The US Government Debt: Consequences, Causes, and Solutions

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This article discusses the three major issues of budget deficits and debt—burdens, causes, and solutions--from the creation of the US federal government. Today federal government spending exceeds 20 percent of Gross Domestic Product (GDP), compared to the historical average of about 9 percent, fueling debt of historical levels. The only effective way to reduce debt level is to cut entitle programs and then set a tax rate sufficient, over the course of a business cycle, to fund government spending.

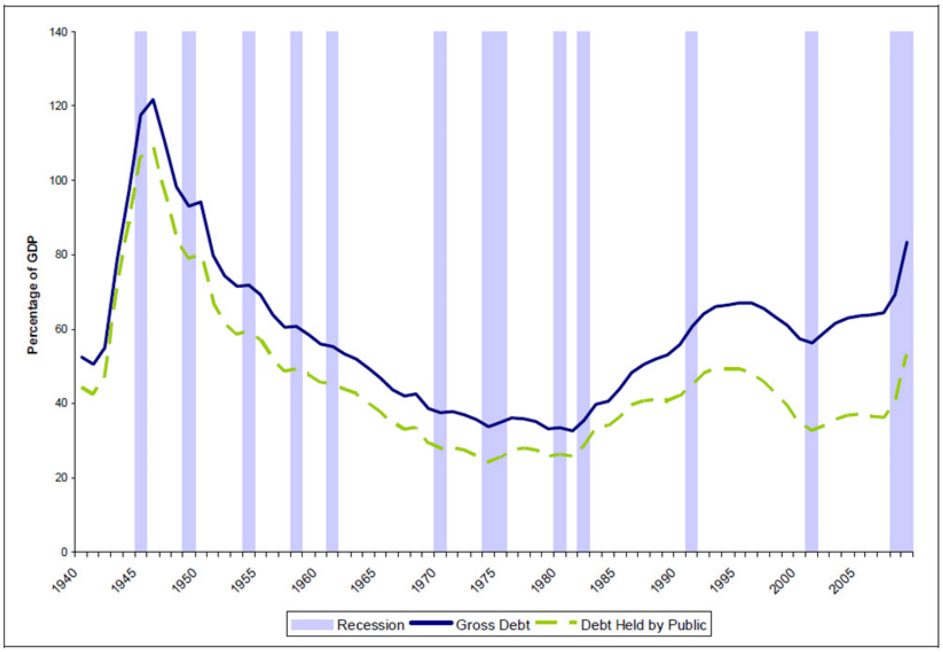
INTRODUCTION

Everybody agrees that US federal debt is on an unsustainable path. 1n 2007, the US federal debt expressed as a percentage of GDP was a manageable 65 percent. In relatively short order, it increased to 102 percent by 2013. Under currency policies the Congressional Budget Office (OMB) projects that the debt will grow by 300 percent by 2037.[1] This trend clearly demonstrates that decisive action is urgently needed to return the United States to a more normal level and sustainable budgetary path. Standard & Poor's apparently concurs; it downgraded the US credit rating from the top grade of AAA to AA+ in early August 2011. The 2011 S&P downgrade was the first time the government was given a rating below AAA. S&P had announced a negative outlook on the AAA rating in April 2011. The downgrade to AA+ occurred four days after the 112th United States Congress voted to raise the debt ceiling of the federal government by means of the Budget Control Act of 2011 on August 2, 2011.[2]

