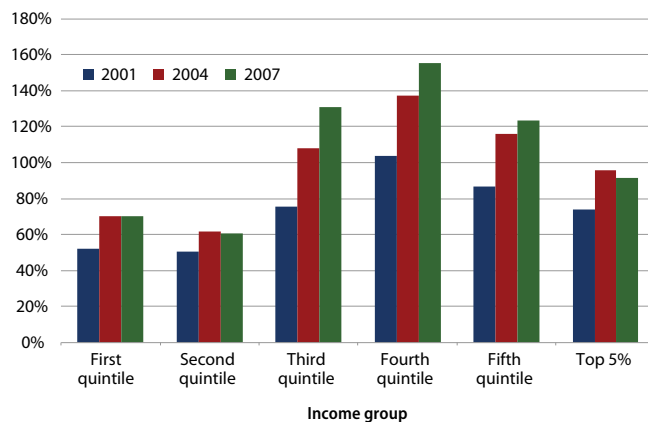
In addition, the ratio of debt to assets—an alternative measure of leverage—increased fastest for households in the fourth quintile, with a jump of more than 40 percent, from 2001 to 2007. Households with income in the second and third quintile and above the 80th percentile but below the 90th percentile experienced increases of more than 25 percent in their ratio of debt to assets from 2001 to 2007. Lower-income and higher-income households experienced much smaller

increases in leverage than middle-income households did—independent of how leverage is measured—during the boom years of the 2000s, when household debt expanded fastest.

Figure 2 also illustrates that debt growth was fastest among middle-income families from 2001 to 2007. The debt growth was most pronounced among families in the third and fourth quintile of the income distribution, for households with incomes between \$39,100 and \$100,000 in 2007.<sup>10</sup> Households in the bottom 40 percent of the income distribution, earning less than \$39,100 in 2007, saw relatively stable debt-to-income ratios during the debt boom years, as did households in the top 5 percent of the income distribution, earning more than \$177,000 in 2007.

**FIGURE 2**  
**The middle class is most highly indebted**

Debt to income, by income groups, 2001 to 2007



Notes: All figures are in percent. All figures are median debt-to-income ratios. Data apply only to households who owe any debt. Sources: Income classifications are from: "Historical Income Tables," available at <http://www.census.gov/hhes/www/income/data/historical/household/index.html>. Author's calculations based on: "Survey of Consumer Finances," available at <http://www.federalreserve.gov/econresdata/scf/scfindex.htm>.

# Excessive debt laid the foundation for prolonged slump

The economy of the last business cycle, from March 2001 to December 2007, depended heavily on banks pushing ever-more debt on consumers. In each quarter during that period, households' purchasing power—measured as after-tax income—increased by an annual rate of 3.1 percent because of more debt on top of actual income growth. But that also meant that the debt burden increased at an unprecedented rate during the last business cycle, laying the foundation for a lot of economic pain to follow.

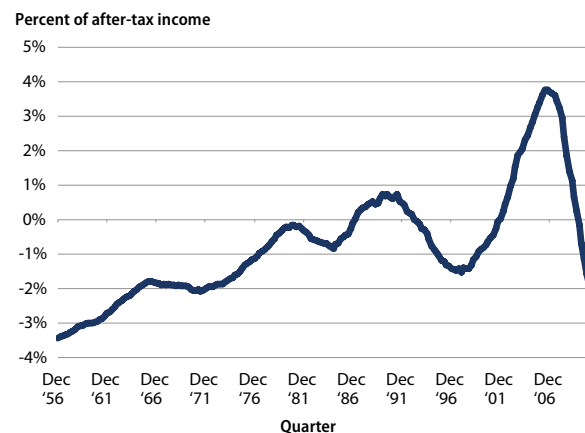
Households' buying power rose especially because households took out more mortgages, either bigger mortgages or second mortgages or home equity loans. Households needed the additional money to pay for ever-more expensive homes but they also financed other consumption items, such as new cars and college tuition, with the additional debt.<sup>11</sup> Figure 3 shows the difference between new mortgages minus money spent on homes, relative to after-tax income.<sup>12</sup> A positive number shows when households used cashed-out equity from their homes to finance consumption outside of their homes.

The data are consistently positive and show substantial increases in households' buying power before the crises, as families went deeper into debt. The quickly building-up household debt levels, hopping to ever-new record highs, was the fuel that fanned the flame of the unsustainable economic expansion before the Great Recession.

More household debt also fueled consumer spending before the crises. The increasing use of home equity withdrawals from more and more mortgages also shows up in rapidly rising debt-financed consumer spending on new homes and on other items. Consumers can use new debt to pay for new houses, other consumption, and to invest in stocks and other financial assets.

**FIGURE 3**  
**Borrowing to overcome flat incomes**

Difference between new mortgages and the ratio of real expenditures (after accounting for inflation) to after-tax



Notes: All figures are five-year average ratios to reduce volatility in the data.

Sources: Calculations are based on: "Federal Reserve Statistical Release Z.1 - Flow of Funds Accounts of the United States".

