

Estimating the Size of U.S. Debt Deflation

by: Kentpaul January 12, 2010 |

So the US economy is highly indebted, what does that mean in basic terms of debt deflation, inflation, output gap, the prospects for 2010 and the currency?

Firstly, the size of the US economy. (Measured US GDP) is around \$14.2 trillion as of September 2009.

Secondly, using the Fed's flow of funds' data, US private sector non-financial debt is \$38.6 trillion. Using the Fed's classifications, for the purposes of this discussion, I split this into 'consumption-based' debt (government and individual) and 'productive asset-based debt' (corporate debt used to finance productive businesses).

The consumption based debt is:

- Federal \$11.5 trillion
- Household \$13.6 trillion
- State and local govt. \$2.3 trillion
- Total \$27.4 trillion
- The debt financing for productive assets is:
 - Corp. businesses \$7.2 trillion
 - Non-corp businesses \$3.6 trillion
 - Farms \$0.2 trillion
 - Total \$11 trillion

I don't have an average financing cost for the \$23.4 trillion of consumption based debt, however with the US 10 year Treasury yielding 3.8% plus using as a rough estimate an average of 2.2% spread (which aims to take into account secured and unsecured lending, shorter and longer duration borrowing plus generally higher interest rates for consumer debt) we could estimate the total interest on consumer debt as:

$\$27.4 \text{ trillion} \times 6\% = \$1.64 \text{ trillion, or } 11.6\% \text{ of GDP}$

So taking the recent US potential output as 100 units of economic activity we have interest payments by consumers (private and government) of 11.6 units. In other words the demand for goods and services in the economy will come in at 11.6 percentage points lower than potential GDP due to the costs of debt service, giving an output gap.

Furthermore with consumption debt at \$27.4 trillion, or 195% of GDP, every 1% increase in average financing cost will divert 1.95% of demand from GDP towards interest payments. Equally for every 1% fall in GDP, the debt to GDP burden will begin to rise exponentially.

In terms of capital formation by businesses, assuming a stable environment, the interest on the outstanding non-financial business debt stands at (using the same interest rate):

\$11 trillion x 6% = \$0.66 trillion or 4.6% of GDP

As such the return on capital for business owners combined with the reinvestment of interest and principal worth 4.6% of GDP will likely more than cover the amount of corporate investment required in the US for the foreseeable future.

In all cases the interest is paid by the borrower to the lender, whether it's a bank depositor or a direct creditor. In either case the provider of the funds is likely to have a high savings rate and is not likely to consume a large part of the interest.

One interesting upshot of this is that as the income from the debt is received by the creditor, assuming the debt is not defaulted on, it needs to be reinvested elsewhere, this combined with emerging market central bank reserve accumulation and the Fed's quantitative easing program perhaps explains how the US Treasury was able to refinance itself in 2009 without upsetting the yield curve and how Japan has been able to finance itself during Japan's debt deflation.

If the output gap, due to consumption-debt interest reducing demand, is 11.6 percent, the question is can the excess output be exported? This is partly how Japan, emerging Asia and Germany have variously gotten round high consumer debt levels or high savings rates.

Unfortunately for America it has run a current account deficit of up to \$200 billion a quarter in recent years and more recently around \$400 billion on an annualised basis. So, detracting \$400 billion from GDP gives a further detraction of 2.8% of demand from US potential output.

So adding these factors together; 11.6 % of incomes going on consumption-based debt interest payments and the current account detracting a further 2.8%; then we have a potential output gap 14.4% of GDP, and for every 1% increase in the financing cost of government and consumer debt, all other things equal, the gap will increase by around 1.95%.

In the period of 2000-2007 the expansion of government and consumer debt inflated the measured level of US GDP via the credit-multiplier and masked the underlying dis-inflationary force of the high interest burden of consumption-debt.

However with the US consumer seemingly starting to pay down their debts it seems the tipping point has now been crossed. If US consumers work/ continue to pay down their debts, by increasing their savings rate, this will further weaken the level of demand in the US for US produced goods and services and create a wider output gap.

On a normalised basis it would not be surprising to see a 7% or 8% savings rate, or possibly higher, compared with a zero savings rate for much of the post-2000 environment. This increase in savings would also in turn reduce demand and add say 7% to the 14.4% in interest and trade deficits output gap taking the total output gap to 21.4%.

An increase in the output gap/ fall in demand by this order of magnitude would further realign asset prices and force a violent purge of the debt in the economy, triggering more job losses, more defaults and more asset price losses until the economy stabilised and then recovered to sustainable levels of activity.

However, as we know, the US government stepped in last year with massive deficit spending of up to 15% of GDP in 2009, to support aggregate demand, while the Fed engaged in quantitative easing to try and lower the cost of interest financing cost for borrowers.

Yet the US government's borrow and spend strategy ultimately only increases the total amount of consumption-debt outstanding. Additionally as borrowers default on their debt the government's solution to this problem has been to guarantee the lenders and nationalize the debt, however the problem with this solution is that the total amount of consumption-debt does not decrease.

Conclusion

With no significant reduction in aggregate debt, and an unsustainable level of government deficit spending, the economy remains highly unstable. If aggregate consumption-credit does not expand at the compound rate of interest of the outstanding debt, then the US economy is left with an output gap and a structurally high unemployment level, which in the US's case they will be unable to fill via increased exports.

As such, the real adjustment in demand/ activity in the US economy does not appear to have really started yet. When it does come it is likely to lead to significant realignment of asset prices and standards of living in the US.

In the end given that the outstanding debt can not practically be repaid it is reasonable to expect a significant purge to occur, at some point, through a deflationary collapse, or given the interventionist nature of politicians and central bankers, in the case of significant money printing, possibly through a currency crisis.

In the meantime I believe that the current stage of the financial crisis is likely to be played out through the currency markets, including precious metals, which will drive increases in the cost of living in the US and then subsequently through the government bond markets, which will likely trigger the ultimate adjustment in the borrow-and-spend economies.