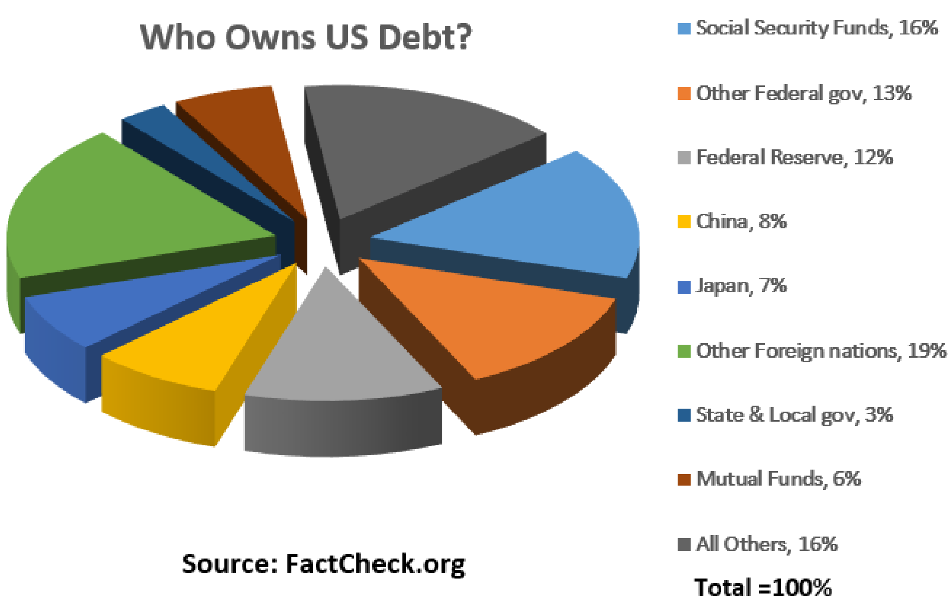
In order to reduce the national debt, a bipartisan Congressional 'super committee' was created in 2011. At the time of its creation, the committee was charged with striking a deal to cut at least $1.2 trillion in federal deceits over 10 years and submitting it to Congress for a vote by November 23, 2011. However, it has failed to accomplish this extremely important goal. Unless action is taken soon to reverse the deficit's course, the United States could face the more serious economic mess than the great recession of 2007-2009.

WHO ARE THE HOLDERS OF THE US DEBT?

Gross public debt consists of two components: *Debt held by the public (OMB)*, such as Treasury securities held by investors outside the federal government, including those held by individuals, corporations, the Federal Reserve System and foreign, state and local governments (factcheck.org). *Debt held by government accounts or intragovernmental debt*, such as non-marketable Treasury securities held in accounts administered by the federal government that are owed to program beneficiaries, such as the Social Security Trust Fund. Debt held by government accounts represents the cumulative surpluses, including interest earnings, of these accounts that have been invested in Treasury securities.



Source: Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2011, Historical Tables* volume, Table 7.1 and The National Bureau of Economic Research, *US Business Cycle Expansions and Contractions.*



Source: FactCheck.org

In general, debt held by the public increases as a result of government spending and decreases as a result of government tax or other receipts, which fluctuate in the course of the fiscal year, and in practice Treasury securities are not issued or redeemed on a day-by-day basis. The aggregate, gross amount that Treasury can borrow is limited by the United States debt ceiling.