It is crucial to understand that the rise in consumer indebtedness was the result of flat or declining incomes coupled with sharply higher prices for large necessities, such as health care, cars to go to and from work, gasoline, housing and utilities, and food. The evidence also indicates that families were becoming less tolerant of “conspicuous consumption”—their willingness to borrow money to pay for a vacation, to buy jewelry, and to pay for a fur coat, among other such items, did not increase after 2001.<sup>13</sup> Families’ rising indebtedness was thus one way of loosening a growing middle-class squeeze, even if only temporarily.

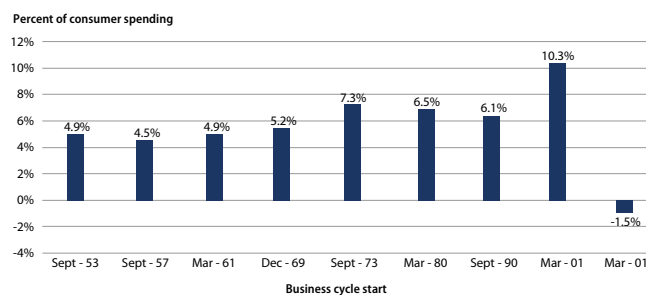
Figure 4 calculates the ratio of the sum of all new debt during a business cycle to the sum of all consumption plus the sum of all residential real estate spending plus the sum of all new investments in financial assets during this period.<sup>14</sup> The average debt-financed consumer spending exceeded 10 percent during the business cycle from March 2001 to December 2007, a historical high and substantially above the levels of debt-financed consumer spending during any other business cycle.

This is especially impressive since consumption out of after-tax income and spending on new homes were at record highs.<sup>15</sup> The share of debt-financed consumer spending reached a record high when consumers were also spending more of their income than they typically had. The data clearly show that the economic expansion of the 2000s heavily relied on consumers’ dependence on more and more debt.

The financial and economic crises in 2007 and the years thereafter saw debt falling, placing a drag on consumer spending. Households, for instance, started to again put more money into their homes each quarter than they took out new mortgages. (see Figure 3 on page 11). Rather than withdrawing equity from their homes, households put more money into their homes than they borrowed in new mortgages.<sup>16</sup> And the debt-financed share of consumer spending turned negative for the first time since the 1950s, suggesting that debt no longer fueled consumer spending but rather put a drag on it (see Figure 4), assuming that some of the decline in debt was caused by debt repayments and not all by loan defaults.

**FIGURE 4**  
**Borrowing to spend**

Sharing income of consumer spending on consumption and real estate financed put of new debt, business cycle averages



Notes: Figures are in percent. The figures represent the average ratio of the sum of new household debt to the sum of consumption plus the sum of residential real estate spending plus the sum of all net asset acquisitions during a business cycle. Sources: Author’s calculations are based on: Bureau of Economic Analysis, National Income and Product Accounts (Department of Commerce, 2011).

The lack of easy access to mortgages and other forms of consumer credit thus was one factor that contributed to slow consumption growth during the economic recovery that started in June 2009. Lenders became increasingly careful in extending credit because bad loans were piling up on their books as they increased foreclosures to unprecedented rates. And home values fell more rapidly than homeowners could build up new equity, which meant that many homeowners remained underwater on their mortgages, owing more than their homes were worth. This, of course, made lenders even more reluctant to extend new credit.

The result: Tight-fisted banks and a massive recession drove unemployment higher, which further slowed income growth and kept household indebtedness and the associated financial problems high. The real economic effect was slow consumption growth throughout the economic recovery that started in June 2009. High unemployment and fallen stock and house values are the other factors. Inflation-adjusted consumption expanded by 4.3 percent in the first two years after the recovery started, from June 2009 to June 2011. This was the slowest consumption growth of any recovery of this length since World War II.<sup>17</sup>

High household indebtedness also contributed to slow business investment. Business investment has been below 10 percent of GDP throughout the economic recovery, well below its long-term historical average of 11.2 percent of GDP. Businesses may not see a strong reason to expand their capacity by investing more if households already pay a lot for their existing debt.

There are two reasons for this. One may be that high indebtedness today may mean that households are spending less on consumption and so businesses may expect that consumption will not increase much in the future because current consumption growth is low.<sup>18</sup> Alternatively, high indebtedness in the present may help finance consumption in the present, as was the case during the years before the crisis in 2007. But this kind of renewed debt accumulation is ultimately unsustainable.

Businesses know that households are more and more overburdened with debt and thus will eventually have to slow consumption. Businesses know that a party financed by debt will be followed by an eventual debt hangover. Either way, companies may expect that consumers will consume less in the future and thus slow investment in subsequent years. The upshot: High debt burdens today should be followed by low investment by businesses at least in the near term.

