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HIGHLIGHTS

- Some leverage is economically useful, but, the U.S. clearly took this notion too far in the 2000s.
- Subsequent deleveraging has been a drag on growth over the past four years.
- Importantly, the private sector has now completed deleveraging, presenting the opportunity for slightly better – or at least better quality – economic growth.
- However, government deleveraging tends to lag the rest, and is only now commencing.

THE END OF DELEVERAGING?

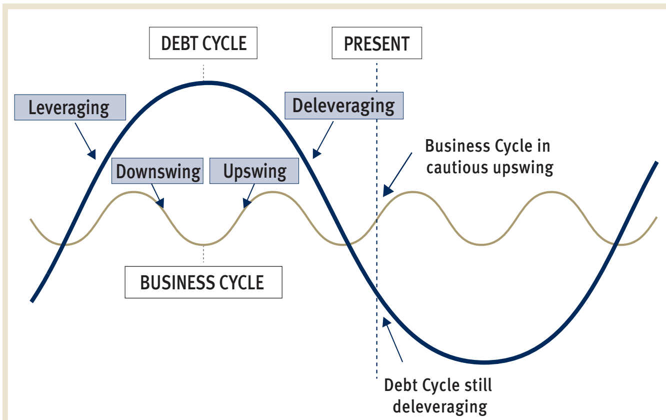
The Greek physicist Archimedes may not have been referring to the economy when he said, "Give me a lever long enough and I will move the world," but the sentiment nonetheless rings true. Financial leveraging by banks, corporations, households and governments indisputably combined to buoy the global economy for several decades.

However, this tide abruptly turned when the global financial crisis hit in 2008. Leveraging suddenly morphed into deleveraging. Alas, while it is beneficial for individual households to bring their finances into order by curtailing consumption, this unavoidably depresses economic growth when performed en masse. This "paradox of thrift" has acted like a riptide on the global economy, dragging it away from firm land.

The purpose of this report is to provide a clearer understanding for why leverage first rose, and why it is now beating a retreat. Along the way, we provide a proper definition of "leverage," acknowledge the important purpose that leverage serves, and even propose that leverage may still be capable of rising sustainably over time (within reason).

More concretely – and with a focus on the U.S., where leverage was especially frenetic – we evaluate the progress made to date in mopping up prior excesses by banks, businesses, households and governments. A key conclusion is that for America's banks, businesses and households – collectively, the private sector – deleveraging is now complete. In contrast, the U.S. government has barely left the harbour on its own deleveraging voyage.

Exhibit 1: Deleveraging Drags on Growth



Source: RBC GAM

Economically, the U.S. could manage more growth in the near future as the private sector finds its feet, tempered by the obvious need for further public-sector deleveraging. Whether or not growth manages to tick higher, it is indisputable that progress is being made along the deleveraging journey (Exhibit 1).

Understanding leverage

The classic definition of leverage is the amount of debt held against a given level of income. At least a modicum of leverage thus exists whenever money is borrowed. Escalating leverage constitutes a danger in that the amount of money requiring eventual repayment is outpacing the ability to do so. Indeed, greater leverage tends to amplify economic swings, resulting in bigger booms on the way up, and bigger busts on the way down.

Despite obvious toxicity when leverage is administered in large doses, it is not an unadulterated evil when properly scaled, and deployed strategically. Here are three reasons why.

Leverage is useful

First, leverage and its close collaborator – debt – serve an enormously valuable purpose: they enable future income to be accessed today. Young households regularly borrow to finance first homes, cars, student loans and childcare, with the expectation that they will repay the debt later in life. It is inefficient to live in penury when young, then awash in money when older.

Businesses benefit from credit as well, for instance in obtaining the funds to cover the upfront cost of raw inputs needed to produce their merchandise; or in financing a new factory that will generate additional profits later. In both cases, it is a matter of shifting future earnings to the present, when they can be more lucratively deployed.

Leverage can be misleading

Second, leverage is narrowly defined, and so neglects the bigger picture. Accumulating one dollar of new debt and two dollars of new assets constitutes an increase in leverage simply because the debt load has gone up. Developments on the asset side of the ledger are ignored, no matter how handily they offset the risk and payment burden of additional debt.

It takes two to tango

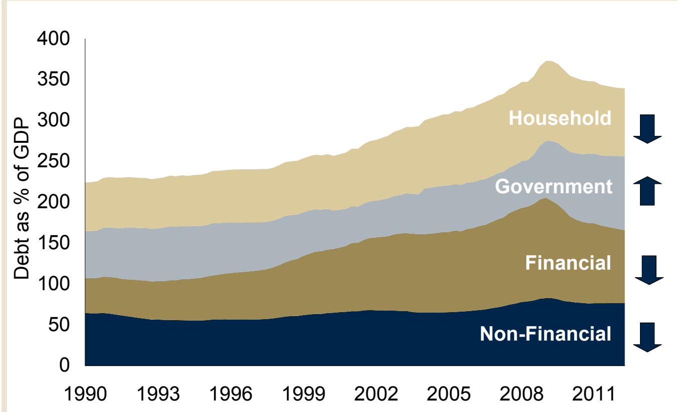
Third, it takes two to tango. While debt can indeed be understood as one's own future income pulled forward, it is also more immediately someone else's savings today (to be repaid with one's own future earnings, later). Every dollar borrowed is also a dollar lent. So when an economy suffers from an excess of spendthrifts, it must also have a large number of misers somewhere else in the system.[1]

Excessive leverage...

Although some leverage is good for an economy, the unanimous view is that U.S. leverage went too far at its peak. What prompted this excess?

[1] Alternately, it is possible that foreigners are doing the saving, with the result that the amount of domestic borrowing exceeds the amount of domestic saving. But even in this situation, the bulk of saving tends to occur domestically.

Exhibit 2: U.S. Debt Composition



Source: Federal Reserve Board, Haver Analytics, RBC GAM

First, the world had enjoyed a long period of barely interrupted prosperity, thanks in part to proactive policymaking. This persuaded many that the ravages of the business cycle had been tamed, and that a new era of stable growth would emerge. In a world without volatility, even high levels of leverage are relatively safe. In retrospect, it is clear that this thinking was flawed.

Second, financial conditions were extremely favourable through most of the 2000s. Arguably, central bankers held interest rates too low for too long, given what was in hindsight an unrealistic phobia of deflation. Low interest rates whetted the economy's risk appetite, and – in combination with a frenzy of financial deregulation that spurred the disintermediation of credit and an alphabet soup of hybrid financial products – made credit cheaper and more available than perhaps it should have been. This spawned the most virulent phase of America's leveraging problem.

Third, geopolitical forces conjured a ravenous appetite for U.S. government debt. China and others accumulated an enormous amount of Treasury securities in an effort to keep their currencies undervalued. The U.S. government thus had no trouble financing its largesse.

...In reverse

Between 2006 and 2009, several of the conditions supporting ever-more leveraging blinked out. Economic stability vanished, risk appetite plummeted, the availability of credit dried up (rendering low interest rates ineffective) and asset prices fell.

Thrust into a suddenly dystopic environment, banks, corporations and households all came to the same conclusion:

their debt loads were much too high for this new world. And so they simultaneously began a process of urgent deleveraging (Exhibit 2). This created what is frequently called a "balance sheet" recession – a recession in which economic demand shrinks because the focus is on nursing the economy's balance sheet back to health.

Accordingly, the U.S. economy began a long and precarious descent off its mountain of excess leverage (Exhibit 3). Based solely on the economy's debt-to-GDP ratio, there looks to be quite some distance left.

Indeed, there is further deleveraging needed. However, calibrating the amount isn't quite as simple as a quick glance at the raw debt-to-GDP ratio. To the contrary, there is a surprisingly solid case to be made that economy-wide leverage can rise over time, within reason (Textbox 1). What matters is how quickly the leverage advances. To that end, the Basel Committee on Banking Supervision has proposed a technique for identifying economic stress based on how far leverage diverges from its customary upward trend.