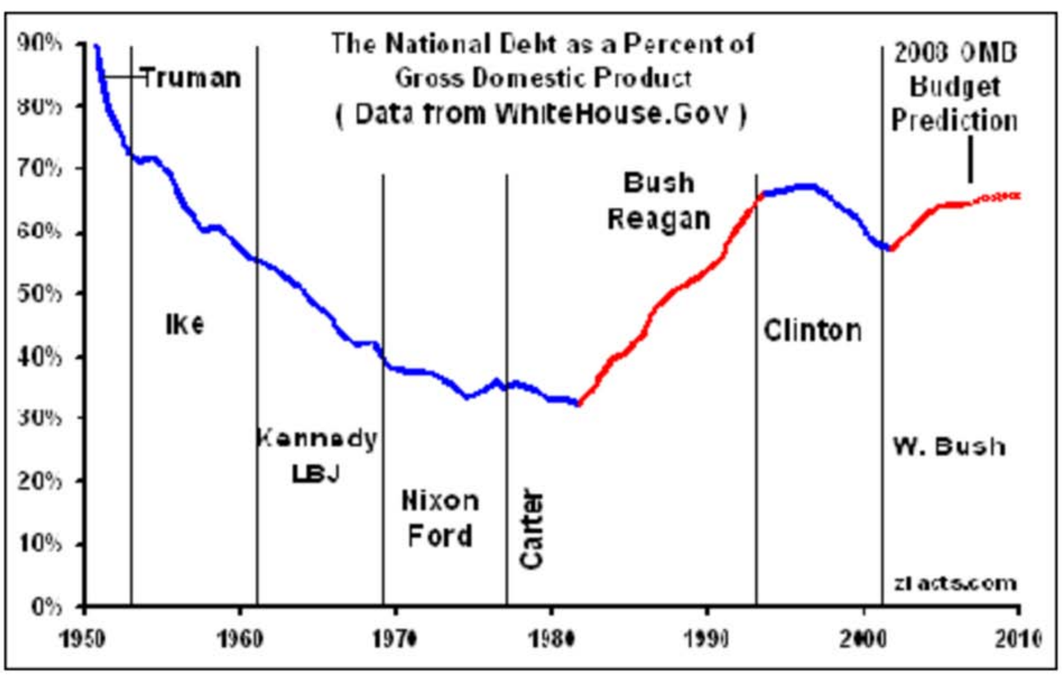
Historically, the US public debt as a share of GDP increased during wars and recessions, and subsequently declined. For example, debt held by the public as a share of GDP peaked just after World War II (113% of GDP in 1945), but then fell over the following 30 years. In recent decades (since the early 1980s), however, large budget deficits and the resulting increases in debt have led to concern about the long-term sustainability of the federal government's fiscal policies.[3] The ratio of debt to GDP may decrease as a result of a government surplus as well as due to growth of GDP and inflation.

On December 12, 2013, debt held by the public was approximately $12.312 trillion or about 73% of Q3 2013 GDP. Intragovernmental holdings stood at $4.9 trillion (29%), giving a combined total public debt of $17.226 trillion. As of January 2013, $5.9 trillion or approximately 47% of the debt held by the public was owned by foreign investors, the largest of which were the People's Republic of China and Japan at just over $1.2 trillion each (See Table 21).

TABLE 1
GROSS DEBT AS PERCENTAGE OF GDP FOR G7 COUNTRIES AND CREDIT RATINGS

Country	2007	2010	2012	Credit Ratings
United States	62%	92%	107%	AA+
Canada	59	80	86	AAA
France	64	82	90	AAA
Germany	65	82	82	AAA
Japan	167	197	237	AA-
Italy	112	119	127	BBB
United Kingdom	47	80	86	AAA

Source[4]: See endnote 4.



From: Kay Bailey Hutchison's Bizarro World, 'Every Major Tax Cut In History Has Created More Revenue'

DO DEFICITS AND DEBT MATTER?

Naturally, deficits must be financed. There are two ways to finance deficits. One way this is done is through the sale of government securities to the public (both domestic and foreign); the other is through the sale of securities to the Federal Reserve. When the Fed buys securities, it typically increases the money supply, so this method is commonly referred to as money-financed deficits. There is broad agreement that money-financed deficits are inflationary because they increase aggregate demand, push prices higher, and drive up the interest rate. More controversial is the case of bond-financed deficits, in which deficits are financed through the sale of securities to the public. Bond-financed deficits stimulates consumption and the demand for money, thereby increasing inflation and reduce private investment. In other words, these two financing approaches may create a vicious cycle which may trigger the government deficits and debt to rise even further.