The data show that low business investment follows high household indebtedness. The Federal Reserve calculates a ratio called the debt service ratio, which is the



share of after-tax income that the average household pays for principal repayment and interest payments on their outstanding debt. High debt service burdens have led the way for lower business investment in the past few decades as Figure 5 shows. Indeed, there is an eerie regularity in the data since 1989 that suggests that high debt burdens are followed by less business investment in the near future.<sup>19</sup>

Figure 5 shows the average debt burden to after-tax income over five years, moved forward by five years, and the average ratio of business investment to GDP for the preceding five years. That is, at each quarter along the x-axis, the figure shows the average level of investment and the average debt burden five years earlier. The interpretation is that investment today follows household debt burdens with about a five-year lag. The two series move in opposite directions in figure 3 on page 11, which indicates that high debt burdens are followed by low investment five years later, and that low debt burdens are followed by higher investment levels.

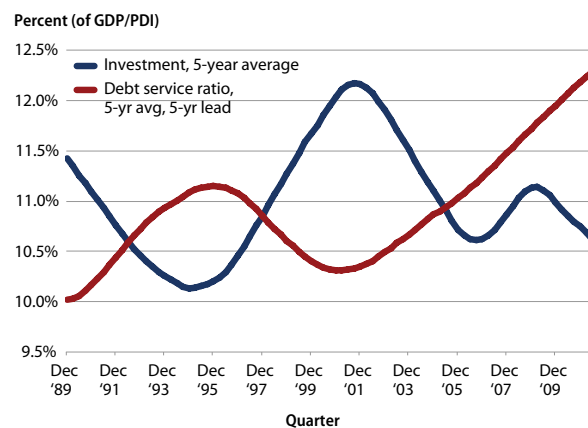
The run-up in consumer debt levels during the boom years may thus explain, at least in part, the low business investment performance of the current economic recovery. The debt overhang from the debt-boom years thus plays a critical role in slowing consumption and possibly investment growth and consequently economic growth and new hiring in the economic recovery after June 2009.

Furthering faster household deleveraging—getting rid of debt relative to after-tax income—thus becomes a policy imperative even though it is not the only cause of the slow recovery. High unemployment and lower stock portfolio and housing values are also holding consumption growth back. High unemployment means that people do not have enough income to spend and low stock and house values means that people focus more on saving and less on spending.

But reducing household leverage will have positive feedback effects to lower unemployment and higher stock and house prices. Hiring will likely not acceler-

**FIGURE 5**  
**High household debt, low business investment**

Debt service ratio and investment, 1989 to 2010



Notes: Investment is current investment. The debt service burden is the debt service burden recorded five years earlier. The figure thus shows how debt service burdens lead the way for business investment. The five-year average for the debt service burden is the average ratio, not the average of the debt service burden ratios. Sources: Author's calculations based on: "Household Debt Service and Financial Obligations Ratios," available at <http://www.federalreserve.gov/releases/housedebt/>; Bureau of Economic Analysis, *National Income and Product Accounts*.

ate unless consumers start to spend more and that will not happen without lower, sustained debt burdens. That is, lowering households' leverage will have a positive feedback to lower unemployment and higher employment.

What's more, less household leverage will also mean less household economic distress—fewer credit card defaults, fewer foreclosures, and fewer bankruptcies—which in turn should give banks an incentive to lend more again. Easier access to mortgages, for instance, should translate into more demand for homes and consequently more stable home prices. Less leverage could thus have a stabilizing feedback effect on household wealth, on saving and consumption, and thus on economic growth and hiring. Less leverage could create a beneficial cycle, just like the massive amount of debt helped create a hurricane of bad economic news for the past few years.

# Three pathways to deleveraging

Debt can become less burdensome in three ways. There can be less debt, debt can cost less due to lower interest rates, and it may be easier for households to carry the same amount of debt if incomes rise. Let's consider each path in isolation.

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## Reaching sustainable debt levels with slow debt growth alone

It would take years, perhaps decades, to reach sustainable household debt levels if we leave market forces alone to solve the problem. The mostly do-nothing approach to deleveraging of the past few years shows that this is associated with tremendous economic pain that could last for many more years, especially since current economic circumstances may slow further declines of household debt and thus of the debt-to-after-tax-income ratio.

To be sure, households have already lost a lot of debt. Total debt has fallen by \$1.4 trillion (in 2011 dollars) from its peak in late 2007 to its most recent bottom of \$13.3 trillion in June 2011. This 9.4 percent decline of inflation-adjusted debt reflects both enormous economic pain for households, which have lost their homes due to foreclosure, fewer qualified borrowers due to high unemployment, sharply lower home values, and large credit constraints to families and businesses alike as banks continue to restrict lending to many borrowers. Yet many qualified borrowers, businesses, and households alike cannot get credit for desirable investments, and there are fewer qualified borrowers to begin with. The housing market, business investments, hiring, and the economy suffer as a result.

It is clearly possible to continue on this path of shrinking the actual amount of debt, but this will also mean that the economy will be saddled with slow growth and high unemployment for a long period of time. The economy will only see stronger growth if household debt levels reach sustainable levels, defined as debt levels that do not cause crisis behavior among households, businesses, and banks. Households will spend more, businesses will invest faster, and banks will become less restrictive in their lending practices once debt has returned to sustainable levels.

