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Is the US Credit Crisis Over?

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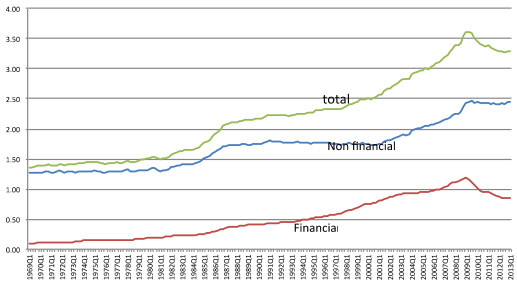
Credit Caused the Crisis

It is well known that Americans indulged on cheap and abundant credit during the last decade and it led many households to acquire more assets than they could afford. Debt service ratios soared and household liabilities climbed well above their disposable personal income. This debt to income ratio reached a threatening proportion of 134% in Q4 2007.

Financial institutions were also to blame for engaging in lax lending standards, securitizing their unworthy liabilities in complicated transactions, and distributing them globally to naive and careless investors. Federal fiscal oversight was equally negligent, relying upon presumed market discipline to expose, and then rein in the credit bubble. It didn't. After nearly two years of recession, and almost four years of lackluster cyclical recovery, the economy has by most measures just climbed back to where it was before the debacle. However, is economic growth finally ready to accelerate above its recent meager pace and ascend up to its past growth rates?

Ratio of Debt to NGDP Declined



Total debt levels have stabilized

The most important measure of leverage in an economy is the ratio of total debt to nominal GDP (NGDP). As shown in chart 2, total debt soared to more than 3.6x NGDP, a quite threatening and unsustainable level in 2008 as the debt crisis unfolded. This ratio has subsequently slid down to a relatively high 3.3% in Q1 2013. Some perspective on this ratio is necessary to gain insight into its present high level. From 1952 through 1980, this ratio averaged 1.5% of NGDP, less than half its current

level. In two periods, the ratio climbed significantly; in the mid-1980's and again in the mid 2000's, both being periods of financial deregulation.

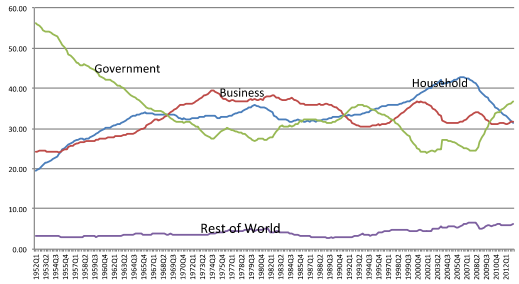
Total debt is comprised of two components: non-financial and financial. During these two periods, non-financial companies substantially raised the leverage in their balance sheets to take advantage of abundant and relatively cheap credit. The financial component grew more evolutionary over the past 50 years as financial institutions took advantage of deregulation and became more numerous, sophisticated and engaged in riskier endeavors.

In the past few years non-financial companies maintained their debt ratios in spite of the extremely low and abundant credit because their profitability was extremely high and they didn't need external financing to fund new ventures. In contrast, financial firms de-leveraged. Some went bankrupt, others wrote off copious quantities of bad debt, and many raised their lending standards. Consequently, all of the improvement in the debt to NGDP ratio was achieved by the financial sector.

The big shift to the public sector

Although the non-financial sector has maintained its leverage ratio over this economic expansion period, there has been a significant and important shift in the debt burden from the household sector to the government sector over the past 4 years. The public sector's share of the total non-financial debt expanded to 36.7% in Q1 2013, up from just 24.4% at the end of 2007. In contrast the household sector's

Debt Shifts from Households to Government



Sector Debt as a Percent of total debt

share of total debt fell from 42.5% to 31.5% as households paid down some of their debt, or defaulted mainly on mortgage debt. The business sector's share declined modestly over the same period. The chart clearly reveals the extent of support that the public sector had to take on as a result of failing companies and households in the post-debt crisis era so as to prevent a greater catastrophe from occurring.