We have implemented this technique, using two different methodologies (Exhibit 4). Both agree that U.S. leverage went much too far, and that the excesses have since begun to shrink. However, they differ fundamentally from one another in that one argues there is still sizeable deleveraging left to do, yet the other claims the deleveraging has already overshot. While it is tempting to embrace the latter conclusion, we have greater confidence in the former indicator, due to our assessment (discussed later) that government leverage remains a long way from normal. We figure around 62% of the deleveraging process is complete for the economy as a whole.

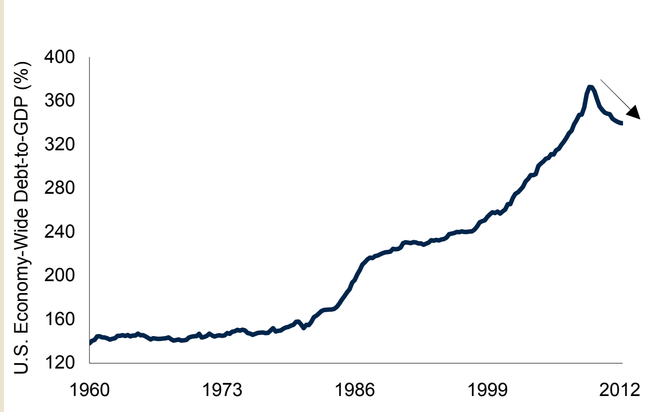
Of course, this progress varies hugely depending upon the sector in question: banking, businesses, households and government. We now discuss each in turn.

Bank deleveraging

Assessing the well-being of the banking sector requires a unique toolkit. Banks are naturally more leveraged than other parts of the economy, hold a greater variety of assets, and operate with a sizeable duration mismatch (lending long and borrowing short). All of this means that banks are especially vulnerable to economic and market dislocations.

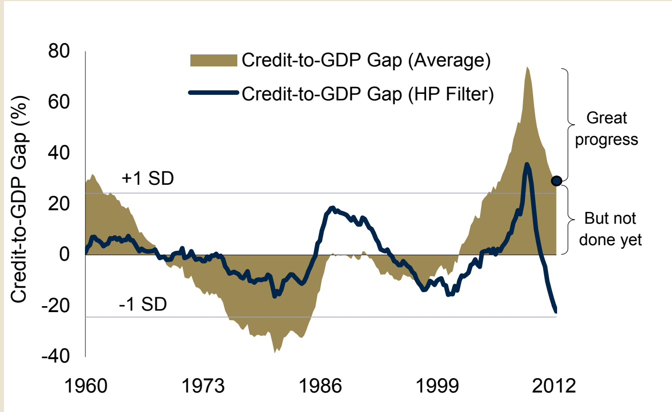
Superficially, there were few signs that anything was particularly amiss in the banking sector prior to the start of the housing correction in 2006. Banks appeared adequately capitalized

Exhibit 3: U.S. Economy-Wide Deleveraging



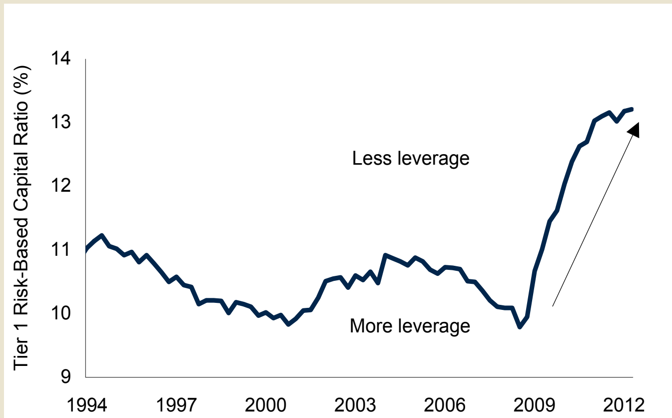
Note: Measured as domestic debt outstanding as percentage of GDP.
Source: Federal Reserve Board, RBC GAM

Exhibit 4: Gauging The Remaining U.S. Credit Excess



Note: Credit-to-GDP Gap (Average) refers to the divergence of the U.S. economy-wide credit-to-GDP ratio from its average growth rate. SD refers to standard deviation of this gap. Credit-to-GDP Gap (HP Filter) is calculated using Hodrick-Prescott filter.
Source: Federal Reserve Board, RBC GAM

Exhibit 5: U.S. Banks Have Nicely Deleveraged



Note: Tier 1 risk-based capital ratio of all FDIC-insured institutions.
Source: FDIC, Haver Analytics, RBC GAM

TEXTBOX 1: IS RISING LEVERAGE NORMAL?

Around the world, leverage has tended to rise over time (Exhibit A). In hindsight, some of this upward movement was certainly an overshoot. But all the same, "normal" is not necessarily a flat economy-wide debt-to-GDP ratio. In fact, there are three reasons why debt can sustainably out-hoof GDP.

Financing costs

First, the world has revelled in a secular decline in borrowing costs over the past three decades. This has been thanks in large part to central banks that successfully anchored inflation expectations at low levels, and to term premiums in the bond market that have nicely declined.

A key consequence is that it is now extraordinarily cheap to service debt. Even when interest rates rise, they should remain quite earthbound relative to the standards of earlier decades. As a result, the economy can affordably carry a higher level of debt than in the past.

Appreciating assets

Second, economy-wide holdings of assets have tended to rise more quickly than debt over the past several decades. This provides an important counterbalance on the balance sheet.

On a steady-state basis, the income earned on the assets – dividends, coupon payments and capital gains – provides a useful offset to the cost of servicing additional debt.

And just as a great deal of debt accumulation is for the purpose of acquiring assets (mainly, homes), burdensome debt can be lightened by liquidating assets.

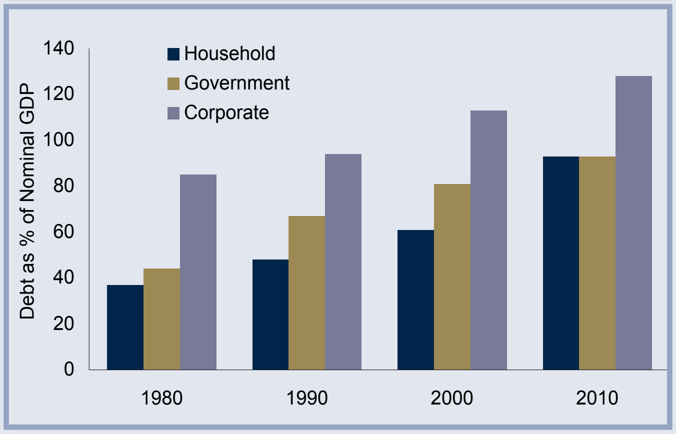
The one obvious exception to this argument is government leverage. Government assets tend to be relatively meagre versus their debt, and so governments cannot as easily leverage up over time.

Financial market deepening

Third, there is a strong positive link between productivity and financial market depth. More productive nations appear able to sustain greater financial depth, which is to say more sophisticated banking services, more credit and – ultimately – more leverage. In fact, the causality runs in both directions. Deeper financial markets are associated with a meaningfully positive effect upon long-term economic growth. Illustrating this, the governments, businesses and households in low-income countries have virtually no access to credit. Middle-income countries have limited access to credit. High-income countries have ample access to credit, and the richer they become, the more credit they tend to sustain.

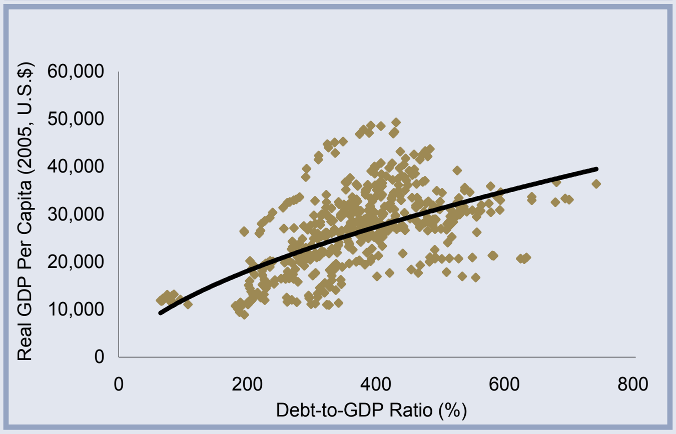
Our own analysis confirms that economy-wide debt-to-GDP ratios clearly rise over time as individual countries become richer, and equally that rich countries today tend to be able to sustain more leverage than poor countries (Exhibit B).

