Box 1

HOW MUCH PROGRESS HAS BEEN ACHIEVED IN HOUSEHOLD DELEVERAGING IN THE UNITED STATES?

Household deleveraging in the United States has acted as a significant headwind to consumption and activity in recent years, holding back the recovery. Despite the substantial balance sheet adjustment that has resulted from both the paying-down of debt and defaults, a key question with regard to the outlook for the United States is whether deleveraging has ended or whether further adjustment is needed. This box focuses on recent trends and dynamics on the assets and liabilities sides of the aggregate household balance sheet. Overall, the substantial balance sheet

repair that has occurred in the household sector since the end of 2007, coupled with sustained increases in net worth in recent years, suggests that household deleveraging will be less of a drag on consumption and activity in the future than it has been in the recent past. Although US household debt remains at historically high levels, suggesting a need for further deleveraging, the ongoing recovery of the US economy has translated into stronger economic fundamentals which, together with positive wealth effects, support consumption.

Household deleveraging in the United States

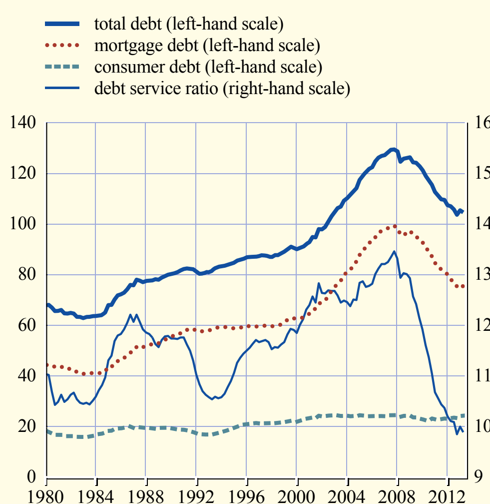
The balance sheet adjustment in the household sector has been a prominent feature of the most recent US recession and subsequent recovery. The beginning of the economic downturn in late 2007 broadly coincided with the start of a sustained reduction in household liabilities relative to income – or household deleveraging – which contrasted with the strong build-up of debt before the crisis. From a peak of around 129% in the fourth quarter of 2007, the household debt-to-income ratio fell by almost 25 percentage points to around 105% in the second quarter of 2013, led by sustained declines in mortgage debt (see Chart A).

The decline over that period resulted from a combination of a reduction in net borrowing (change in nominal debt stocks) and an increase in nominal incomes. These variables have played different roles in the deleveraging process over time, as seen in Chart B. Before the global crisis – up to the first quarter of 2008 – the debt-to-income ratio followed an upward trend as net borrowing rose steadily, although it was partially offset by rising incomes. Thereafter, the debt ratio started to decline. Initially, at the height of the crisis in 2009, the decline in net borrowing by households was partially offset by a sharp fall in nominal incomes. From the beginning of 2010, a reduction in actual debt and growth in nominal incomes resulting from economic recovery contributed to the deleveraging process. More recently, the pace of debt reduction has slowed markedly, with rising incomes being the most important factor behind a further fall in the debt-to-income ratio of the household sector.

While household deleveraging has clearly acted as a significant drag on the recovery,[1] the lack of an obvious benchmark on which the debt ratio should converge makes the assessment of progress on balance sheet repair difficult. History appears to offer little guidance as regards the adjustment needs in the current cycle, as the level of debt at the start of the most recent recession was unprecedented and recent swings in the household debt-to-income ratio are unusual by the standards of previous recessions

Chart A Household debt and debt service ratio

(as a percentage of personal disposable income)

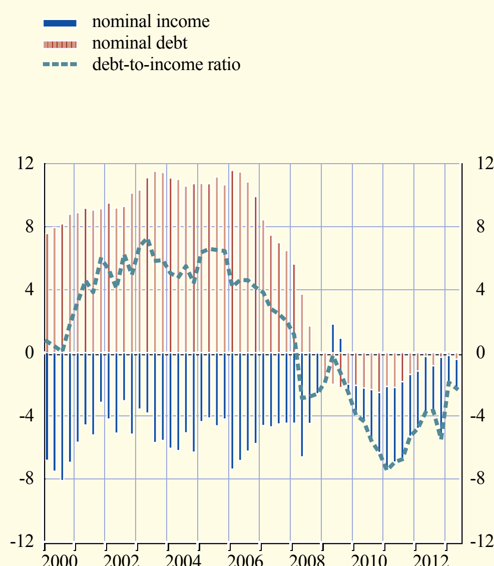


Source: Federal Reserve Board.
Note: The latest observation is for the second quarter of 2013.