The Fed Prevents Crowding out

In the past 5 ¼ years, the public debt soared by 132%. This enormous increase in public debt would normally have crowded out private sector borrowing. Instead, there was a vast decline in Interest rates throughout this period, and a significant compression in private sector quality spreads to the cost of government borrowing. There was no evidence of

crowding out of the private sector during these years for two critical reasons.

First, the household sector was busy reducing its leverage, either voluntarily or involuntarily, and the financial sector was writing off US$2.2 trillion of bad debts. Total non-federal government debt actually declined by US$1.1 trillion dollars.

Second, the Federal Reserve engaged in a massive campaign of buying Federal debt and the mortgage-backed securities of the federal agencies. The Fed purchased approximately US$3 trillion dollars of debt during this period.

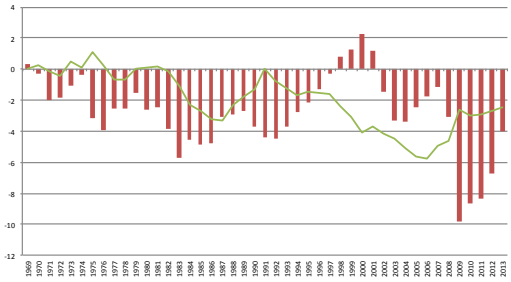
Money Flows Abroad

Not only was there no crowding out of private sector debt during this period, but there was also no inflation after the profuse buying of debt by the Federal Reserve. Inflation decelerated down to below 2% over this period. Money creation simply flowed out of the US, and mainly into emerging markets where it inflated many asset values throughout Asia.

The Twin Deficits Are Shrinking

Another aspect of the huge rise in leverage in the US during the past decade was the surge in the national debt and in the US current account deficit. Both of these deficits relative to NGDP rose beyond sustainable levels. They rivaled levels that in an emerging market country would have provoked a currency crisis and a balance of payments issue. The twin deficits relative to NGDP ascended to nearly 10% in 2009 (Federal deficit) and 6% in 2006 (current account deficit). They have since retreated to more sustainable levels and are expected to decline further in the coming years.

US Twin Deficits Improving

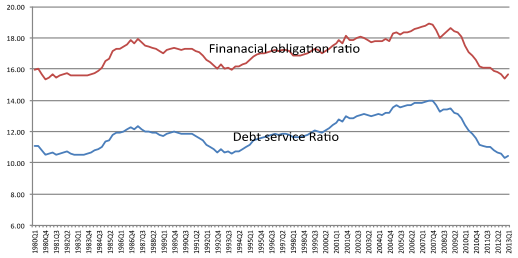


Households improved their debt position

The household debt buildup was the major cause of the crisis and has been the biggest impediment to a typical robust recovery. Therefore, economic growth will only accelerate if the household sector's balance sheet is normalized.

There are several incisive analytic measures, which demonstrate that the household balance sheet has improved significantly since the extreme leverage days of 2008. Most impressive is the improvement in the debt service ratio and the companion financial obligations ratio. Both measures of household debt repayment ability have decreased significantly from certain repayment risk to levels that equaled their lowest points achieved in the 1980-1982 twin recessions.

HH Financial Obligations fall Back to 1980's Recession Levels

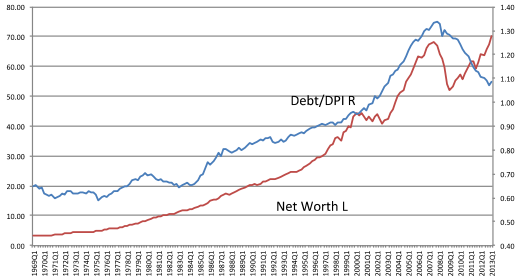


A second important yardstick is the ratio of household liabilities to disposable personal income. This ratio jumped up to unsustainable heights in 2013 and has since dropped down to 109%, a level commensurate with that in 2003 just before the last debt buildup rose to unsustainable heights. The improvement came because households reduced their indebtedness by almost $1 trillion since the peak of the crisis and disposable income grew 15.3% in the present expansion.