Exhibit A: Rising Leverage Is the Global Norm



Note: Simple average of debt as % of nominal GDP of 18 advanced economies.
Source: Cecchetti, Mohanty and Zampolli (2011), BoAML, RBC GAM

Exhibit B: Richer Countries Can Be More Leveraged



Note: Scatterplot of longitudinal data for 32 countries.
Source: Haver Analytics, RBC GAM

relative to the assets they held. However, the assets soon proved to be of a much lower quality than anticipated, and their valuations fell like lead balloons between 2007 and 2009. In the fall of 2008, a wide range of funding markets froze, blocking banks from raising capital. This put the banking sector in a triply precarious position – with plummeting asset valuations, shrinking capital and limited immediate means of rejuvenating their capital positions.

Fortunately, the majority of U.S. banks managed to survive this initial onslaught, with enormous help from policymakers. Since then, banks have responded to their remaining shortfalls in a commendable fashion. U.S. banks now hold about 30% more capital against their assets than the norm of the past 20 years (Exhibit 5). For good measure, they have tilted their funding source away from fickle markets and toward relatively stable deposits (Exhibit 6). Lastly, with the housing market on the mend, it appears that many bank assets are now conservatively priced. This minimizes the risk of another nasty surprise.

This deleveraging was not painless. To the contrary, the rate of bank lending was obliged to slow materially, and consequently there is U.S.$900 billion less in loans outstanding than there would have been in the absence of bank deleveraging. This has subtracted as much as 3% from the size of the economy.

Auspiciously, U.S. banks now appear to be finished deleveraging. In fact, by some metrics they may even have overshot the target. For example, they now exceed Basel III requirements. Banks are in no mood to risk their very existence a second time.

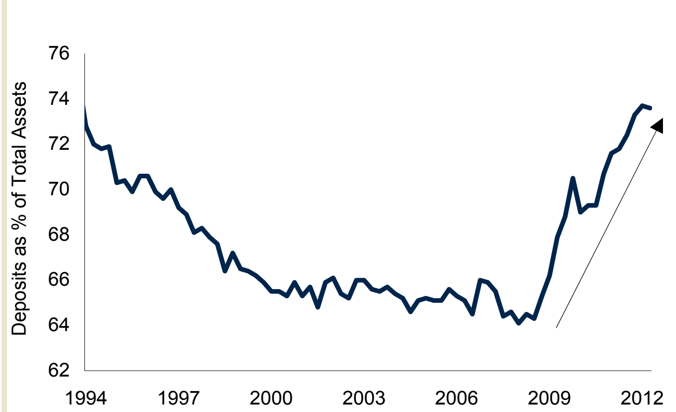
The end of bank deleveraging signals at least a mild transformation. Banks should now be willing to grow their lending at a rate that is roughly consistent with nominal economic growth. Indeed, it appears that they are, as credit growth is now advancing at 6% per year – easily the quickest since the financial crisis set in (Exhibit 7).

Business deleveraging

Going into the financial crisis, U.S. businesses were not especially leveraged. The business debt-to-income ratio was drifting higher, but still close enough to historical averages, and nowhere near earlier peaks (Exhibit 8). Prior to the crisis, the debt-to-net worth ratio was actually unusually low (Exhibit 9).

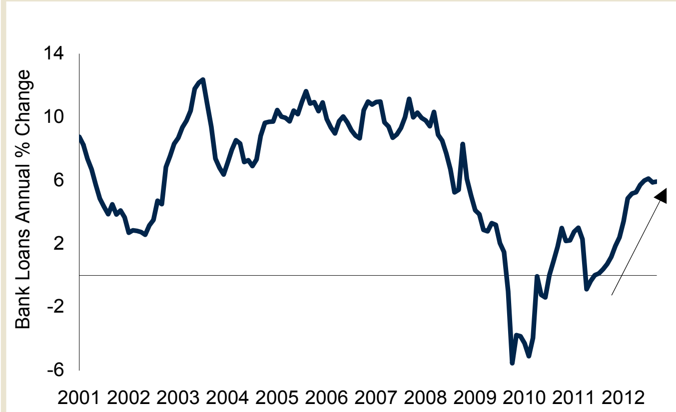
Of course, these figures looked somewhat uglier once the financial crisis struck, as incomes and net worth declined. But as businesses took to deleveraging after the crisis – passively as

Exhibit 6: Banks Enjoy a More Stable Funding Base



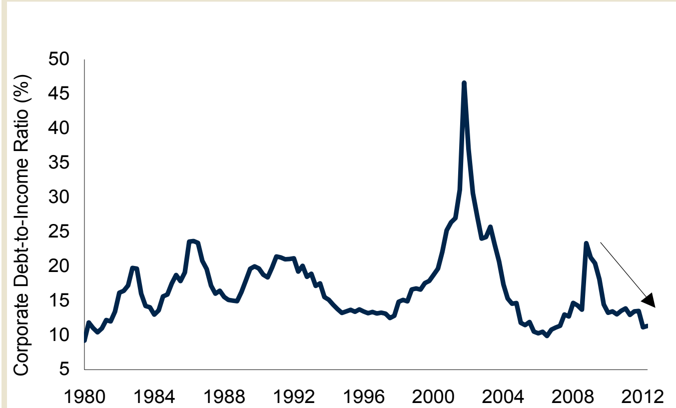
Source: FDIC, Haver Analytics, RBC GAM

Exhibit 7: U.S. Bank Lending Improves



Source: Federal Reserve Board, Haver Analytics, RBC GAM

Exhibit 8: U.S. Corporate Leverage Is Back to Normal



Source: Federal Reserve Board, Haver Analytics, RBC GAM incomes rose and asset valuations rebounded; and actively as firms strengthened their balance sheets via downsizing and via retained earnings – both metrics have been restored to healthy levels.

Having lived through a near-death experience, businesses are now putting a premium on survivability over profitability. Holdings of liquid assets have increased (Exhibit 10), and firms have tilted how they deploy their retained earnings away from capital investments and toward accumulating a buffer of financial assets (Exhibit 11). The yawning divergence between profits and investment has created a giant pile of cash on corporate balance sheets (Exhibit 12). This is a roundabout way of saying that corporations have probably deleveraged too much.

Although businesses – just like banks – are likely to operate in a state of diminished risk tolerance for many years to come, there is reason to think that uncertainty about the direction of public policy should begin to ebb in 2013, encouraging firms to begin ploughing some of their excess funds back into the economy. In so doing, business deleveraging could cease to cast a shadow on economic growth.

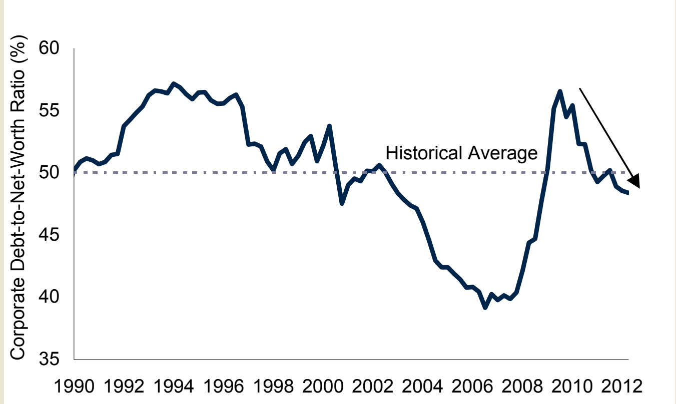
Household deleveraging

Households were arguably the feature players in the saga of excessive leverage. Between 2002 and 2007, the household debt-to-income ratio rose by a whopping 29 percentage points. The rate of household leverage did not resolve itself post-crisis as quickly as in the banking and business sectors, but significant progress has nonetheless been made (Exhibit 13). The household-debt-to-personal-disposable-income (PDI) ratio has tumbled by 21 percentage points so far.

