Large Budget Deficits, High Levels of Government Debt - A Force for Lower Interest Rates

by Lacy H. Hunt, Ph.D., Chief Economist
Hoisington Investment Management Co.

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Gross Federal Debt as a % of GDP (Excluding Off Balance Sheet Liabilities)

**quarterly**

Federal Debt as a % of GDP

**Gross Federal Debt as a % of GDP**

- Debt = 19.3 tril.
- GDP = 18.4 tril.
- Debt/GDP ratio 104.9%

Net present value of unfunded liabilities = $60 trillion in excess of Social Security and other trust funds.

Six Considerations Indicate Federal Finance Will Produce Slower Growth

1. The government expenditure *multiplier is already negative.*

2. The composition of the spending suggests the multiplier is likely to *trend even more negative.*

3. The federal debt-to-GDP ratio moved above the deleterious 90% level in 2010 and has stayed above it *for more than five years,* a time span in which research shows the constriction of economic growth to be particularly severe. It will continue to move substantially further above the 90% threshold as debt suppresses the growth rate.

4. Debt is likely to restrain economic growth in an increasingly *nonlinear fashion.*

5. The first four problems produce a *negative spiral* from federal finance to the economy through the allocation of saving, productive investment, productivity growth and eventually to demographics.

6. The policy makers force themselves into a downward spiral when they rely on more debt in order to address poor economic performance. More of the same does not produce better results, only more of the same but worse, a situation we term a *policy trap.*
Bibliography of Government Expenditure Multiplier Studies


Japan Births

annual

1989 = 163,900
2015 = 83,804
-19.3% decline


U.S. Birth Rate

Births/1000 Population, annual

1990 = 16.7
2014 = 12.5


Japan: Productivity: Output per Employed Person

annual % change

1989 = 3.3%
2015 = .20%


Japan: Household Gross Saving Rate

annual

1989 = 26.6%
2014 = 5.6%

United States: Debt as % of GDP and 30 year Government Bond Yield


Japan: Debt as % of GDP and 30 year Government Bond Yield


United Kingdom: Debt as % of GDP and 10 year Government Bond Yield


Euro Area: Debt as % of GDP and 10 year Government Bond Yield

Correlation Coefficients Between Gross Government Debt to GDP and Long Term Government Bond Yields in Four Major Economic Areas 1998-2016

<table>
<thead>
<tr>
<th></th>
<th>Correlation Coefficients</th>
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<tbody>
<tr>
<td>(A)</td>
<td>(B)</td>
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<tr>
<td>1. U.S.</td>
<td>-0.95</td>
</tr>
<tr>
<td>2. Euro Area</td>
<td>-0.85</td>
</tr>
<tr>
<td>3. Japan</td>
<td>-0.80</td>
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<tr>
<td>4. United Kingdom</td>
<td>-0.94</td>
</tr>
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Source: HIMCO.
Total Nonfinancial Debt as a % of GDP
(Excluding Off Balance Sheet Liabilities)

year ending levels

Change in Debt per $ of GDP:
- 1952-1999: $1.7
- 2000-2015: $3.3
- Q1 2015-Q1 2016: $4.4
- Q2 2015-Q2 2016 (est.): $5.5

Q1 2015 - Q1 2016
Debt: +$2.19 tril.
GDP: +$.5 tril.

Q2 2015 - Q2 2016 (est.)
Debt: +$2.4 tril.
GDP: +$.44 tril.

Business Debt as a % of GDP  
(Excluding Off Balance Sheet Liabilities) 

quarterly 

Bibliography of Debt Studies Post 2009


Characteristics of Extremely Over-Indebted Economies

1. Growth is abnormally weak. Transitory spurts in economic growth, inflation and high-grade bond yields cannot be sustained because debt constrains economic activity.

2. Due to debt repayment obligations, economies are subject to structural downturns without the cyclical excesses of rising interest rates and inflation.

3. Deterioration in productivity is not inflationary but just another symptom of the debt overhang.

4. Traditional monetary and fiscal policy actions are asymmetric. They can restrain but not stimulate growth. Fiscal policy options exist provided they do not increase aggregate indebtedness.

5. Inflation falls dramatically, increasing the risk of deflation.

6. Treasury bond yields fall to extremely low levels and remain depressed for an extended period since the Fisher equation (1867-1947) states that the long risk-free yield is equal to the real yield plus expected inflation.

7. When multiple major economies are simultaneously over-indebted, the world lacks an engine of growth.

8. Indebtedness problems cannot be solved with more debt and if that is the course, the first seven symptoms will not only persist, they will worsen. Historically, debt overhangs in major economies have only been cured by a significant multi-year rise in saving of which different ways can achieve this result.

9. During periods of prolonged over-indebtedness, demographics may deteriorate reinforcing the negative influences of the first eight characteristics.
Nominal GDP, Y
year over year % change, quarterly


Y = P(price level)*Q(Real GDP)
Y = M*V
Real Per Capita GDP Growth, Selected Periods

*average annual growth*

<table>
<thead>
<tr>
<th>Period</th>
<th>1790-1999</th>
<th>2000-2016</th>
</tr>
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<tr>
<td>Average Annual Growth</td>
<td>1.9%</td>
<td>1.0%</td>
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</table>

Real Per Capita GDP Growth, Current Expansion vs. Prior Expansions

Average annual growth

Nonfarm Business Sector: Productivity

6 year % change a.r., quarterly

M2 Money Stock

annual % change

Sources: Federal Reserve Board, Bureau of Labor Statistics; Monetary Statistics of the United States. Through August 2016. Last plot is 12 months ending August 2016 vs. same period a year ago.
Velocity of Money 1900-2016

Equation of Exchange: \( GDP(Y) = M\times V \)

Sources: Federal Reserve Board; Bureau of Economic Analysis; Bureau of the Census; The American Business Cycle, Gordon, Balke and Romer. Through Q2 2016.

Q2 2016; \( V = GDP/M \), GDP = 18.4 tril, M2 = 12.7 tril, \( V = 1.46 \)

1918 = 2.0
avg. 1900 to present = 1.74

1946 = 1.2
1997 = 2.2
avg. 1953 to 1983 = 1.75

Lowest since 1950

GDP = MB\( \times m \times V \)
Composite M2 Growth for China, U.S., Japan and Europe

annual % change

M2 Velocity

annual

Long-Term Government Bond Yields Starting with Historic Panic Years: Japan 1989, U.S. 1873 and 1929

annual average

Sources: Federal Reserve Board, Homer & Sylla. Bank of Japan. (U.S. 2016 through July)