Next Social Contract Initiative and Economic Growth Program

Debt, Deficits, and Demographics: Why We Can Afford the Social Contract

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Introduction

For much of the last three decades, policy debates in the United States have been dominated by a quixotic concern about deficits, debt, and demographics. This concern has distracted policy from fundamental economic issues that have much more direct bearing on economic well-being, most notably the growth (and bursting) of the housing bubble in the last decade. While large deficits can have a negative impact on economic growth, this impact has been hugely misrepresented in public debates.

In fact, contrary to what political figures often assert, it is almost impossible to envision a scenario in which deficits and debt prevent future generations from on average enjoying higher standards of living than we do today. Many households have seen a decline in living standards in recent years, but this has been due to increasing inequality, not a decline in the nation's productive capacities. The trend towards increasing inequality poses a far greater threat to the living standards of future generations than the potential negative impact of deficits. Unfortunately, discussions of the debt and deficit often distract from discussions of the factors affecting the distribution of income.

The first section of this paper discusses the economy's recent growth and projected future growth. It compares the projected gains from continued growth and contrasts these with the impact of an aging population. Under any plausible scenario, the benefits from growth will swamp any negative impact on living standards from an aging population.

The second section examines how deficits can pose a drain on the economy. Specifically, it will point out the distinction between a deficit when the economy is near full employment and a deficit run when the economy has a large number of unemployed workers and a large amount of excess capacity. In the latter case, there is really no way that the deficit can be seen as imposing a drain on the economy. In fact, deficits in the latter case are likely to *increase* the well-being of future generations.

The third section points out that the debt does not in any way provide a measure of inter-generational equity. The debt is a commitment from the public as a whole to the owners of the debt. This can present distributional issues within a generation, but there is no way in which the debt in any way measures the extent to which current generations have made future generations worse off. In fact, the debt as conventionally reported is an arbitrary number that tells us very little about anything.

The fourth section examines the long-term deficit projections that have caused so much panic in policy circles. Specifically, it examines the projections for Social Security and Medicare. It shows that the projected shortfalls in Social Security can be relatively easily filled, especially if the pattern of upward redistribution of income that we have experienced over the last decade is stopped. Addressing the projected shortfall would be even easier if upward redistribution of the last three decades were reversed.

Instead, the main reason that deficits are projected to rise to dangerous levels is that private sector health care costs are projected to continue to hugely outpace the rate of economic growth. If these projections for health care costs prove accurate, it will have a devastating impact on the economy regardless of what is done with public sector-financed health care programs. Given this fact, an honest discussion would focus on ways to reform the health care system, not just containing public sector spending on health care. Discussing this projected explosion of health care costs as a deficit problem is fundamentally misleading.

The conclusion explains that we need to focus directly on the issues that will affect the future state of the economy if we care about the well-being of future generations. The deficit is very much secondary in this picture.

Productivity Growth Versus Demographics: There is No Competition

The often expressed concern that the aging of the population will lead to a decline or stagnation in living standards has no basis in reality. While an increase in the number of retirees relative to the number of workers can slow the increase in living standards through time, productivity growth will speed it up. Even slow rates of productivity growth will have an impact through time in raising living standards that will swamp the effect of even the most adverse demographic changes.