For households, deleveraging is the interplay between rising income and falling debt (Exhibit 14). The larger contributor to this deleveraging has been rising income, contributing 16 percentage points. Meanwhile, falling debt has contributed 6 percentage points (the numbers do not sum due to rounding), amounting to a $942 billion decline in debt from its peak.

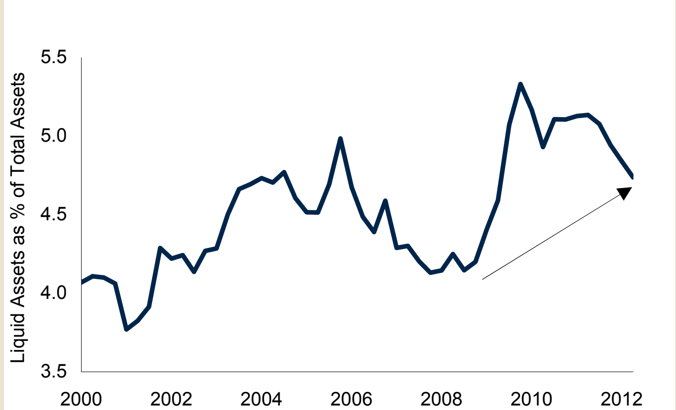
However, this simple interpretation fails to fully capture the nature of the adjustment. For the household sector as a whole, it is normal for income to rise, but abnormal for debt to fall. When contrasted against the usual path for income and debt, the entirety of the adjustment came about through an altered trajectory for debt (which veered south by 11 percentage points per year relative to its earlier trend).

Exhibit 9: U.S. Corporate Balance Sheets Normalize



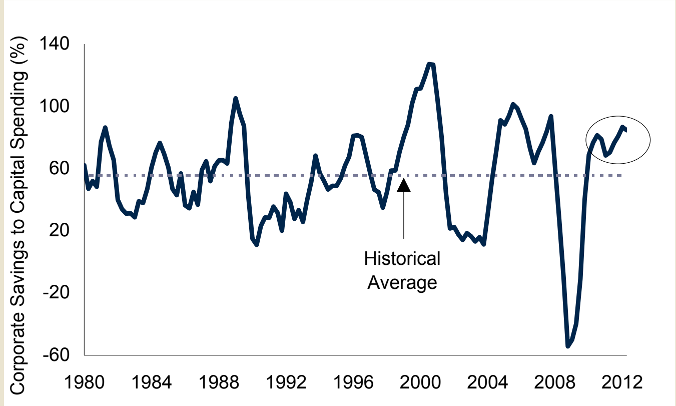
Source: Federal Reserve Board, Haver Analytics, RBC GAM

Exhibit 10: U.S. Firms Now Hold Highly Liquid Assets



Source: Federal Reserve Board, Haver Analytics, RBC GAM

Exhibit 11: U.S. Corporations Are Focused on Saving



Source: Federal Reserve Board, Haver Analytics, RBC GAM

Digging even deeper, two things enabled this rerouting of household debt. About half of the decline was due to a personal savings rate that blasted higher during the worst of the crisis (Exhibit 15). This boosted cumulative savings by 6% of income over the past four years. The other half of the decline was from asset sales that were used to pay off debt.[2]

The multi-trillion-dollar question is whether this process of household deleveraging has run its natural course, or whether there is still some distance to go.

It is tempting to put a moralistic spin on household deleveraging: households misbehaved, have learned the error of their ways, and will henceforth tread gingerly around credit. There is undoubtedly some truth to this, just as the generation that lived through the Great Depression proved enduringly thrifty. This would argue for yet more deleveraging.

However, we suspect household deleveraging has been the result of rather more practical considerations. Moreover, many of the constraints are now fading:

1) Bolstered confidence

Deleveraging is in part an expression of pessimism by households. Signalling a break from this attitude, consumer confidence has now reached its highest level since the onset of the financial crisis (Exhibit 16), and continues to rise.

2) Passive deleveraging slows

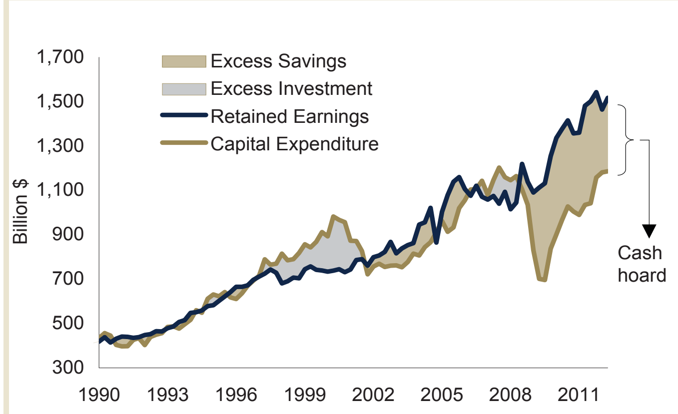
A significant share of household deleveraging in recent years was anything but a conscious choice. On the contrary, the large number of home foreclosures were a form of passive deleveraging, in which affected households saw their mortgages (a liability) along with their homes (an asset) stripped from them. Corroborating this, those who defaulted on their mortgage went through an average of five times more deleveraging than the rest of the population. Foreclosures persist, but as household delinquency rates fall (Exhibit 17) and home prices rise, this form of passive deleveraging should subside with time.

3) Credit burden lightening

Prior to the financial crisis, households dedicated an unusually large fraction of their income to servicing debt – a classic sign of excess leverage (Exhibit 18). Today, thanks to ultra-low interest

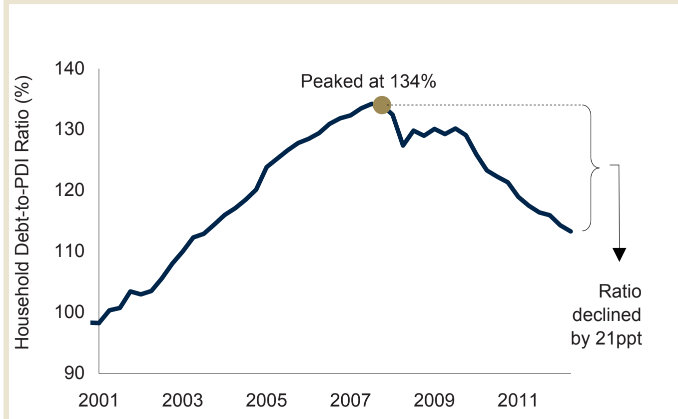
[2] This includes home foreclosures, an involuntary form of asset sale and debt repayment.

Exhibit 12: U.S. Corporate Savings Exceed Investment



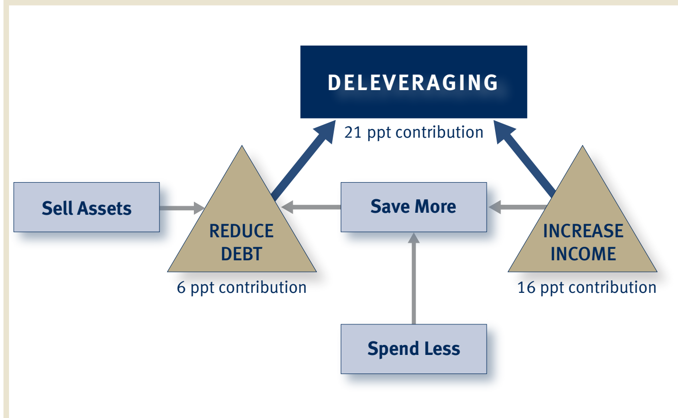
Source: Federal Reserve Board, Haver Analytics, RBC GAM