1 For more details on the link between household leverage and activity, see, for example, Mian, A. and Sufi, A., "Household Leverage and the Recession of 2007 to 2009", *NBER Working Paper*, No 15896, 2010, and Mian, A., Rao, K. and Sufi, A., "Household Balance Sheets, Consumption, and the Economic Slump", *Chicago Booth Research Paper*, No 13-42, 2013.

Chart B Contributions to the change in the household debt-to-income ratio

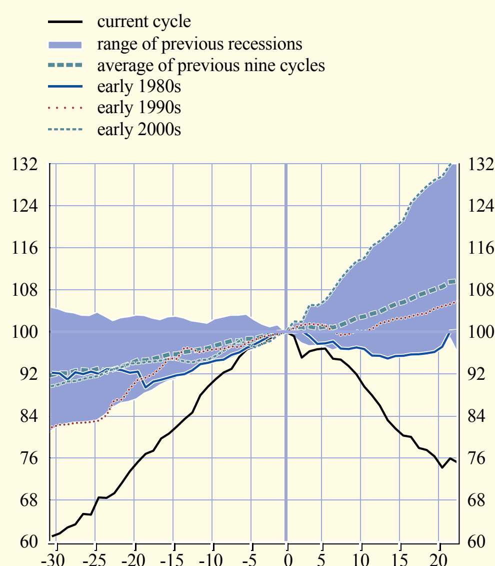
(annual percentage changes; percentage points)



Sources: Bureau of Economic Analysis, Federal Reserve Board and ECB calculations.
Note: The latest observation is for the second quarter of 2013.

Chart C Development of household debt-to-income ratio over current and past business cycles

(index: start of recession = 100; x-axis: quarters)



Sources: Federal Reserve Board and ECB calculations.
Notes: Zero marks the start of each recession. According to the National Bureau of Economic Research, there have been ten recessions in the United States since 1950, with the latest one starting in the fourth quarter of 2007.

(see Chart C). Historically, the ratio increased on average by 8 percentage points in the 30 quarters preceding a recession. This compares with a rise of 39 percentage points in the most recent recession. Moreover, when a recession ends, households typically start to build up debt again, reflecting an increase in credit availability, combined with rising confidence and an upward shift in future income expectations, which support credit demand. This feature has been absent from the current cycle, however, as the debt-to-income ratio continued to decline even in the fourth year of the economic recovery.

This unprecedented pattern reflects the ongoing process of balance sheet repair. The need to correct for unsustainably high debt-to-income levels before the crisis could be explained by a combination of factors. First, the build-up of debt prior to the crisis was in part based on overly optimistic expectations with regard to house price developments. Since these expectations were corrected abruptly in the context of the global financial crisis (as reflected in the sharpest correction in nominal house prices since the Great Depression), the ongoing adjustment in household debt could take longer than in previous cycles. Second, the weak and uncertain economic environment discouraged households from taking on new debt. Third, after the eruption of the crisis in late 2007, credit standards tightened considerably, constraining the refinancing of existing debt and restricting new lending mainly to prime borrowers with high credit scores. Fourth, a significant proportion of the reduction in debt has resulted from

defaults by households, with estimates varying from around 40% to 70%.[2] This has shifted much of the burden of deleveraging to the financial sector. While some of these factors may also have been present in previous recessions, they appear to have been more pronounced in the current cycle.

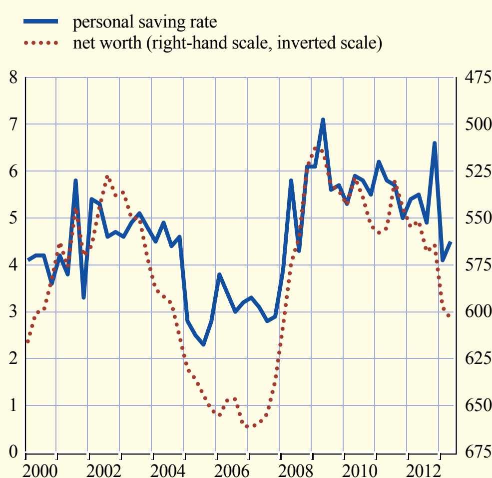
Notwithstanding these substantial adjustments in household liabilities and the historically low debt service ratio, the deleveraging process may not yet be complete. This is because current levels of interest rates are exceptionally low and monetary policy may become less accommodative over time, leading to an increase in debt service payments. Moreover, the assets side of the household sector's balance sheet also needs to be taken into account when assessing the implications of deleveraging for the private consumption outlook.