According to the Government Accountability Office (GAO), the United States is on a fiscally unsustainable path because of projected future increases in Medicare and Social Security spending, and that politicians and the electorate have been unwilling to change this path. Further, the subprime mortgage crisis has significantly increased the financial burden on the U.S. government, with over $10 trillion in commitments or guarantees and $2.6 trillion in investments or expenditures as of May 2009, some of which are included in the public debt computation.[5]

We can draw a number of inferences from Tables 1, which will support the argument that “deficits and debt matter.” First, the four out of the G7 countries--The United States, Japan, Italy, and France—have their debt-to-GDP ratios higher than 90 percent and their credit readings are lower than the top grade of AAA. These credit ratings are important because they affect the interest rate, the availability of additional long-term debt, and the confidence of the county in the world financial market. Third, the average economic growth rate of these four countries have been well below that of the other three G7 countries—the United Kingdom, German, and Canada--in recent years mainly because of the high debt. In fact, the high debt of Japan created the so-called” Economic Trap of 1990s and beyond. Economic (GDP) growth in the 1990s averaged less than 1 percent a year, leading economists to talk of the "lost decade" or “an economic trap.[6] Since 1992, the expansion rates of Italy went below EU average mainly due to its high debt. Since then, the government has been trying to revive the economy by increasing public spending. As a result, the public debt and budget deficit have reached unsustainable levels.[7]

CONSEQUENCES

Budget experts normally identify three main consequences of rising national debt.[8] First, rising debt tends to be a drag on economic growth because public borrowing crowds out private investment. Second, rising interest payments caused by rising national debt leave less revenues available to other public expenditures, such as spending on infrastructure investment. Third, if national debt growths too large, the nation has less capacity to respond to emergencies such as economic recessions, to finance crisis such as the one in 2008. More specifically, the CBO reported several types of risk factors related to rising debt levels in a July 2010 publication:

- A growing portion of savings would go towards purchases of government debt, rather than investments in productive capital goods such as factories and computers, leading to lower output and incomes than would otherwise occur;
- If higher marginal tax rates were used to pay rising interest costs, savings would be reduced and work would be discouraged;
- Rising interest costs would force reductions in government programs;
- Restrictions to the ability of policymakers to use fiscal policy to respond to economic challenges; and
- An increased risk of a sudden fiscal crisis, in which investors demand higher interest rates.[9]

Table 2 shows that about $6 trillion or about half of the debt held by the public was owned by foreign investors as of January 2013. The largest holders were the central banks of China, Japan, Belgium, Brazil, Taiwan, Switzerland and Hong Kong. The share held by foreign governments has grown over time, rising from 13 percent of the public debt in 1988 [10] to 47% in 2013. Not surprising, the largest foreign holders of US debt are countries (i.e., China and Japan) that run persistent trade surpluses with the United States. Japan had long been the largest holder of US treasury debt, but China has recently overtaken Japan as the largest foreign holder of treasury securities.

The increasing share of the US debt owned by foreigners have raised concerns about the prospect that foreign governments might use financial leverage ad a creditor against the United States and its foreign policy. For example, it has been suggested that if China were to dump its holdings of treasury debt, the resulting market disruption would likely lead to high US interest rate and a collapse of the US dollar on foreign exchange markets.

In fact, this exposure to potential financial or political risk was also addressed in a June 2008 report issued by the Bank of International Settlements, which stated, "Foreign investors in U.S. dollar assets have seen big losses measured in dollars, and still bigger ones measured in their own currency." While unlikely, indeed highly improbable for public sector investors, a sudden rush for the exits cannot be ruled out completely.[11] On May 20, 2007, Kuwait discontinued pegging its currency exclusively to the dollar, preferring to use the dollar in a basket of currencies. Syria made a similar announcement on June 4, 2007. In September 2009 China, India and Russia said they were interested in buying International Monetary Fund gold to diversify their dollar-denominated securities. Russia reduced its holdings of US treasury securities by 24 percent in 2013 due to the Ukraine crisis.[12]

More specifically, the US debt owned by foreigners indeed could create a number of serious financial and geopolitical problems: lower living standards, policy constraints, and reduced international influence.[13] First, several hundred billion dollars of US taxpayers' money go to foreigners in interest payments every year. Living standards could fall as US producers and taxpayers relinquish part of their earnings to pay foreigners interest on loans and dividends on investments. These funds would not be available for personal consumption, savings, or domestic investment.