Exhibit 13: Household Deleveraging Now Underway



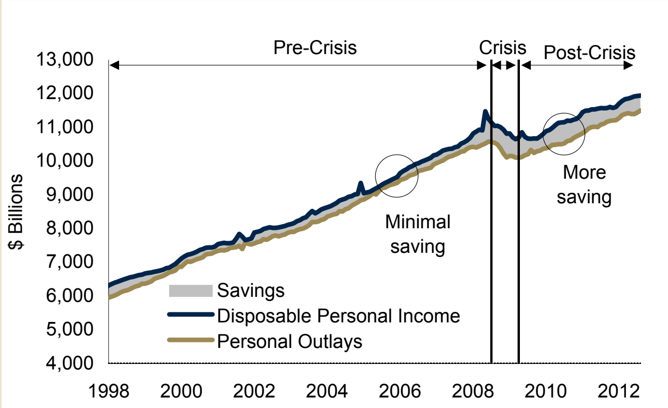
Source: Federal Reserve Board, RBC GAM

Exhibit 14: Deleveraging Mechanism



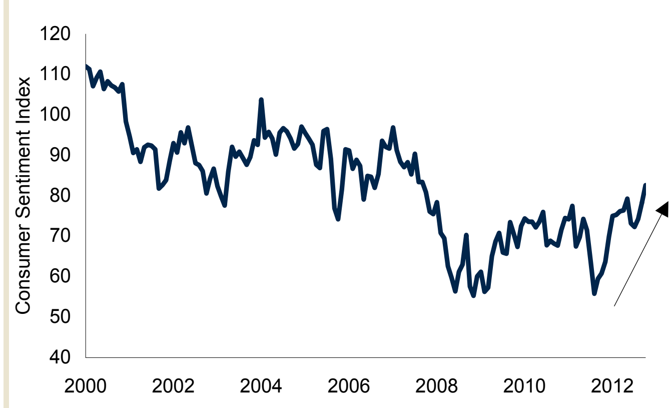
Note: U.S. Deleveraging from Q3 2007 to Q2 2012. Figures do not sum due to rounding.
Source: RBC GAM

Exhibit 15: Household Saving Increased During Crisis



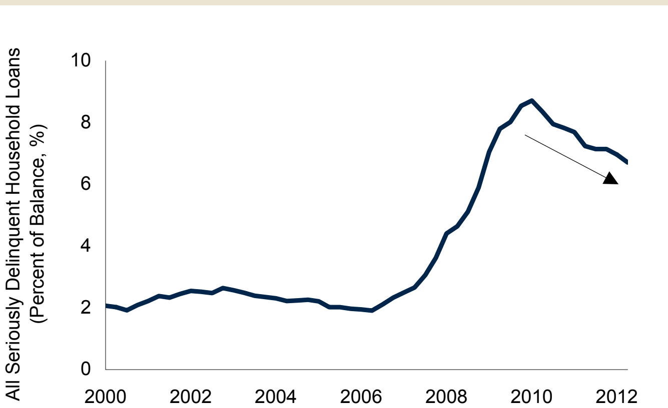
Source: Federal Reserve Board, Haver Analytics, RBC GAM

Exhibit 16: Consumer Confidence Is Highest in Years



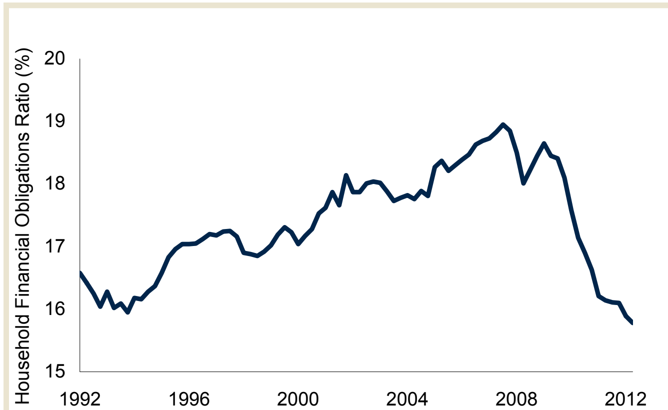
Source: University of Michigan, RBC GAM

Exhibit 17: Falling Delinquency Rates Permit Rising Lending



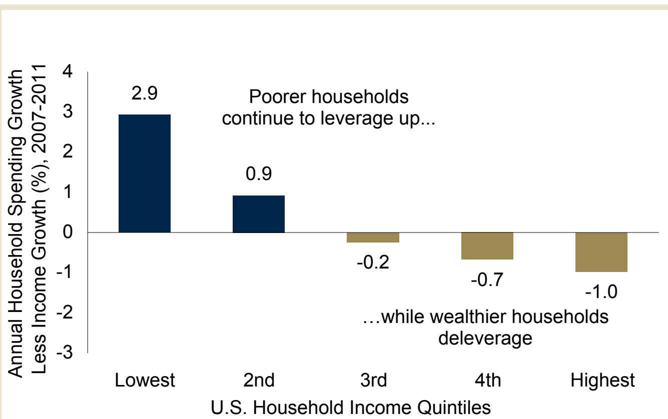
Note: Delinquent loans that are at least 90 days late.
Source: FRBNY, RBC GAM

Exhibit 18: U.S. Households Least Burdened by Debt in Decades



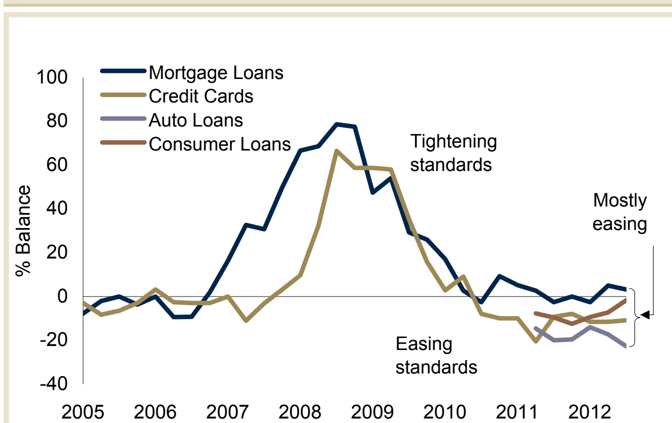
Note: Household financial obligations include mortgage payments, credit cards, property tax and lease payments. Source: Haver Analytics, RBC GAM

Exhibit 19: Household Deleveraging Driven by Wealthier Households



Source: Federal Reserve Board, Survey of Consumer Finances, RBC GAM

Exhibit 20: Credit Availability Improving



Source: Senior Loan Officer Opinion Survey, Haver Analytics, RBC GAM rates, declining debt and rising incomes, this burden is now the lightest it's been in decades.[3]

4) Credit availability improving

A key reason for household deleveraging is that banks were unwilling to extend credit as they rebuilt and de-risked their balance sheets.

This hypothesis is substantiated by the fact that the rich have deleveraged much more than the poor, in large part because upper incomes have traditionally had greater access to credit, and thus been more reliant on it (Exhibit 19). The simple withdrawal of credit was a key determinant in imposing deleveraging on households.

Fortunately, banks are becoming incrementally more willing to furnish household credit (Exhibit 20). Demand for credit is also rising. The flow of household credit itself sends very mixed signals, with commercial banks reporting handsome household credit growth, whereas a more comprehensive (but staler) measure that includes other types of lenders still has overall household credit in slight retreat. The latter is depicted in Exhibit 21. At a minimum, auto loans and other forms of non-mortgage consumer credit are rebounding.

Regardless, as asset prices rise and banks loosen their grips, credit should continue to become more plentiful. Households just might prove surprisingly willing to jump back into the credit saddle.