Figure 1: Changes in Living Standards Due to Aging and Productivity, 2012-2035

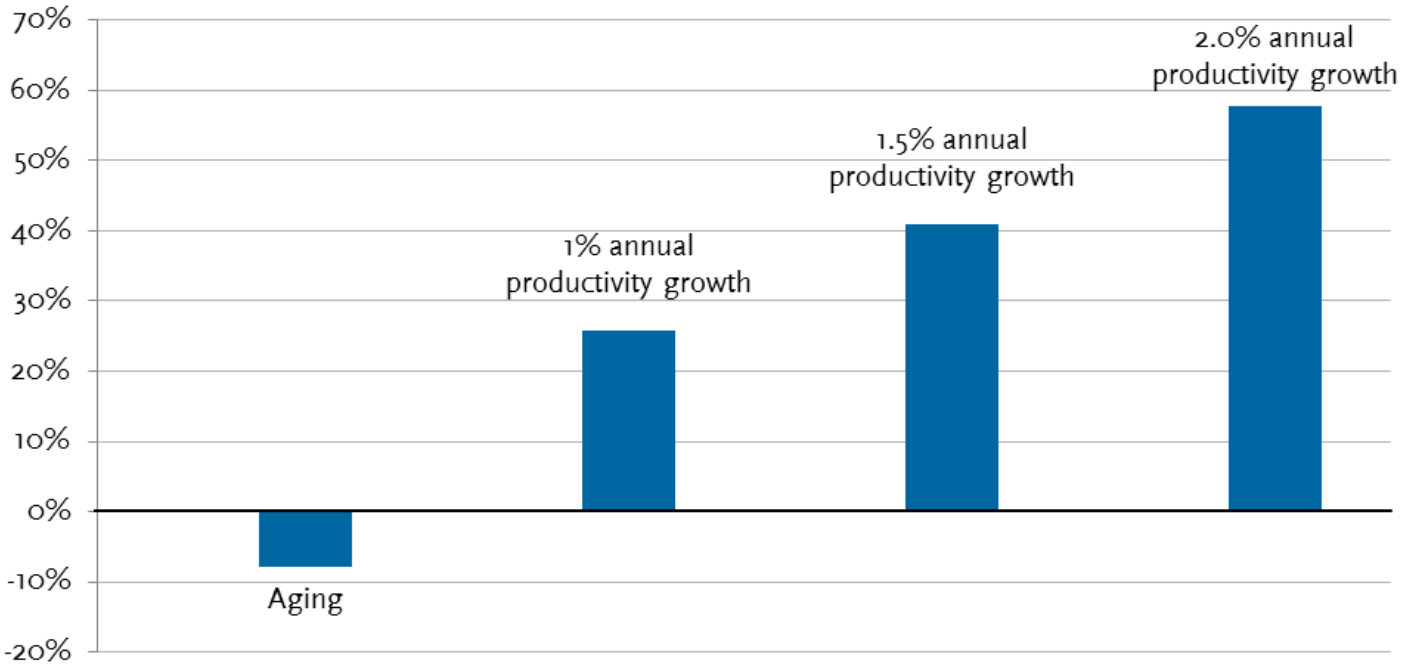


Figure 1 contrasts the impact of the increase in the number of retirees to workers on reducing living standards over the period from 2012 to 2035, the peak years of the baby boomers' retirement, with the impact of annual productivity growth of 1.0 percent, 1.5 percent, and 2.0 percent in raising living standards. As is shown, the decline in living standards due to the increased number of retirees per worker is 8.5 percent. This corresponds to a projected decline in the ratio of workers to retirees from 2.8 in 2012 to 2.0 in 2035.[1] The implication of this number is that the decline in the number of workers to share in the burden of supporting each retiree over this period would lead to a decline of 8.5 percent in the living standards of workers if there was no increase in productivity growth. (This assumes that consumption of retirees is equal to 85 percent of the consumption of the working age population. See the technical notes at the end of the paper for a full explanation of the construction of all figures and tables.)

Of course, there will be increases in productivity growth over this 23-year period. The first bar shows that a 1.0 percent rate of annual productivity growth will compound to a 25.7 percent increase in output per hour over a 23-year period.[2] The cumulative gain from a 1.5 percent increase in productivity growth would be 40.8 percent, and from a 2.0 percent rate of productivity growth 57.7 percent. Even in the most pessimistic case, which roughly corresponds to the weak growth during the period of the productivity slowdown from 1973-1995, the gains from higher productivity are more than three times as large as the decline in living standards that would result from the declining ratio of workers to retirees. In the middle scenario, which shows productivity growth that is roughly in line with the period since 1995, the gains from productivity growth are almost five times the losses calculated from the decline in the ratio of workers to retirees. In the case of 2.0 percent annual productivity growth, which corresponds to the growth rate of the economic golden age in the three decades following World War II, the impact of productivity growth in raising living standards would be almost seven times as large as the impact of demographics in reducing living standards.