The assets side of the household balance sheet

Households' net worth (assets net of liabilities) has increased significantly since the first quarter of 2009, by around 35%, although it still remains below the pre-crisis peak when measured as a percentage of personal income (see Chart D). On the assets side, rising wealth reflects largely positive valuation effects stemming from the upturn in the real estate and financial markets (see Chart E). Recent increases in house prices reflect improved macroeconomic conditions, low mortgage rates, high pent-up demand and low levels of home inventories. Looking ahead, house price futures indicate that house prices should continue to support the value of housing assets. Moreover, since the trough of the 2007-09 recession, the value of financial assets – and in particular equity holdings, mutual fund shares and pension fund reserves – has been supported by rising equity prices, in turn reflecting strong corporate profitability and the strengthening economic recovery. Traditional financial and real estate wealth effects have been an important source of the recent resilience of private consumption in the United States.[3] These wealth gains have, to some extent, offset the drag stemming from the ongoing process of household deleveraging.

Chart D Household personal saving rate and net worth

(as a percentage of personal disposable income)



Sources: Bureau of Economic Analysis and Federal Reserve Board.
Note: The latest observation is for the second quarter of 2013.

Wealth heterogeneity across income classes

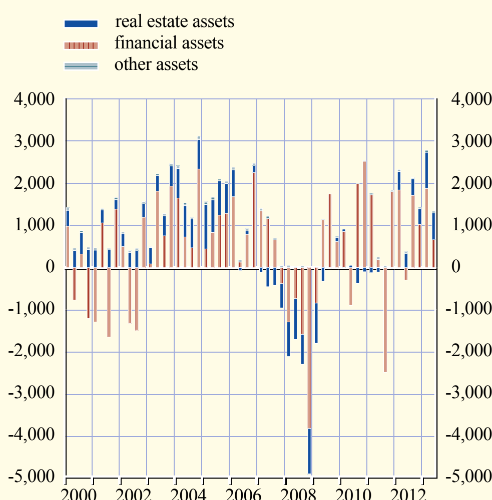
While the balance sheets of US households have clearly improved on aggregate, this masks considerable heterogeneity across the income distribution. First, the distribution of

2 See Brown, M., Haughwout, A., Lee, D. and van der Klaauw, W., "The Financial Crisis at the Kitchen Table: Trends in Household Debt and Credit", *Federal Reserve Bank of New York Staff Report*, No 480, 2010, and McKinsey Global Institute, "Debt and deleveraging: Uneven progress on the path to growth", 2012.

3 Case, K., Quigley, J. and Shiller, R., "Wealth Effects Revisited: 1975-2012", *NBER Working Paper*, No 18667, 2013 finds statistically significant and large effects of wealth on household consumption in the US states. Moreover, it finds that housing wealth has a greater effect than stock market wealth on consumption. Along the same lines, see Carroll, C., Otsuka, M. and Slacalek, J., "How Large Are Housing and Financial Wealth Effects? A New Approach", *Journal of Money, Credit, and Banking*, Vol. 43(1), 2011.

Chart E Change in household assets

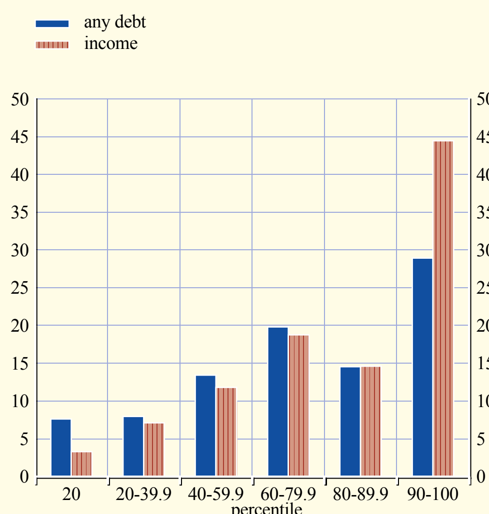
(in USD billions)



Source: Federal Reserve Board.
Notes: "Other assets" includes equipment, intellectual property products and consumer durable goods. The latest observation is for the second quarter of 2013.