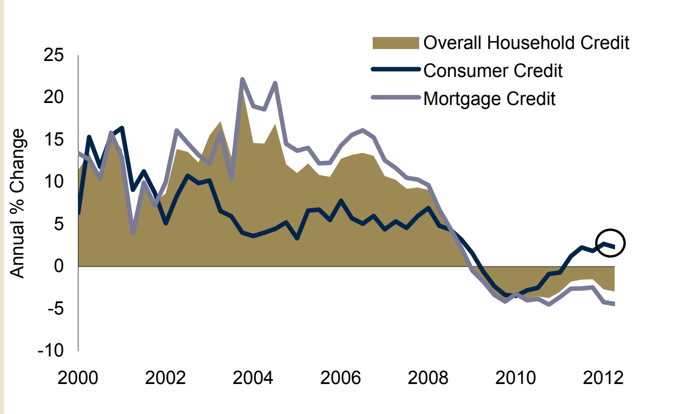
5) Asset prices stop falling

Naturally, there is a tight bond between the asset and debt sides of the balance sheet. Households respond to falling asset prices by hacking away at their debt in an effort to sustain equilibrium between the two. After all, the viability of debt is not just a function of income, but also of the ability to liquidate that debt via asset sales.

At their worst, the stock market chopped $11.1 trillion from household asset valuations, and the housing correction removed another $6.7 trillion. Mercifully, both of these pernicious trends have now reversed. Rising equities have added back $8.1 trillion to U.S. household balance sheets, of which $4.2 trillion has been recovered in just the past two years (Exhibit 22). Home prices have finally turned higher, adding

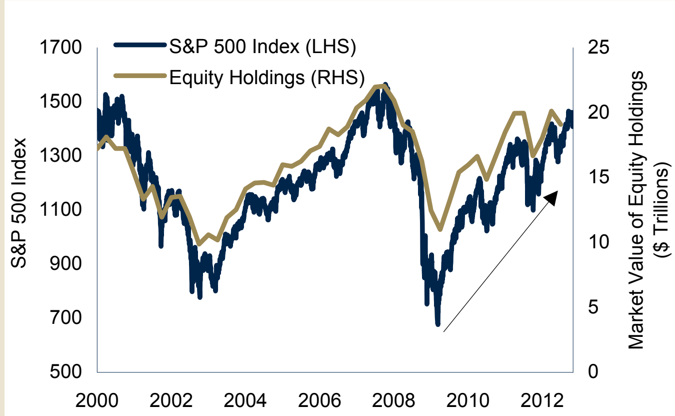
[3] Interest rates cannot remain this low forever, but neither are they likely to rise substantially over the next few years. The American mortgage market operates in a fashion that enables the majority of American mortgage-holders to lock in their current low rates for the life of the mortgage, eliminating reset risk. As such, the credit burden should remain low for a long time.

Exhibit 21: Flow of Household Credit is Mixed



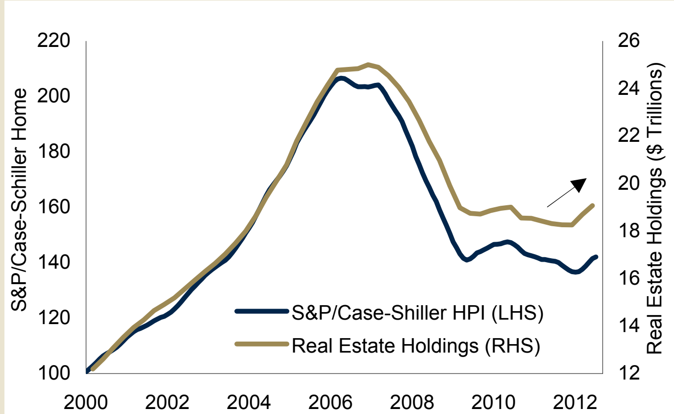
Source: Haver Analytics, RBC GAM

Exhibit 22: Substantial Equity Gains Reduce Deleveraging Pressure



Note: Equity holdings of households and nonprofit organisations.
Source: Federal Reserve Board, Haver Analytics, RBC GAM

Exhibit 23: Home Prices Start Rising, Easing Deleveraging Pressure



Note: Real estate holdings by households and nonprofit organisations.
Source: S&P, Fiserv, MacroMarkets LLC, Federal Reserve Board, RBC GAM

$751 billion to asset ledgers over the past year (Exhibit 23), with the prospect of significantly more to come. In fact, one can map out quite a promising future for home prices via two simple relationships. The National Association of Home Builders (NAHB) housing market index leads construction activity by about nine months (Exhibit 24), and construction activity leads home prices by about six months. The recent trend in home-builder sentiment is such that home prices should continue to rise over the next few years.

More precisely, the value of household assets is still around 6% lower than its peak, despite the material rebound to date. When the third quarter numbers are incorporated into the official figures, they are likely to match up quite well with the 4% decline in household debt (Exhibit 25). This argues the work is essentially done.

Providing further confirmation of a return to normality, the ratio of household-wealth-to-household-income tends to be remarkably stable over time. Despite the decline in asset valuations, wealth is again in line with income (Exhibit 26).

6) Household debt gap closes

Using a variation on the methodology advocated by the Basel Committee on Banking Supervision, we find that U.S. household leverage began to drift away from the normal range in 2000, eventually peaking at 20% to 30% too high. Since then, deleveraging has whittled away virtually the entirety of the excess, leaving household leverage at worst a sliver too high (Exhibit 27).

7) Historical context

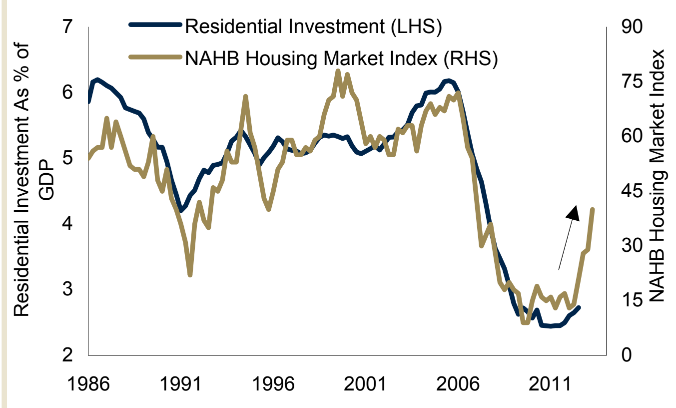
Historical and international context can also provide insight into a reasonable path for household deleveraging. Major bouts of household deleveraging usually span five to six years, with the bulk of the effort over the first three years. Household debt-to-income ratios average a 10-to-15-percentage-point decline, and the absolute level of household debt usually falls by around 5%.

On all fronts, the U.S. household deleveraging episode is broadly in keeping with these historical norms, and is consistent with an imminent end to deleveraging. The U.S. process has lasted for five years so far, total deleveraging is 21 percentage points and the absolute level of debt has declined by 4%.

8) Recent trend

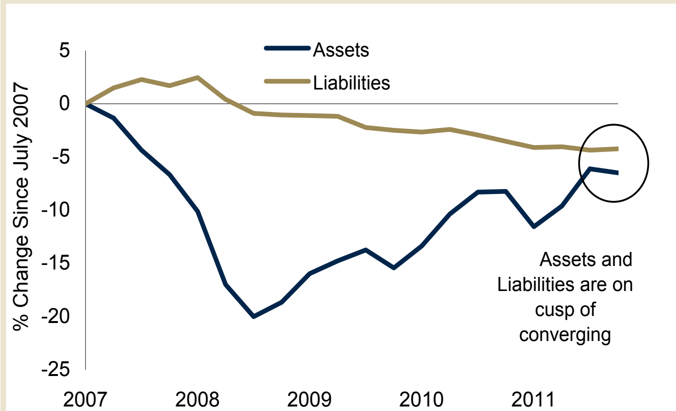
The proof is in the pudding: the rate of household deleveraging has abated significantly over the past year (Exhibit 28), mostly because the personal savings rate is falling.