It is worth noting that even these numbers seriously overstate the impact of demographics relative to productivity growth in four important ways. First, they focus exclusively on the rise in the ratio of elderly dependents to workers. They ignore the projected decline in the number of children per worker. While there is projected to be little change in the ratio of people under age 20 to people between the ages of 20-64 between 2010 and 2030, there has been a sharp decline in this ratio since 1965. In fact, the drop in this ratio more than fully offsets the projected rise in the ratio of people over the age of 65 to the working age population.[3] The Social Security trustees project that the ratio of total dependents (young and old) to the working age population will never exceed the level it reached in 1965 when the baby boomers were all still under the age of 20.[4]

The second reason that just looking at the ratio of the over-65 population to the prime working age population overstates the impact of demographics is that the percentage of prime age people who are employed is not fixed. The share of the prime age population in the workforce has been increasing over the last five decades due to the increase in the share of women who enter the paid workforce. While this process has been largely completed by 2012, there is still likely to be at least some marginal increase in the share of women entering the labor force.

It is also possible that many workers will opt to work longer hours. While it would be a negative development if workers felt that they had to work longer hours to maintain their standard of living, there is also the possibility that if real wages rise in response to a shortage of labor, many workers may respond by putting in more hours over the course of the year. This means that the rise in the ratio of dependents to workers will be larger than the rise in the ratio of dependents to working hours.

The third reason is that more people over the age of 65 may opt to continue working later in their lives, even assuming no further legislated changes in the age at which workers become eligible for normal retirement benefits under Social Security or for Medicare. (Workers who reach age 62 after 2022 will not be able to get normal retirement benefits under Social Security until age 67.) Improvements in the health of the population will leave many workers able to work until older ages. Some workers will clearly take advantage of this opportunity, especially if a labor shortage pushes up wages.

Finally, the scenario described in Figure 1 shows the absolute worst period for the impact of demographic change on living standards. The ratio of retirees to workers is projected to barely increase and then level off for the rest of the century. This means that all of the projected gains in productivity growth can be translated into higher wages and improvements in workers' living standards. As a result, workers can expect real wages that are 10.5 percent higher by 2045 than they were in 2035 in the slow productivity growth scenario and 21.9 percent in the fast growth scenario. By 2055, real wages would have increased by 22.0 percent in the slow productivity growth scenario and 48.6 percent in the fast productivity growth scenario from their 2035 levels. In the fast growth scenario, they will be more than double their current level by 2055 even assuming that a larger portion of wages must be diverted to support the living standards of a growing population of retirees.

For these reasons, Figure 1 exaggerates the actual impact of the aging of the population on the well-being of the working age population. Clearly productivity growth will have far more impact on the living standard of future generations. The impact of even small differences in productivity growth sustained over a long period of time will far exceed the negative effect on living standards of the projected increase in the ratio of retirees to workers.

Of course, wages for most workers have not been rising in step with productivity growth, but this raises a completely different set of policy issues. The focus of policy on deficits has been a distraction from policies that might reverse the upward redistribution of income that we have seen over the last three decades. This shift has had much more impact on the living standards of young people today than our budget policy, and if the pattern of upward redistribution is allowed to continue, its impact on the living standards of most of our children and grandchildren will swamp the impact of any plausible budget path over the next two or three decades.

The Impact of Deficits on Productivity Growth

At this point there is a large body of research on the impact of deficits on living standards.[5] The conclusion of most of this research is that the effect of deficits is generally limited and, depending on the timing and the purpose of the deficit, it could actually increase growth. The standard argument for how deficits reduce growth is that they do so by pushing up interest rates and thereby crowding out private investment. This argument is only plausible when the economy is near full employment, however, since otherwise there would be no reason a budget deficit would need to result in higher interest rates. In a period in which the economy is operating below its full employment level of output, like the present, the economy is not supply constrained. Additional demand from a deficit can be met by additional output, so there is no reason that it must crowd out private investment.

As a financial matter, the additional borrowing by the government can be accommodated by the increased supply of money from the Federal Reserve Board. Typically this just means lowering short-term interest rates by enough to offset any impact that

increased government borrowing has in raising interest rates. In the current downturn, with the Fed engaged in quantitative easing, it is effectively directly buying up much of the new debt being issued by the government to finance its deficit.

When the Fed acts to prevent the deficit from raising interest rates, there is no plausible mechanism through which deficits can reduce future growth.[6] If interest rates do not rise, then there is no reason that investment should decline. In fact, the increase in demand from the deficits is likely to boost investment. There is considerable research that shows that the growth of demand and corporate cash flow are important determinants of investment, and generally have more impact than interest rates, especially with new and fast growing firms.[7] For this reason, deficits in periods of high unemployment are more likely to increase investment than reduce it, even if they did lead to some increase in interest rates.

