U.S. and Eurozone Total Debt Outstanding as % GDP quarterly

U.K. and U.S. Total Debt as a % of GDP

quarterly

Canada and U.S. Total Debt as a % of GDP

quarterly

Japan: Total, Government, and Private Debt as a % of GDP, 1990 - 2011

annual


Australia and U.S. Total Debt as a % of GDP

quarterly

Debt and Economic Activity: Conventional vs. New View

Beginning with Irving Fisher (1933) and A. G. Hart (1938), there is literature on the macroeconomic role of inside debt. Hyman Minsky (1977) and Charles Kindleberger (1978) have in several places argued for the inherent instability of the financial system, but in doing so have had to depart from the assumption of rational economic behavior. Footnote: I do not deny the possible importance of irrationality in economic life; however, it seems that the best research strategy is to push the rationality postulate as far as it will go.


“The evidence is more consistent with the view that problems related to household balance sheets and house prices are the primary culprits of the weak economic recovery. King (1994) provides a detailed discussion of how differences in the marginal propensity to consume between borrowing and lending households can generate an aggregate downturn in an economy with high household leverage. This idea goes back to at least Irving Fisher’s debt deflation hypothesis (1933).”

Federal Reserve Bank of San Francisco Economic Letter January 2011. Atif Mian University of California Berkeley, Haas School of Business and Amir Sufi, University of Chicago Booth School of Business.

“When a country’s gross government debt rises above 90% of GDP, the median growth rates fall by one percent, and average growth falls considerably more.”

Growth in the Time of Debt, NBER, Kenneth Rogoff and Carmen Reinhart.

“Debt is a two-edged sword. Used wisely and in moderation, it clearly improves welfare. But, when it is used imprudently and in excess, the result can be a disaster. For individual households and firms, overborrowing leads to bankruptcy and financial ruin. For a country, too much debt impairs the government's ability to deliver essential services to its citizens.” Debt turns cancerous when it reaches 80-100% of GDP for governments, 90% for corporations and 85% for households.

# Debt and Other Economic Components to GDP: China vs. U.S., 2011

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. officially reported government debt to GDP</td>
<td>16.3%</td>
<td>99%</td>
</tr>
<tr>
<td>2. mid range estimates of hidden liabilities</td>
<td>74.0%</td>
<td>n/a</td>
</tr>
<tr>
<td>3. total debt including mid range estimates of hidden liabilities</td>
<td>90.3%</td>
<td>n/a</td>
</tr>
<tr>
<td>4. high end estimates of hidden liabilities</td>
<td>144.0%</td>
<td>n/a</td>
</tr>
<tr>
<td>5. total debt including high end estimates of hidden liabilities</td>
<td>160.0%</td>
<td>99%</td>
</tr>
<tr>
<td>6. personal consumption expenditures as a % of GDP</td>
<td>30.0%</td>
<td>71%</td>
</tr>
<tr>
<td>7. investment as a % of GDP</td>
<td>70.0%</td>
<td>16%</td>
</tr>
<tr>
<td>8. China’s growth target for 2012</td>
<td>7.5%</td>
<td>n/a</td>
</tr>
</tbody>
</table>

*Source: Forbes, Economist, Mckinsey Global Institute, Bureau of Economic Analysis.*
Is the Chinese Growth Model Flawed and Fragile?

“...The fact that it is well-insulated from outside markets does not mean that China's finances are crisis-proof. The system can be disrupted by purely internal factors, as it clearly has been in the past.”


Utilizing micro- and macroeconomics as well as psychology, biology (contagion), and politics a model is developed to identify booms that bust. This framework applies to recent as well as distant boom/busts. "Although China appears to be in the midst of an unsustainable boom, the timing of a bust is extraordinarily difficult to predict."


China's growth is in danger of decelerating rapidly and without much warning. A sharp slowdown could deepen problems in the Chinese banking sector. Without appropriate fiscal reforms, many of the other reform elements of the new development strategy would be difficult to move forward.

4 Archetypes of the Deleveraging Process

1. “Belt Tightening”. The most common deleveraging path. Episodes where the rate of debt growth is slower than nominal GDP growth, or the nominal stock of debt declines. Examples are Finland 91-98, Malaysia 98-08, U.S. 33-37, S. Korea 98-00.