Chart F Income and debt distribution in 2010

(percentages)



Source: Federal Reserve Board's Survey of Consumer Finances 2010.
Note: "Any debt" refers to any type of secured or unsecured debt.

income is more strongly concentrated within a small portion of high-income earners than the distribution of debt, which is somewhat more equally spread across the population, according to the latest Survey of Consumer Finances from 2010 (see Chart F). This means that the level of indebtedness of many low and middle-income households may be more critical than is suggested by the data for the national aggregate. Income is heavily skewed towards the top ten percentile, which accounts for around 45% of overall income. Looking at the implicit debt-to-income ratios of each income group, deleveraging needs thus appear to be more pressing for low and middle-income households, as these households hold a higher proportion of debt relative to income as compared with the national aggregate.

Second, financial assets are highly concentrated within the upper percentiles of the income distribution, to a greater extent than debt (see Chart G). Against this background, there is a large discrepancy between the households that hold most of the financial assets and those that hold the bulk of debt. In particular, while around 85% of middle to upper-income households (40th to 90th income percentiles) held some form of debt in 2010, the proportion of households holding stocks or investment funds stood below 25% for each income group, with the exception of the highest income group.

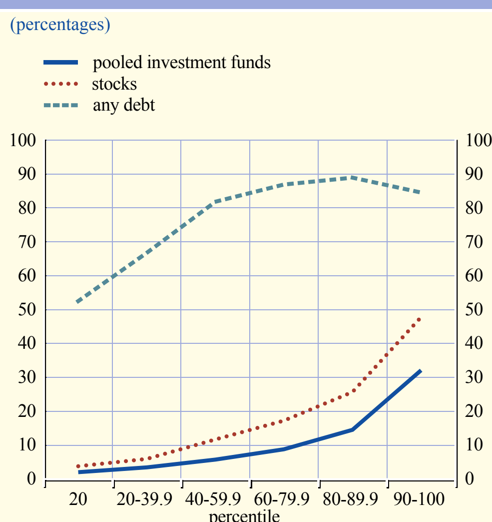
This heterogeneity has a number of implications for the consumption outlook. The current process of deleveraging has affected a large proportion of the population – especially those households that belong to the low and middle-income groups that are particularly indebted. Evidence from the literature suggests that highly leveraged households also tend to have relatively low levels of financial wealth.[4] This creates incentives for them to cut back on spending

4 See Dynan, K., "Is a Household Debt Overhang Holding Back Consumption?", *Brookings Papers on Economic Activity*, Spring 2012.

and engage in saving for precautionary reasons, in order to accumulate a wealth buffer so as to be able to smooth consumption over time in the face of future adverse shocks. The drag on consumption from balance sheet deleveraging could therefore be stronger than suggested by the aggregate data on debt and wealth. This is related to the fact that households belonging to the low and middle-income groups have, in general, a higher marginal propensity to consume than those in the high-income groups, which, in turn, are likely to have benefited proportionately more from the recent appreciation of financial assets.[5]

Chart G Households' holdings of stocks and investment funds in 2010

(percentages)



Source: Federal Reserve Board's Survey of Consumer Finances 2010.
Note: "Any debt" refers to any type of secured or unsecured debt.

Conclusion

Household deleveraging in the United States has acted as a significant headwind to consumption and activity in recent years, holding back the recovery. Although substantial balance sheet adjustment has taken place, household debt in the United States remains at historically high levels. Moreover, the improvement in the aggregate balance sheet is masked by considerable heterogeneity across the income distribution. The ongoing recovery of the US economy has translated into stronger economic fundamentals, however, which, together with sustained increases in net worth in recent years, support the view that the drag from household deleveraging on consumption and activity will gradually ease.

5 See Dynan, K, Skinner, J. and Zeldes, S., "Do the Rich Save More?", *Journal of Political Economy*, Vol. 112, 2004.

JAPAN

The latest economic data suggest that the Japanese economy expanded during the third quarter, although the pace of growth may have slowed. On the domestic side, industrial production rose by 1.5% month on month in September, following a 0.9% decline in August. Recent sentiment indicators also point to a further expansion in output during the third quarter. The latest reading of the Tankan survey shows a further rise in confidence among large and medium-sized enterprises, while the PMI manufacturing output index increased further from 52.4 in September to 54.2 in October. The trade deficit widened further during the third quarter, with real exports and imports of goods registering a contraction of 1.1% and an expansion of 2.5% respectively.

Consumer price inflation has maintained its upward trend since the beginning of the year, with the headline index moving into positive territory in June 2013. Annual consumer price inflation increased to 1% in September from 0.9% in August. At the same time, annual core inflation (excluding food, beverages and energy) remained at 0% in September, unchanged from August. The recent upward trend in inflation follows the depreciation of the yen against the currencies of its main trading partners earlier this year.