Debt structures remain vulnerable

Debt levels in most sectors of the economy have either declined, or decreased relative to income or NGDP over the past few years compared to the dangerous levels experienced at the top of the debt crisis.

Household debt income Ratio Improved; Remains Historically High



However, a number of critical debt/income ratios at the household sector and national total remain at relatively high levels compared with their long-term trends. At a minimum this suggests that an increase in leverage will not be available, or economically healthy to fuel an acceleration in economic growth as it did in past business cycle expansions when debt levels were much smaller. A rapid increase in household leverage from present levels would quickly lead to another credit crisis. This risk to increased leverage creates a substantial hurdle for the Federal Reserve to absorb the excess liquidity that it created during the past few years before it becomes engaged. Consequently, the US economy will continue to be constrained to grow at rates well below historical norms* for several years into the future as leverage ratios slowly recede.

*The long-term average annual rate of growth in the post-war period has been 3.6% up until 2007. In contrast, economic growth in the present expansion has averaged 2.2%.

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	KEY INDICATORS TABLE (AS OF 15 September 2013)							
INDEX	**LEVEL (LC)**	**%1MO (LC)**	**%1MO (USD)**	**%1YR (LC)**	**%1YR (USD)**	**INDEX**	**LEVEL**	**%1YR**
S&P500	1632.97	-2.90%	-2.90%	19.30%	19.30%	3MO LIBOR	0.26	-38.32
FTSE	6412.93	-2.38%	-0.45%	16.95%	14.65%	10YR UST	2.78	71.50
NIKKEI	13388.86	-1.98%	-1.87%	52.00%	21.58%	10YR BUND	1.86	40.39
HANG SENG	21731.37	-0.43%	-0.43%	15.17%	15.19%	10YR SPG	4.54	-31.19
STI	3028.94	-4.96%	-4.99%	3.81%	2.05%	10YR SGS	2.67	91.84
EUR	1.32	-0.60%		5.73%		US ISM	55.70	9.70
YEN	98.17	0.30%		24.85%		EU PMI	51.40	14.30
CMCI	1477.75	2.83%		-7.07%		JP TANKAN	-2.00	50.00
Oil	107.65	2.49%		13.77%		CHINA IP	10.40	5.40

Source: Bloomberg

APPENDIX

GLOSSARY OF KEY TERMS (Source: Bloomberg, with tickers in parenthesis. In US$ where applicable)
S&P500: capitalization-weighted index of the prices of 500 US large-cap stocks (SPX)
FTSE: capitalization-weighted index of the prices of the 100 largest LSE-listed stocks (UKX)
NIKKEI: capitalization-weighted index of the largest 225 stocks of the Tokyo Stock Exchange (NKY)
HANG SENG: capitalization-weighted index of companies from the Hong Kong Stock Exchange (HSI)
STI: cap-weighted index of the top 30 companies listed on the Singapore Exchange (FSSTI)
EUR: USD/EUR exchange rate: 1 EUR = xx USD (EUR)
YEN: YEN/USD exchange rate: 1 USD = xx YEN (JPY)
CMCI: Constant Maturity Commodity Index (CMCIPI)
Oil: West Texas Intermediate prices, $ per barrel (CLK1)
3MO LIBOR: interbank lending rate for 3-month US dollar loans (US0003M)
10YR UST: 10-year US Treasury yield (IYC8 – Sovereigns)
10YR BUND: 10-year German government bond yield (IYC8 – Sovereigns)
10YR SPG: 10-year Spanish government bond yield, proxy for EU funding problems (IYC8 – Sovereigns)
10YR SGS: 10-year Singapore government bond yield (IYC8 – Sovereigns)
US ISM: US business survey of more than 300 manufacturing firms by the Institute of Supply Management that monitors employment, production inventories, new orders, etc. (NAPMPMI)
EU PMI: Purchasing Managers' index for the 17-country EU region (PMITMEZ)
JP TANKAN: Bank of Japan business survey on the outlook of Japanese capital expenditures, employment and the overall economy, quarterly index (JNTGALLI)
CHINA IP: China's Industrial Production index, with 1-month lag (CHVAIOY)
LC: Local Currency