There is no clear measure of what level of debt will be sustainable. One reasonable threshold may be the point at which debt equals after-tax income again, meaning when the ratio of debt to after-tax income is 100 percent. Another possible threshold for sustainable debt levels may be the average debt level of the late 1990s. The interest rate levels then were comparable to what we can expect in noncrisis times, when economic distress among households was manageable, although often high, and economic growth throughout the period from December 1994 to March 2001 was solid.

The average debt-to-after-tax-income ratio for this period was 89.1 percent, and any debt level below this ratio could potentially be considered sustainable. The threshold for sustainable debt levels, though, would likely be lower if interest rates rose again due to tighter monetary policy or higher inflation. Most importantly, we are far away from any of the thresholds discussed here since the ratio of debt to after-tax income stood at 114.3 percent in June 2011. It will take years if not decades to reach sustainable levels of debt as Table 2 (below) shows.

Table 1 on page 4 shows a few simple simulations for possible paths for deleveraging. The simulations use three different scenarios to model the ratio of debt to after-tax income in the future. This ratio in the future will depend on how fast after-tax income and debt will grow. There are three different sets of assumptions for debt growth but all of them assume that the average after-tax-income growth rate remains the same across all three scenarios, with an annual growth rate of 4 percent. There currently is little reason to believe that without sustained policy interventions, which are briefly discussed below, household income growth will accelerate beyond that level.

This 4 percent growth rate is well below the historic average growth rate of 6.8 percent but it is equal to the slow income growth of the past year from June 2010 to

**TABLE 2**  
**Three ways to speed reductions in household debt**

Year of reaching sustainable levels of debt with continued deleveraging under three select scenarios: “do nothing,” refinancing with lower interest rates, and faster income growth

Assumptions	After-tax income growth	Debt growth	Quarter, when debt to after-tax income falls below 100 percent for the first time	Quarter, when debt to after-tax income falls below 89.1 percent for the first time
<b>Rapid deleveraging</b>	4.0	-1.0	March 2014	June 2016
<b>Flat return</b>	4.0	0.0	December 2014	December 2017
<b>Returning debt growth</b>	4.0	3.0	December 2024	September 2036

Notes: All figures are in percent. Sources: Calculations are based on: “Federal Reserve Statistical Release Z.1 - Flow of Funds Accounts of the United States”; Bureau of Economic Analysis, *National Income and Product Accounts*.

June 2011.<sup>20</sup> The assumed average debt growth rate is -1 percent in the first example to capture the continuation of rapid deleveraging.<sup>21</sup> The second scenario assumes zero debt growth going forward to capture some easing of credit market conditions in the near term. And the third scenario allows for some debt growth to return by assuming that debt will increase annually by 4 percent, although this debt growth rate is well below the historic average before the crisis of 9 percent.<sup>22</sup>

Table 2 shows that it could take years, if not decades, to reach sustainable debt levels. At the rate of debt declines of the past few years—about 1 percent annually—it will take until June 2016 before the ratio of debt to after-tax income falls again to the average of the 1990s. And this is only the best-case scenario. All other scenarios show that it could take a lot longer, possibly decades, before household leverage falls to sustainable levels, particularly if debt starts to grow again, even if just modestly.

The Obama administration made some efforts to help homeowners refinance their mortgages but with only limited success. The Obama administration launched its signature initiative to address the foreclosure crisis, called Making Home Affordable, in the spring of 2009.<sup>23</sup> Making Home Affordable consisted of two primary programs meant to help struggling homeowners. The first was the Home Affordable Mortgage Program, or HAMP, which was designed to encourage mortgage servicers to provide loan modifications to homeowners who are either in default or at imminent risk of default. The second was the Home Affordable Refinance Program, or HARP, which was designed to help homeowners who are current, but at risk of delinquency, by allowing them to refinance into today's historically low rates. Without HARP homeowners would be disqualified from refinancing because their loan-to-value ratios—the amount of outstanding mortgages to the present value of a house—were too high because of home price drops.

Homeowners could initially refinance under HARP if their loan-to-value ratios were less than 125 percent, assuming that their mortgage was conforming to Fannie Mae and Freddie Mac standards. The Obama administration announced that it would waive this cap on October 24, 2011, allowing homeowners who are deep underwater to refinance their mortgages as well. Homeowners who are still current on their mortgage payments but who would not be able to refinance due to high loan-to-value ratios following sharp drops in house prices can theoretically refinance into mortgages with much lower interest rates than they currently have.