TABLE 2
LEADING FOREIGN HOLDERS OF US TREASURY SECURITIES AS OF FEBRUARY 2014

Country	Billions of Dollars	Percent of Total
Mainland China	1,273	21.6%
Japan	1,210	20.7
Belgium	341	5.8
Brazil	244	4.1
Taiwan	180	3.1
Switzerland	167	2.8
Hong Kong	160	2.7
Luxembourg	137	2.3
Russia	126	2.1
Others	2,047	34.8
Grand Total	5,885	100

Source[14]: See endnote 12.

Second, foreign investors keep wary eyes on economic development in the United States. If they fear capital losses from further deprecation of the dollar or if interest rates decline, investors abroad might turn away from dollar-denominated assets, thus pushing the United States into a recession. In other words, a growing debt owned by foreigners makes the United States more vulnerable to pressure from foreign investors, pressure that influences U.S. interest rates and the value of the dollar. The United States has never been in a position where foreign capital flows are as important as they are now. Some economists worry about the effects of an ever-increasing role of money from abroad, because the United States may be held hostage by other countries and may have no control over its own economic future.

Third, external debt weakens the influence of the United States, because a debtor must strive to accommodate its creditors. Private economists say that our country's status as the biggest debtor has jeopardized its prestige. This decline in prestige has become evident at recent meetings, at which the United States has wielded less influence in the discussion about foreign aid and debt-relief programs for Third World countries because it is no longer as generous as it used to be. The United States still is the world's largest donor in dollar amounts, but its foreign aid as a percentage of the nation's annual income is about the least among industrialized countries.

CAUSES

What are the causes of the mounting US federal debt? Major shifts in US macroeconomic policies since the early 1980s are primarily responsible for the US debt. Critics charge that "Bush II repeated Reagan's performance and turned the national debt upward again." A of $1.35 trillion and a military buildup larger than during the Cold War shifted the government budget from a record surplus of $387 billion predicted a few years earlier for 2004 to an actual record deficit of $412 billion in 2004.[15]

Why did critics charge that "Bush II repeated Reagan's performance and turned the national debt upward again?" The tax cut of 1981, which many regarded as the biggest in US history, reduced revenue growth. The military buildup in the same year, again regarded as the largest in US history caused Federal outlays to rise suddenly. Such major shifts in US major economic policies during the first half of the 1980s caused Federal debt to increase from $908 billion in1980 (33% as percentage of GDP) to $2.6 trillion in 1988 (or 52% as percentage of GDP).[16]

The sub-prime mortgage crisis, investment bank failures, falling home prices, and tight credit pushed the United States into a great recession by mid-2008. GDP contracted until the third quarter of 2009, making this the deepest and longest downturn since the Great Depression. To help stabilize financial markets, the US government committed or guaranteed over $10 trillion as of May 2009, a substantial portion of which are included in the public debt computation. Such easy fiscal and monetary policies might have helped the US economy recover faster than otherwise would be the case, but they caused the US federal debt to rise to the unsustainable level.

SOLUTIONS

The best way to reduce the national debt is to reverse the trend in entitlements. Just one-third of federal spending is discretionary, while the remaining portion of federal spending is mandatory. This mandatory spending has been increasing roughly five times faster than discretionary spending since 1965.[17] The discretionary portion of the pie, such as defense and non-defense spending, constitutes the part of the budget that Congress can alter in its annual appropriations to government agencies in the annual budget process. This is open to congressional modification in any given fiscal year.

On the other hand, the spending larger pie's mandatory portion funds programs Congress has authorized to provide specific benefits, but whose annual costs cannot be controlled through the annual appropriation process. Because they fund specific benefits to individuals already authorized by law, spending for them occurs automatically without specific congressional budget authorization.