Exhibit 24: Residential Investment Expected to Rise Next Year



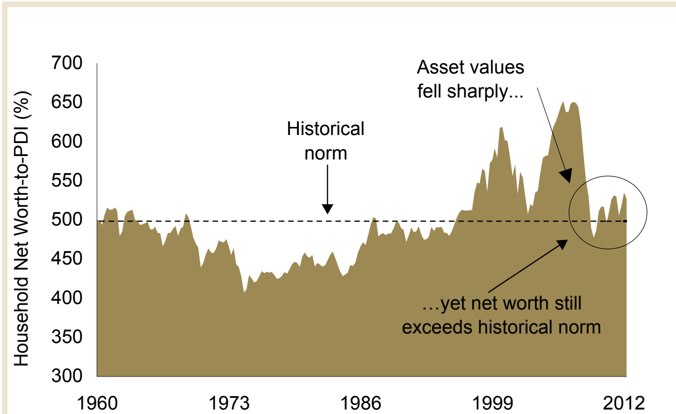
Note: NAHB Housing Market Index leads by 9 months.
Source: Haver Analytics, DB Global Markets Research, RBC GAM

Exhibit 25: Household Assets and Liabilities Back in Alignment



Note: Percentage change of assets and liabilities of households and non-profit organisations since July 2007 when asset value peaked.
Source: Federal Reserve Board, RBC GAM

Exhibit 26: Household Net Worth and Income Back In Alignment



Note: PDI refers to personal disposable income.
Source: Federal Reserve Board, RBC GAM

Household implications

Inevitably – given the nuance of the issue – there are also arguments to be made against the cessation of household deleveraging (Textbox 2). We do not dispute the "cons," but find the "pro" arguments both more voluminous and persuasive (Exhibit 29). Household deleveraging can afford to fade away.

Government deleveraging

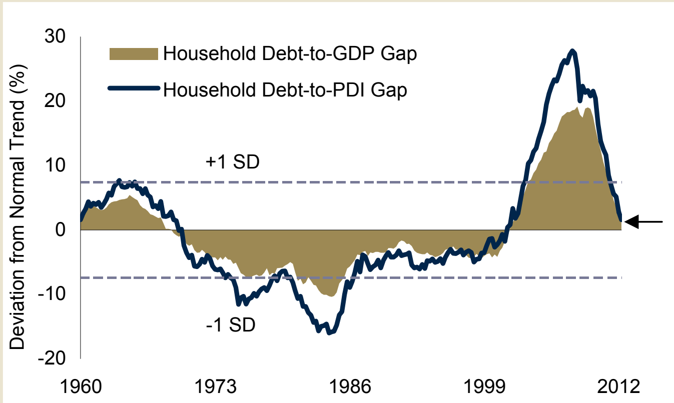
The state of government leverage runs diametrically opposite to the rest of the economy. The debt load is still rising globally, rather than falling (Exhibit 30). One need look no further than the government sector when pondering why the economy-wide debt-to-GDP gap (refer again to Exhibit 4) remains so wide.

While it is conceivable that the U.S. government could have pursued fiscal austerity with greater zeal in recent years, the hesitancy has not solely been a function of political gridlock. In fact, there are theoretically sound reasons for delaying government austerity.

First, it is enormously painful for the private and public sectors to deleverage at the same time. The resulting "double drag" has dire consequences on economic growth. Instead, it is customary for the government to prop up the economy while the private sector deleverages,[4] and only later for the government to undertake its own normalization efforts (Exhibit 31).

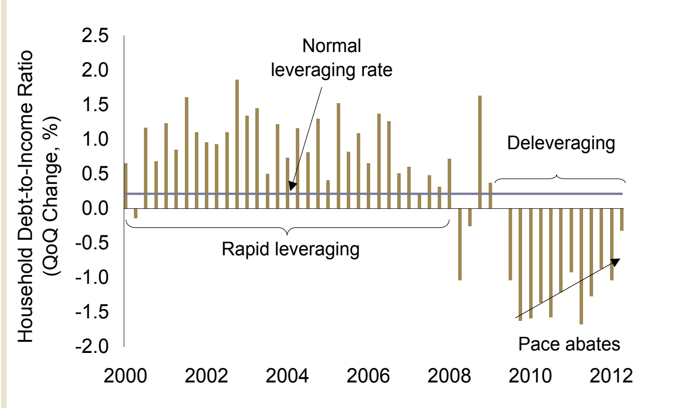
[4] Not all of the deferred government deleveraging is voluntary: much is an automatic consequence of economic weakness, as government revenues swoon and automatic stabilizers kick in.

Exhibit 27: Household Deleveraging Essentially Done



Note: PDI refers to personal disposable income. SD is standard deviation of household debt-to-PDI ratio. Source: Federal Reserve Board, RBC GAM

Exhibit 28: Household Deleveraging Abates



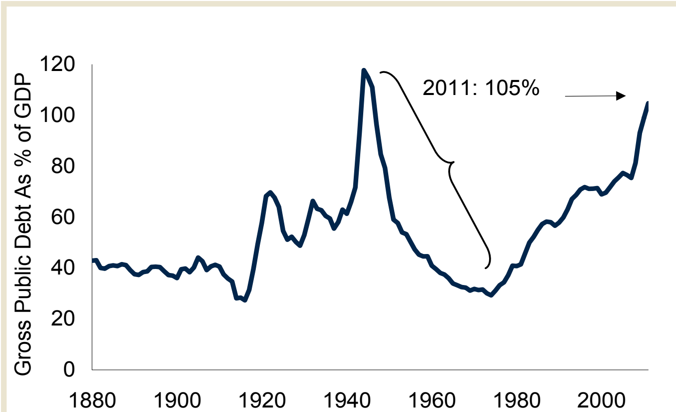
Source: Federal Reserve Board, RBC GAM

Exhibit 29: Can Household Deleveraging End?

PROS	CONS
• Households more confident • Passive deleveraging slows • Credit burden lightening • Credit availability improving • Asset prices stopped falling • Household debt gap closes • Historical context hints deleveraging over • Recent trend shows ebbing deleveraging	• Credit availability still poor on absolute basis • Effective savings rate remains too low • Permanently slower growth could necessitate more deleveraging • Households still traumatized?

Source: RBC GAM

Exhibit 30: Global Government Debt Rising and Near Historic High



Note: 2011 U.S. dollar GDP-weighted average of debt-to-GDP ratios of 34 advanced nations. Source: IMF, RBC GAM

TEXTBOX 2: HOUSEHOLD COUNTERPOINTS

It should be acknowledged that there are several counterpoints to the notion that U.S. household deleveraging is about to end.

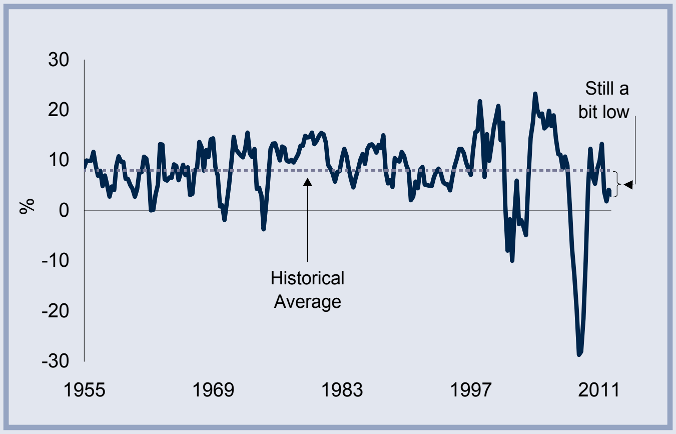
First, credit availability has certainly improved and the flow of household credit is also creeping back, but neither is anywhere near normal.

Second, we calculate that the effective household savings rate remains low (Exhibit C). This refers to the fact that asset prices are not rising quickly enough to compensate for the middling level of the personal savings rate. This may naturally resolve itself as home prices appreciate with greater rapidity, but in the meantime the personal savings rate could struggle to decline, obstructing a consumer resurgence.

Third, it is possible the economy is transitioning to a permanently slower rate of economic growth (and by extension, wage growth) due to worsening demographics and the ebbing of prior tailwinds. If sustainable nominal GDP growth slips from 5% to 4%, this represents a 12% hit to the net present value of future earnings.[5] Households must ultimately repay their debt using future earnings, and so conceivably this realization could motivate household deleveraging to proceed further than conventional models propose.

Fourth, households may be more traumatized by the financial crisis than we realize, and shy away from consumer spending for a longer period of time.