A homeowner, for example, who owes \$250,000 on a property valued at \$200,000 and who pays 5 percent on a mortgage could theoretically get a new mortgage at a rate much closer to the current market rate of 4 percent. But lenders often charge large upfront fees to borrowers with high loan-to-value ratios, thus making HARP less effective than initially anticipated, as Sarah Rosen Wartell, David Min, and Jordan Eizenga of the Center for American Progress point out.<sup>24</sup>

Both HAMP and HARP attempted to reduce the monthly mortgage payments of struggling borrowers, and HAMP allowed for some mechanisms to reduce the actual debt owed. None of these major programs had the effect hoped because of lower-than-expected participation and barriers to more widespread adoption limited participation by borrowers. The HAMP program registered slightly more than 800,000 loan modifications since its inception in March 2009. But the HARP program, which registered close to 900,000 refinances performed since it began in March 2009, is the focus of renewed attention in the Obama administration and Congress.

The Obama administration last month unveiled some changes to the HARP program to try to spur more refinances, with the details to come in November.<sup>25</sup> Broadly, though, the Federal Housing Finance Administration, which regulates Fannie and Freddie (both of which are in government conservatorship), plans to reduce the upfront costs for borrowers who are current on their mortgages for the previous six months and want to refinance their mortgages by:

- Substituting costly mortgage appraisals with so-called Automated Valuation Models used by the two mortgage giants to appraise mortgages more cheaply
- Waiving loan-level price adjustments that increase interest rates for borrowers with higher loan-to-value ratios
- Easing the requirement for representations and warranties about borrowers' incomes when refinancing
- Allowing borrowers with loan-to-value ratios in excess of 125 percent to participate in HARP

These are important first steps but more could be done.

Specifically, borrowers should be able to roll the cost of appraisals into their mortgage to reduce upfront costs further, and they should be able to conduct a more

limited title search when refinancing. Lenders should be encouraged to participate in HARP by reporting their participation rates in the program or perhaps being required to meet certain targets. And the Federal Housing Finance Administration should launch a major advertising campaign to reach eligible and newly eligible homeowners in HARP.<sup>26</sup> All of this, together with the efforts already underway, could lead more homeowners to take advantage of low interest rates by refinancing and thus reducing their mortgage payments. Homeowners would have more resources available than is currently the case, thus allowing them to save more, pay down their other debt more quickly, better maintain their consumption, avoid foreclosures, or all of the above.

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### Refinancing existing debt as a quick way to free up money for consumption

Refinancing debt into less costly debt is another alternative that would result in faster deleveraging and it would help bring down foreclosures from their historically high levels. Lower interest payments mean that households have more money available to repay their outstanding principal more quickly. The average interest rate on mortgages—by far the largest share of household debt—stood at 4.3 percent in August 2011. This is down from its last peak of 5 percent in February 2011. It is also close to a record low, with the lowest monthly average rate since April 1971, when the Federal Reserve started to collect these data, being recorded in February 2010 with 4.2 percent. Interest rates edged somewhat lower toward 4 percent in September 2011.<sup>27</sup> Some downward movement for all mortgages may thus still be possible.

What would that look like for a typical borrower? Let's assume a borrower took out a 30-year, fixed-rate mortgage for \$250,000 five years ago. Let's then assume the borrower could refinance based on the three different interest rates—5 percent, 4.75 percent, 4.5 percent—into a new 25-year mortgage or another 30-year mortgage to further stretch the payments into the future. If this were possible then these large drops in interest rates and the lengthening of the payment schedule would reduce the monthly payment on the existing mortgage.

Table 3 (on next page) shows what that range of options would look like to a homeowner looking to refinance. The savings from refinancing such a mortgage

could be substantial. A household that originally took out a 30-year mortgage at 5 percent refinancing into another 30-year mortgage at 4 percent could save \$2,952 annually, which reflects a cut of its monthly payment by 18.3 percent. This is the largest-possible savings in the scenarios presented in Table 3, with all other cuts being smaller. The scenarios do not assume any refinancing fees, which could reduce the benefits of refinancing initially. The scenarios are thus a best-case outcome for borrowers. If the household used these savings to pay back principal faster, they would shed an extra \$16,000 in debt after five more years and owe 8 percent less than if they did not use the additional savings for quicker loan repayments.

Put yet another way, a household’s debt-to-after-tax burden could reach sustainable levels more quickly, possibly several years earlier than otherwise would be the case. With an annual growth rate of personal disposable income equal to 2 percent, for instance, it would take the household in this example another five-and-a-half years to reach a ratio of 89.1 percent of after-tax income—assuming that the household starts with a ratio of 114.3 percent and a current mortgage rate of 5 percent today. The household would get to sustainable debt levels 12 months faster, after refinancing to a 4 percent interest rate, stretching payments for 30 years, and using the additional payments to repay the principal faster. Notes: All figures are in dollars. The original loan amount is set equal to \$250,000.

Lower mortgage payments through refinancing could make a major difference in household debt service and for our economic recovery if it occurred at a large-enough scale. The household debt service burden in June 2011 stood at 11.1 percent, already much lower than the record high of 14 percent in September 2007.<sup>28</sup> A drop in the debt service burden by another 10 percent would bring it to 9.9 percent, which would be the lowest burden on record going back to 1980.