The challenge of dealing with the deficit mandatory spending cuts becomes clearer if we examine this portion of the budget pie in detail. The US government is obligated under current law to make mandatory payments for programs such as Medicare, Medicaid and Social Security. The GAO projects that payouts for these programs will significantly exceed tax revenues over the next 75 years. The Medicare Part A (hospital insurance) payouts already exceed program tax revenues, and social security payouts exceeded payroll taxes in fiscal 2010. These deficits require funding from other tax sources or borrowing.[18]

While the immediate impacts of government deficits and debt are a matter of controversy, most economists agree that the long-term fiscal outlook for the United States requires serious consideration. The retirement of the Baby Boom generation[19] and a slow rate of growth in the labor force will create a demographic time bomb in which entitlement growth threatens to swamp available recourses.

One way of measuring the long-term shortfall is to estimate the present value of unfunded obligations, that is, to estimate how much money would be needed, in today's dollars, to pay for future promises in excess of expected tax revenues. The present value of these deficits or unfunded obligations is an estimated $45.8 trillion. This is the amount that would have had to be set aside in 2009 in order to pay for the unfunded obligations which, under current law, will have to be raised by the government in the future. Approximately $7.7 trillion relates to Social Security, while $38.2 trillion relates to Medicare and Medicaid. In other words, health care programs will require nearly five times more funding than Social Security. Adding this to the national debt and other federal obligations would bring total obligations to nearly $62 trillion.[20] However, these unfunded obligations are not counted in the national debt.

These projections are unlikely to actually occur. The trends are unsustainable. Long before reaching such unprecedented level of borrowing, there would surely be a crisis of confidence among US creditors, both domestic and foreign. Current measures of the federal deficit and the national debt, as bad as they might appear, fail to reflect full consequences of current-law fiscal policy. The unfunded future liabilities of government entitlement programs imply rising deficits and a ballooning public debt far larger than today's shortfalls.

For these reasons, the only meaningful solution to the US deficit challenge is to cut entitlement programs, then set tax rates to generate sufficient revenues over the business cycle to fund government programs. Most importantly, the tax rate should be permanent to alleviate uncertainty and allow individuals and businesses to plan for the future.[21]

HOW LONG IT TAKES TO REDUCE THE DEFICIT?

As they say "demolition is much faster than construction." Therefore, if it takes the Buhs's era (I and II) to increase the deficit; probably a solid ten years is need to reduce the deficit to its normal level. To find how long it will take to reduce the deficit; first, all the discretionary federal spending should be stopped. Second, the level to which the deficit must come down must be identified. Third, to reduce the US federal debt to manageable level i.e. 65 percent of GDP from 300 percent; we need to know how much of the 300 percent of GDP is related to the discretionary federal spending, so that we can bell out the rest by tax and other US revenue. "In 2015 the governments in the United States are expected to collect about 33 percent of Gross Domestic Product in revenue -http://www.usgovernmentrevenue.com/ current revenue."

In order for federal government to have a flexibility in increasing/decreasing tax, it must use real option valuation (ROV) to forecast the net present value of the tax revenue for the next say ten years. Using ROV the federal government must frame cash inflow from tax, identify the input parameters for ROV, calculate the option parameters, build the binomial/quadrinomial/partial quadrinominal /etc. tree and calculate the asset values at each node of the tree, calculate the option values at each node of the tree by backward induction, and analyze the results. Federal government can use simple options, like: option to abandon, option to expand; option to contract, option to choose; option to wait; and /or barrier option to deal with the fluctuation in economic condition. It may rise or reduce the tax based on ROV analysis. ROV analysis can easily show weather the ten years target is sufficient for deficit reduction. If not the project can expand beyond the ten years or contracted to short off ten years using option to expand or option to contract.