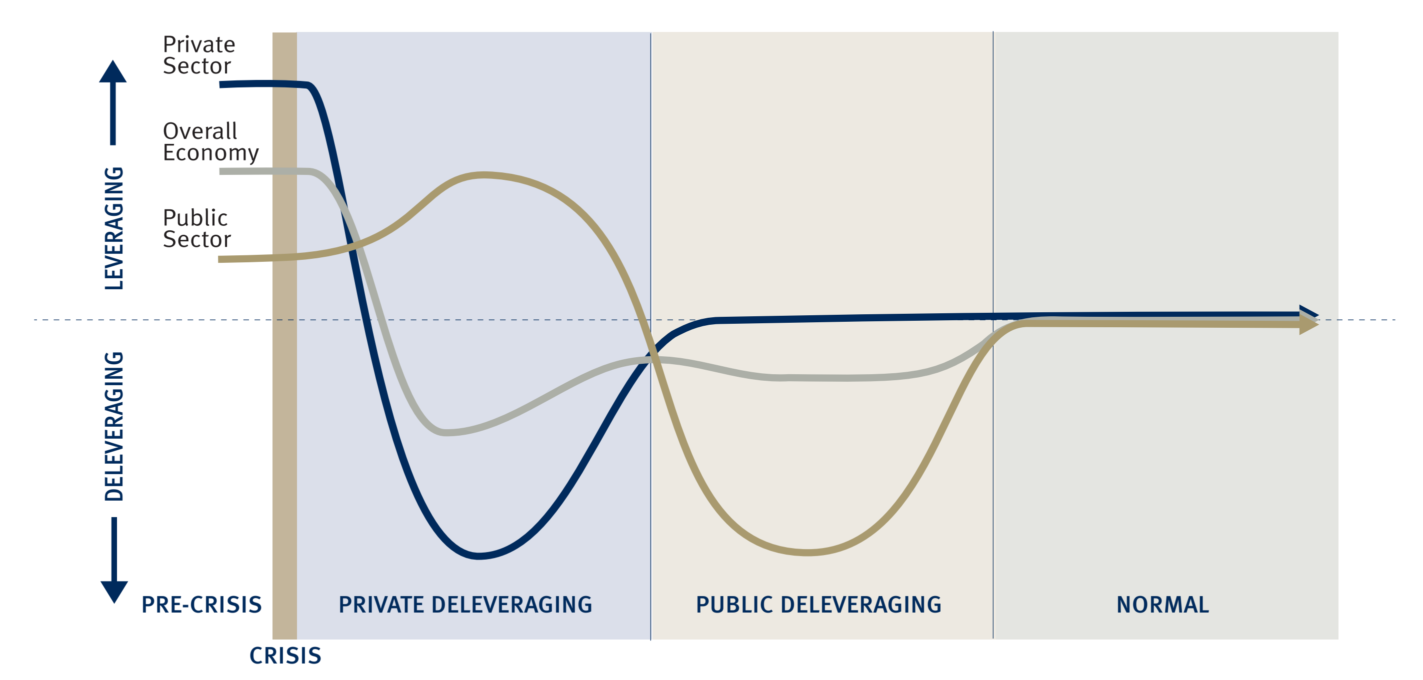
Exhibit C: Effective Personal Savings Rate Still Low



Note: Effective personal savings rate measured as 4-quarter moving average of change in net worth as a percentage of personal disposable income.
Source: Federal Reserve Board, RBC GAM

[5] This assumes that the average American is 40 years old with 25 years left to work, that nominal wage growth expectations decline from 5% to 4% per year, and that the discount rate is 4%.

Exhibit 31: Deleveraging Sequence



Source: RBC GAM

Second, fiscal austerity can be two to three times more painful during recessions than during economic expansions. As such, it makes sense to wait until the economy is stronger before enacting significant austerity measures.

Third, ultra-low interest rates mean that the burden of government debt isn't especially high, even as the absolute debt load increases. So there is no particular urgency to the matter.

Does this mean that Europe has made a horrible mistake by engaging in aggressive simultaneous deleveraging in the private and public sectors? Yes and no. Were it possible, Europe would be advised to slow the rate of fiscal austerity. However, markets are forcing the matter, obviating any choice.

Finally, it is important to distinguish between an outright decline in leverage and decelerating leveraging. Even beleaguered European governments have yet to reach the point of outright deleveraging. Their government debt-to-GDP ratios are still rising. But their feet are churning at a frenetic pace beneath the water's surface as they work to at least reduce the rate at which the debt grows. This is a necessary first step, and an economically painful one.

Economic implications

Economic growth tends to be sluggish for about a decade after a major financial crisis. There are myriad reasons for this, but a central contributor is that deleveraging frequently proves necessary to reverse earlier excesses.

It is thus very encouraging that U.S. private-sector balance sheets may finally be reaching equilibrium. The economy should enjoy a boost as these sectors get back into gear, even if the forward momentum is less than many expect.

Banks are becoming more willing to lend, though it is not clear that we should realistically expect annual credit growth to advance much more quickly than the latest 6% reading.

The business sector could unleash some of its pent-up cash in 2013 as policy uncertainty abates, though a large chunk may remain on the sidelines as businesses continue to focus on their durability and not simply their profitability.

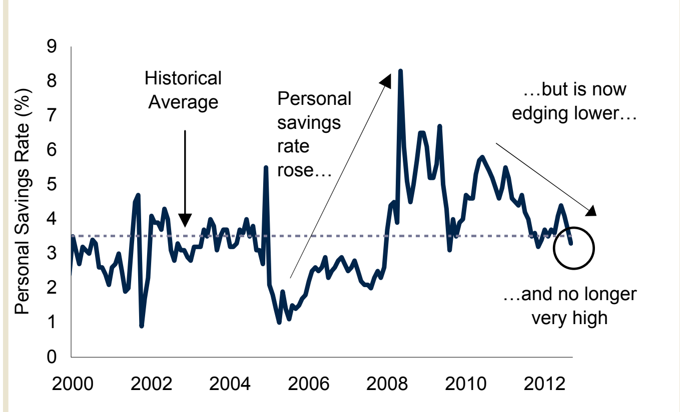
The easiest way to think about the potential upside for household spending is that it will likely come about via a diminished personal savings rate. The personal savings rate has already declined from 5.8% in 2010 to 3.3% today, versus an average of 3.5% since the turn of the millennium and a level of 2.5% that prevailed immediately before the crisis (Exhibit 32). This argues for a helpful – but far from miraculous – addition of up to 1 percentage point to the level of economic output. A surprisingly large part of the consumer revival has already taken place.

Meanwhile, public-sector deleveraging is a more recent phenomenon. Relative to other sectors, governments are slow to start deleveraging, and even slower to complete it. Fiscal austerity cast a notable shadow across economic growth in 2012, and is likely to be slightly greater in 2013, imposing a drag of 1.0 to 1.5 percentage points on GDP. At this rate, the U.S. has at least three to five years more of this sort of fiscal drag before its debt-to-GDP ratio begins to decline, and it will take much longer for it to fall to a desirable level.

Given the brute force of public deleveraging, it may be that one form of economic weakness will just be replaced by another. Possibly. There are, however, two reasons to be cautiously optimistic.

First, it matters that future economic growth – no matter how slow – will be driven to a greater extent by the private sector. This means that consumer spending, business investment and hiring may strengthen. It also fosters a revival of animal spirits that could lead to renewed optimism, entrepreneurship and risk appetite. These may lay the foundation for quicker economic growth somewhere down the road.

Exhibit 32: Personal Savings Rate is Already Falling



Source: Bureau of Economic Analysis, RBC GAM

Second, U.S. public-sector austerity has actually been underway for a few years, whereas some elements of private-sector deleveraging are just now ending. In other words, the economy was temporarily doubly burdened. With the economy back to a single drag, perhaps faster economic growth will be in store.

Put more succinctly, this is an end to deleveraging for the private sector, but merely a beginning for the public sector. Both are relevant, but the former offers more encouragement than the latter does discouragement.

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