**TABLE 3**  
**Three ways to lower the household debt burden**  
 The consequences of refinancing at lower interest rates under different assumptions

Original interest rate	New monthly payment	Remaining principal after five years	Old monthly payment		Annual savings	
			25-year mortgage	30-year mortgage	25-year mortgage	30-year mortgage
<b>5 percent</b>	229,572	1,342	1,212	1,096	1,560	2,952
<b>4.75 percent</b>	228,745	1,304	1,207	1,092	1,164	2,544
<b>4.5 percent</b>	227,895	1,267	1,203	1,088	768	2,148

Notes: All figures are in dollars. The original loan amount is set equal to \$250,000. Source: Author’s calculations.



Lower debt payments, especially for mortgages, alone could have a beneficial effect on economic growth in the near term—even if the additional savings are not used to repay mortgage principal. Lower debt payments could free up more money for consumption and thus provide businesses with an incentive to invest more. A virtuous cycle, whereby faster consumption leads to more investment, would result in more hiring and thus more consumption.

Many borrowers would take advantage of historically low interest rates and refinance their existing debt, especially mortgages, if they could persuade their lenders to do so. Many lenders may be reluctant to allow borrowers to refinance since borrowers may already owe more on their houses than they are worth, borrowers' incomes may have declined since they first took out the mortgage due to the weak labor market, and lenders may have tightened lending standards substantially to protect themselves in the wake of massive foreclosures. Incomes and housing values would have to rise to make lenders less reluctant to help homeowners refinance.

The steps recently unveiled by the Obama administration will help. Homeowners who owe a lot of money relative to the value of their houses because house prices have dropped so much in recent years may find it easier to refinance their mortgages than is currently the case. A homeowner who has a 5 percent, 30-year mortgage taken out five years ago in 2006 and who refinances into another 30-year mortgage at 4 percent may save close to \$3,000 per year. (see Table 3)

Indeed, much of the effectiveness of federal housing finance policy will ultimately revolve around whether and to what extent the federal government continues to play a major role in this area. Congressional Republicans in particular have been outspoken about their belief that the federal conservatorship of Fannie Mae and Freddie Mac should end as quickly as possible, and that they should be replaced with private sources of liquidity in the secondary market for home mortgages—a market where individual mortgages are purchased in bulk and resold to institutional investors at home and abroad. The ability of policymakers to affect housing debt would be much more limited if this secondary market did not directly involve Fannie Mae and Freddie Mac, which purchase and resell home mortgages, enabling mortgage lenders to offer new mortgages to new borrowers.

Even the most ardent critics of the federal government's role in the mortgage markets have tempered their calls for immediate privatization because of the continued weakness of the housing sector. In the absence of any obvious private sources to replace the \$6 trillion in outstanding mortgages currently financed by Fannie

and Freddie through their purchases of mortgages to be resold as mortgage-backed securities, drastic action on Fannie Mae and Freddie Mac is likely to be tabled at least until after the 2012 election. Policymakers thus have an opportunity to at least temporarily help homeowners refinance their mortgages and thereby accelerate the decline of households' debt burdens by embracing the Obama administration's plan to enable Fannie- and Freddie-guaranteed mortgages to be refinanced by individual mortgage.

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### Faster income growth can lead to accelerated deleveraging

The third possibility is to encourage faster income growth than would otherwise occur. Income can rise in a number of ways. People may get more jobs, they may get paid more, they may receive a tax cut, and they may get higher social insurance payments, from unemployment insurance or from Social Security. President Obama's proposed American Jobs Act includes all of these measures by:

- Promoting more infrastructure spending on schools (more jobs and thus more wages)
- Lowering payroll taxes paid by employees and employers (more take-home pay)
- Continuing the extension of unemployment insurance benefits (more assistance)

Table 4 uses the same debt reduction assumptions as in Table 1 but assumes annual income growth equal to 7 percent instead of 4 percent for the average family, which could result from more jobs, lower taxes, and more assistance, at least temporarily. The effect is remarkable. It would take 21 months less, for instance, than previously calculated to reach the average debt levels of the 1990s if debt continued to fall, and it would take two-and-a half years less to get there if debt stayed flat.

**TABLE 4**  
**Rising incomes means faster household debt reduction**

Year of reaching sustainable levels of debt with continued deleveraging with faster income growth and three select scenarios

Assumptions	After-tax income growth	Debt growth	Quarter, when debt to after-tax income falls below 100 percent for the first time	Quarter, when debt to after-tax income falls below 89.1 percent for the first time
<b>Rapid deleveraging</b>	7.0	-1.0	March 2013	September 2014
<b>Flat debt</b>	7.0	0.0	June 2013	March 2015
<b>Returning debt growth</b>	7.0	4.0	March 2016	December 2019

Source: Author's calculations.

These changes seem possible, at least in the short run, if Congress passes President Obama's proposed American Jobs Act or similar measures that target job creation through infrastructure spending, temporary tax cuts for low-income and middle-income families, and that boost unemployment insurance benefits. That is, policymakers can temporarily boost incomes, thus bringing leverage to sustainable levels more quickly and hence bringing economic balance and stronger economic growth back in the near term.