2. “High Inflation”. Absence of strong central banks, often in emerging markets. Periods of high inflation mechanically increase nominal GDP growth, thus reducing debt/GDP ratios. Examples are Spain 76-80, Italy 75-87, Chile 84-91.

3. “Massive Default”. Often after a currency crisis. Stock of debt decreases due to massive private and public sector defaults. Examples are U.S. 29-33, Argentina 02-08, Mexico 82-92.

4. “Growing out of debt”. Often after an oil or war boom. Economies experience rapid (and off-trend) real GDP growth and debt/GDP decreases. Examples are U.S. 38-43, Nigeria 01-05, Egypt 75-79.

Saving Rate

monthly

M2 Money Multiplier and the Monetary Base

monthly

Source: Federal Reserve. Through February 22, 2012. M2 through Feb. 20. (Multiplier is ratio of M2 to the monetary base.) The money multiplier or m is determined by the currency, time deposit, Treasury deposit and excess reserve ratios.
## Balance Sheet Impact of Fed’s Stealth Easing vs. QE1 and QE2

*millions $*

<table>
<thead>
<tr>
<th></th>
<th>QE1 Change</th>
<th>No QE</th>
<th>QE2 Change</th>
<th>No QE</th>
<th>QE3 (SWAP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Securities held outright at the Fed</td>
<td>1,525,612</td>
<td>26,421</td>
<td>600,000</td>
<td>-24,260</td>
<td>0</td>
</tr>
<tr>
<td>2. Central Bank Liquidity Swaps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>105,414</td>
</tr>
<tr>
<td>3. Average monthly change</td>
<td>84,756</td>
<td>3,774</td>
<td>75,000</td>
<td>-4,852</td>
<td>26,353</td>
</tr>
</tbody>
</table>

Source: Federal Reserve.
## QE1, No QE and QE2: Critical Market Values
### Positive Responders to Inflation/Risk

<table>
<thead>
<tr>
<th></th>
<th>QE1 Change</th>
<th>No QE</th>
<th>QE2 Change</th>
<th>No QE</th>
<th>QE3 (SWAP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. S&amp;P 500</td>
<td>36.4%</td>
<td>-9.0%</td>
<td>24.1%</td>
<td>-5.6%</td>
<td>9.1%</td>
</tr>
<tr>
<td>2. Dow Jones Global Stock Index</td>
<td>48.4%</td>
<td>-8.0%</td>
<td>22.4%</td>
<td>-12.7%</td>
<td>9.8%</td>
</tr>
<tr>
<td>3. Gasoline</td>
<td>30.3%</td>
<td>-8.6%</td>
<td>36.8%</td>
<td>-5.5%</td>
<td>19.3%</td>
</tr>
<tr>
<td>4. 10-year break even yield</td>
<td>1.1%</td>
<td>-1.5%</td>
<td>1.0%</td>
<td>-0.6%</td>
<td>0.5%</td>
</tr>
<tr>
<td>5. Dollar (DXY)</td>
<td>-4.6%</td>
<td>2.3%</td>
<td>-10.4%</td>
<td>5.5%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

M2 Money Stock
3 and 6 month % change, a.r. and y-o-y % change

M2 Money Stock

annual % change

Cumulative decline in Great Depression = 31%

Avg. = 6.6%

Sources: Federal Reserve Board. Bureau of Labor Statistics;
Monetary Statistics of the United States. Through February 20, 2012. (Last plot is 4 weeks ending Jan. 30 vs. same period a year ago.)
Velocity of Money 1900-2011

Equation of Exchange: GDP(nominal) = M*V

Sources: Federal Reserve Board; Bureau of Economic Analysis; Bureau of the Census; Monetary Statistics of the United States. Through Q4 2011.
Q4 2011; V = GDP/M, GDP = 15.3 tril, M2 = 9.6 tril, V = 1.59
Composition of $15.3 Trillion GDP in Q4 2011

- Federal Outlays: 23.8%
- Non-federal: 76.2%
- ($3.6 trillion)
Federal Surplus/Deficit as a % of GDP

_fiscal year, 3 year average_

Avg. annual revenues as a %
GDP = 15.8%
3 yr. avg. ending 2011 = 15.0%

Avg. annual outlays as a %
GDP = 19%
3 yr. avg. ending 2011 = 24.1%

Avg. annual surplus/deficit as a %
GDP = -3.2%
3 yr. avg. ending 2011 = -9.1%

3 year sum = 27.3%

Sources: Congressional Budget Office. Through Q3 2011.
Federal Outlays Toward 40% of GDP?