ENDNOTES

1. “CBO-The Long-Term Budget Outlook-June 2012,” http://www.cbo.gov/sites/default/files/cbofiles/attachments/06-05-Long-Term_Budget_Outlook_2.pdf).
2. http://www.foxbusiness.com/economy/2011/11/28/fitch-keeps-us-credit-rating-at-aaa-cuts-outlook-to-negative.
3. “Federal Debt: Answers to Frequently Asked Questions". Government Accountability Office,”http://www.gao.gov/fiscal_outlook/overview.
4. http://en.wikipedia.org/wiki/List_of_countries_by_public_debt and http://en.wikipedia.org/wiki/List_of_countries_by_credit_rating
5. David Goldman, November 16, 2009, CNNMoney.com's bailout tracker", http://money.cnn.com/news/storysupplement/economy/bailouttracker/index.html.
6. “Lessons of the 1990s recession in Japan,” *Socialist* October 8, 2008, http://www.socialistparty.org.uk/articles/6468, February 25, 2010.
7. http://www.tradingeconomics.com/italy/gdp-growth; and “Agenda for Italy,” *Economia,* February 14, 2013: http://economia.icaew.com/opinion/february2013/an-economic-agenda-for-italy.
8. William E. Hudson, *A Citizen’s Guide to Deficits and Debt*, Routledge: Taylor &Francis Group, New York and London, 2014, pp. 18-20.
9. Jonathan J. Huntley, July 27, 2010, "Federal debt and the risk of a fiscal crisis". Congressional Budget Office: Macroeconomic Analysis Division, http://www.cbo.gov/publication/21625.
10. http://www.treasurydirect.gov/govt/reports/pd/mspd/2011/opds012011.pdf.
11. Steve Whitehouse, June 30, 2008, "BIS says global downturn could be 'deeper and more protracted' than expected". *Forbes*. Archived from the original on June 1, 2010. .
12. Rep. Allen West says China holds 29 percent of U.S. debt, PolitiFact Florida, June 14, 2011, http://www.politifact.com/florida/statements/20
13. Michael Pakka, “Deficits, Debt and Looming Disaster, *“The Regional Economist* (Federal Reserve Bank of St. Louis), January 2009, pp. 4-7; and William E. Hudson, *A Citizen’s Guide to Deficits and Debt*, Routledge: Taylor &Francis Group, New York and London, 2004.
14. “Rep. Allen West says China holds 29 percent of U.S. debt, PolitiFact Florida, June 14, 2011, http://www.politifact.com/florida/statements/2011/jun/14/allen-west/rep-allen-west-says-china-holds-29-percent-us-debt/.
15. See Terry M. Neal, “Bush Releases Proposed $2.23 Trillion Budget,” http://www.washingtonpost.com, February 3, 2003; and The Council of Economic Advisors, *The Economic Report of the President to Congress*, Washington D.C., U.S. Government Printing Office, February 2007.
16. (The Council of economic Advisors, Economic Report of the Congress (Washington: The United States Government Printing Office), 1985-1989.
17. James R.Barth and Tong Li, “*US Debt and Deficits*,” Economic Affairs, October 2012, pp. 97-99...
18. Congress of the United States, Government Accountability Office, (February 13, 2009, "The federal government's financial health: a citizen's guide to the 2008 financial report of the United States government", pp. 7–8. United States Government Accountability Office (GAO), http://www.gao.gov/financial/citizensguide2008.pdf

19. Baby boomers are people born during the demographic Post–World War II baby boom between the years 1946 and 1964. When the boom finally tapered off by the mid-1960s, there were 76.4 million “baby boomers” in the United States. They made up almost 40 percent of the nation’s population. Today, the oldest baby boomers are already in their 60s. By 2030, about one in five Americans will be older than 65, and some experts believe that the aging of the population will place a strain on social welfare systems.

20. Nick Timiraos, (March 3, 2014, "Investor Fires Salvo Against Fannie, Freddie-Viewed March 2014". WSJ, http://online.wsj.com/news/articles/SB10001424052702304585004579415490523879118?mod=WSJ_hp_LEFTWhatsNewsCollection&mg=reno64-wsj

21. See endnote 13.