Policymakers can temporarily boost incomes through temporary payroll tax cuts and higher unemployment insurance payments. And they could boost jobs growth by creating the conditions for new hiring on federally funded infrastructure projects. This could strengthen after-tax income growth, hopefully by several percentage points, and thus reduce the household debt burden to sustainable levels potentially years sooner than would otherwise occur.

A few more points are worth considering in favor of temporarily boosting after-tax income growth and its link to deleveraging. First, the biggest deleveraging buck and thus the largest help to the economy in the coming years for the policy intervention buck could come from emphasizing help to middle-income families—those who were above the 20th percentile in income in 2010 but below the top quintile with annual incomes of less than \$100,065 but more than \$20,000 in 2010.<sup>29</sup> The data presented earlier show that families in these income categories had the largest debt-to-after-tax-income ratios when the crisis started.

Second, temporary boosts to after-tax incomes are especially useful in helping households deleverage faster. Lenders will remain reluctant to offer new debt at a fast pace knowing that the after-tax-income boost is temporary. That is, debt growth, beyond refinancing existing debt, will remain modest. Slower debt growth helps accelerate the decline in the debt-to-after-tax-income ratio much more than modest debt growth, as shown in Table 2 above.

Third, boosts to after-tax income could help many heavily indebted households overcome temporary financial struggles such as a family medical emergency or the last year of college tuition for a son or daughter. Foreclosures may gradually decrease because households will become less likely to have to choose between paying their bills and making their mortgage payments, and banks may end up holding fewer bad loans, which could translate into an easing of lending standards for all borrowers, businesses, and households alike.

The goal here is to find the right balance between loosening overly tight credit markets and granting excessive and ultimately unsustainable credit. A boost in after-tax incomes through more jobs thanks to more infrastructure spending, temporary tax cuts, and unemployment insurance extensions, among others, may just be the right step toward achieving this balance.

# Conclusion

High household debt is putting the brakes on U.S. economic growth. Household debt relative to after-tax income is still higher than it was at any point before the middle of 2004—even though we have now experienced almost four years of unprecedented debt declines due to a massive wave of foreclosures, among other factors.

The numbers clearly show that it could take several more years of enormous economic pain for borrowers to lower their household debt levels amid slow economic growth and high unemployment if we leave the decline in debt solely to market forces. Waiting for the combination of debt destruction via home foreclosures and tight-fisted lending to do its job will keep the U.S. economy in a holding pattern for years to come.

American families deserve better. Policymakers should try to find a quicker and less economically painful way out of this debt mess. The two alternatives are lower debt payments through debt refinancing and a lower debt burden by boosting after-tax incomes. The numbers suggest that both refinancing and temporary boosts to after-tax income thanks to faster job creation following more infrastructure spending, temporary tax cuts, and more unemployment insurance benefits could be very beneficial.

Each step could shave years off the painful deleveraging trek for struggling home mortgage borrowers. These steps are thus worth a try, particularly since we already know that the alternative is painfully slow economic growth and high unemployment. Congress should pass the American Jobs Act as a critical step to help American families dig out from their crushing debt burden more quickly than would otherwise be the case.