Dr. Barry Eichengreen of the University of California at Berkeley estimates that after 2015 federal outlays as a percent of GDP are headed to 40% over the next quarter century without major structural reforms in Social Security and Medicare. For Dr. Eichengreen this means that the current law cannot remain unchanged in spite of the lack of political will to deal with the issue.

“The United States will suffer the kind of crisis that Europe experienced in 2010, but magnified. These events will not happen tomorrow. But Europe’s experience reminds us that we probably have less time than commonly supposed to take the steps needed to avert them. Doing so will require a combination of tax increases and expenditure cuts.” He goes on to point out that, “At 19 percent of GDP, federal revenues are far below those raised by central governments in other advanced economies with spending on items other than health care, Social Security, defense and interest on the debt having shrunk from 14 percent of GDP in the 1970s to 10 percent today, there is essentially no non-defense discretionary spending left to cut. One can imagine finding small savings within that 10 percent, but not cutting it by half or more in order to close the fiscal gap.”

Gross Federal Debt as a % of GDP

annual

$59.1 trillion = Unfunded Social Security and Medicare liability
394% = Unfunded liabilities as a % of GDP

U.S. Debt as a % of GDP

including gross federal debt
annual

Unfunded Government Pension Liabilities in Europe

In 2009, the ECB commissioned a report of the unfunded state sponsored pension plan liabilities in 19 of the 27 EU member countries, with 11 members in the Euro currency zone and 8 non currency zone members. The starting point for the data in the study is 2006. Based on that stipulation, the unfunded liabilities of the 19 EU member countries were about five times their GDP, which is where the US stood according to a study with the staring point five years later in 2011.

Source: Pension obligations of government employer pension schemes and social security pension schemes established in EU countries - Final Report, Research Center for Generational Contracts, Freiburg University, By order of the European Central Bank
Christoph Müller, Bernd Raffelhüschen, Olaf Weddige, January 2009
# U.S. Federal Budget

*(billions of dollars)*

<table>
<thead>
<tr>
<th>Description</th>
<th>2011</th>
<th>2012</th>
<th>change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Federal deficit (through Feb.)</td>
<td>$ (641)</td>
<td>$ (581)</td>
<td>$ 60</td>
</tr>
<tr>
<td>2. Federal deficit (full year)</td>
<td>$ (1,299)</td>
<td>$ (1,239)</td>
<td>$ 60</td>
</tr>
<tr>
<td>3. Federal expenditures (through Feb.)</td>
<td>$ (1,510)</td>
<td>$ (1,474)</td>
<td>$ 36</td>
</tr>
<tr>
<td>4. Federal expenditures (full year)</td>
<td>$ (3,601)</td>
<td>$ (3,565)</td>
<td>$ 36</td>
</tr>
<tr>
<td>5. Federal revenues (through Feb.)</td>
<td>$ 869</td>
<td>$ 893</td>
<td>$ 24</td>
</tr>
<tr>
<td>6. Federal revenues (full year)</td>
<td>$ 2,305</td>
<td>$ 2,281</td>
<td>$ 24</td>
</tr>
<tr>
<td>7. Federal income tax revenues (through Feb.)</td>
<td>$ 423</td>
<td>$ 425</td>
<td>0.5%</td>
</tr>
<tr>
<td>8. Federal income tax revenues (through Feb.) adjusting for Feb 29, $/day</td>
<td>$ 2.801</td>
<td>$ 2.796</td>
<td>-0.2%</td>
</tr>
</tbody>
</table>

*source: Haver Analytics*