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## About the author

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## Endnotes

- 1 Calculation based on: Bureau of Economic Analysis, *National Income and Product Accounts* (Department of Commerce, 2011).
- 2 Ibid.
- 3 Debt refers to credit market liabilities and thus excludes outstanding taxes and security credit from brokers. Author's calculations based on: "Federal Reserve Statistical Release Z.1 - Flow of Funds Accounts of the United States," available at <http://www.federalreserve.gov/releases/z1/>.
- 4 Author's calculations based on: Bureau of Labor Statistics, *Current Employment Statistics* (Department of Labor, 2011).
- 5 The Mortgage Bankers Association reports that the share of mortgages in foreclosure started to rise from a low of 0.99 percent in June 2006. This share had grown to more than 2 percent by the end of 2007 and eventually exceeded 4 percent on a consistent basis from June 2009 to June 2011. Prior to the crisis, the share of mortgages in foreclosure had never been greater than 1.5 percent, going back to 1979, when the data series starts. See: Mortgage Bankers Association, "National Delinquency Survey" (2011). The share of credit cards that banks wrote off each quarter increased sharply during the crisis and exceeded 10 percent for four consecutive quarters from September 2009 to June 2010. See: "Charge-Off and Delinquency Rates on Loans and Leases at Commercial Banks," available at <http://www.federalreserve.gov/releases/chargeoff/>.
- 6 Author's calculations based on: "Federal Reserve Statistical Release Z.1 - Flow of Funds Accounts of the United States"; Bureau of Economic Analysis, *National Income and Product Accounts*.
- 7 Brian K. Bucks and others, "Changes in U.S. Family Finances from 2004 to 2007: Evidence from the Survey of Consumer Finances," *Federal Reserve Bulletin* 95 (2009): A1–A55.
- 8 Income thresholds are taken from: "Historical Income Tables," available at <http://www.census.gov/hhes/www/income/data/historical/household/index.html>. Debt-to-income ratios are calculated only for households who owed any debt in the data year. Author's calculations based on: "Survey of Consumer Finances," available at <http://www.federalreserve.gov/econres-data/scf/scfindex.htm>.
- 9 Christian E. Weller, "Need or Want: What Explains the Run Up in Consumer Debt?," *Journal of Economic Issues* 41 (2) (2007): 583–591.
- 10 Income thresholds are taken from: "Historical Income Tables," available at <http://www.census.gov/hhes/www/income/data/historical/household/index.html>. Debt-to-income ratios are calculated only for households who owed any debt in the data year. Author's calculations based on: "Survey of Consumer Finances," available at <http://www.federalreserve.gov/econres-data/scf/scfindex.htm>.
- 11 Weller, "Need or Want."
- 12 The data in Figure 2 show five-year averages. The quarterly data move around a lot, such that averaging the observations make the line smoother to better illustrate the underlying trends.
- 13 Weller, "Need or Want."
- 14 Calculations based on: Bureau of Economic Analysis, *National Income and Product Accounts*; "Federal Reserve Statistical Release Z.1 - Flow of Funds Accounts of the United States."
- 15 Calculation based on: Bureau of Economic Analysis, *National Income and Product Accounts*.
- 16 It is important to note that the share of homeowners' equity out of the total value of their homes still decreased during this period. Homeowners on average owned a record-low 38.1 percent of their homes in early 2011. That is, homeowners still lost wealth, even though they took out fewer mortgages and they put new money into their homes. The explanation is that the values of all homes dropped throughout the crisis and the ensuing economic recovery, leaving households with ever less wealth. Calculations, not shown here, based on: "Household Debt Service and Financial Obligations Ratios," available at <http://www.federalreserve.gov/releases/housedebt/>; Bureau of Economic Analysis, *National Income and Product Accounts*.
- 17 Calculations based on: Bureau of Economic Analysis, *National Income and Product Accounts*.
- 18 A plot of five-year average debt service burdens and five-year growth rates of inflation-adjusted consumption indeed shows some contemporaneous correlation, such that debt burdens and consumption growth move in opposite directions. When debt burdens are high, consumption growth is low, and when debt burdens are low, consumption growth is relatively high. Calculations, not shown here, based on: "Household Debt Service and Financial Obligations Ratios," available at <http://www.federalreserve.gov/releases/housedebt/>; Bureau of Economic Analysis, *National Income and Product Accounts*.
- 19 Data on debt service burdens go back to 1980, such that I can calculate complete five-year averages starting in 1985. The five-year average is then introduced with a five-year lead to compare to current investment, such that the series start with the last quarter of 1989.
- 20 After-tax income growth calculated based on: Bureau of Economic Analysis, *National Income and Product Accounts*. Long-term average growth rate is the growth rate from March 1952 to December 2007, the last quarter before the Great Recession.
- 21 Debt growth calculated based on: "Federal Reserve Statistical Release Z.1 - Flow of Funds Accounts of the United States."
- 22 Ibid. Long-term average growth rate is the growth rate from March 1952 to December 2007, the last quarter before the Great Recession.

- 23 The major program launched by the Obama administration to forgive owed principal has been the “Short Refi” program created by the Federal Housing Administration in August 2010. This program encourages private lenders to refinance underwater mortgages, where the homeowner owes more on the outstanding mortgage than the house is worth, as FHA-insured loans, with the principal reduced to a level of 97.75 percent of loan to value or lower. Borrowers would receive a new mortgage with more affordable payments and they go from having negative equity to positive equity with this program. The program has had only 305 short refinances in its one year of existence (and only 891 applications). See: “FHA Single-Family Outlook,” available at <http://portal.hud.gov/hudportal/documents/huddoc?id=ol0811.pdf>.
- 24 Sarah Rosen Wartell, David Min, and Jordan Eizenga, “Refinancing At-Risk Homeowners: The Home Affordable Refinancing Program Can Help Stabilize the Housing Markets” (Washington: Center for American Progress, 2011).
- 25 Federal Housing Finance Agency, “FHA, Fannie Mae and Freddie Mac Announce HARP Changes to Reach More Borrowers,” News release, October 24, 2011.
- 26 Wartell, Min, and Eizenga, “Refinancing At-Risk Homeowners.”
- 27 Interest rate data from: “Federal Reserve Statistical Release H.15 - Selected Interest Rates,” available at <http://www.federalreserve.gov/releases/H15/>.
- 28 “Household Debt Service and Financial Obligations Ratios,” available at <http://federalreserve.gov/releases/housedebt/default.htm>.
- 29 The cut-off points for the 20th and 80th percentile of the income distribution are taken from: Bureau of the Census, *Income, Poverty, and Health Insurance Coverage in the United States: 2010* (Department of Commerce, 2011).

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