Sustaining high levels of demand in a downturn can also have other positive long-run effects on growth. Most immediately, by keeping workers employed it can reduce the likelihood that workers might become difficult to employ or even drop out of the labor force as a result of long periods of unemployment. There are also important generational effects. The children of unemployed workers are likely to suffer in school and have poorer subsequent career prospects.[8] If deficit spending can sustain higher levels of employment, it can mean higher potential GDP in the near future by keeping down the structural rate of unemployment, and also higher GDP in the long-term, as children of otherwise unemployed workers would be better prepared to be productive workers. In short, there is little reason to believe that deficits in periods of high unemployment should be cause for concern. They not only have the potential for increasing GDP in the short-term but will likely boost the future output of the economy as well.

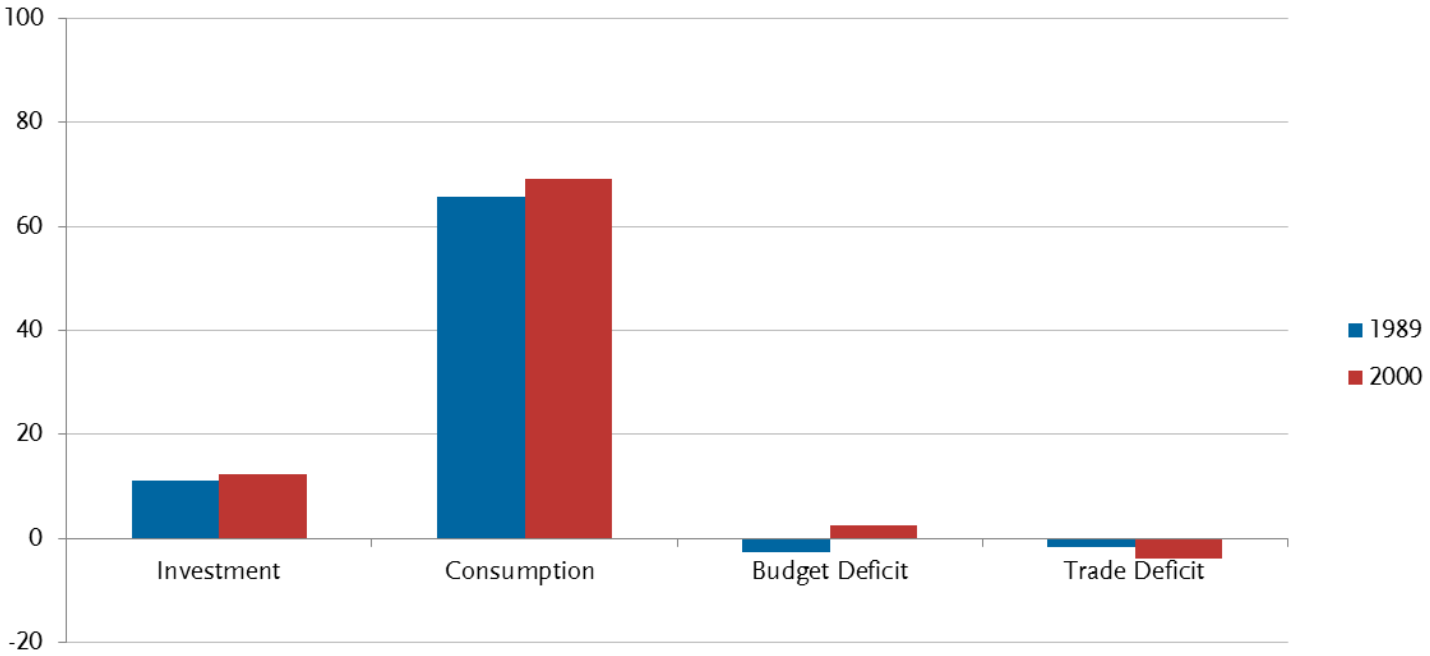
Even deficits that are run when the economy is close to full employment are likely to have fewer negative effects than is generally believed. If a deficit is run when the economy is near full employment, it can be expected to lead to higher interest rates. However, only a portion of the resulting crowding out occurs in investment. Much of the crowding out is likely to be in consumption, either directly – by making various forms of borrowing more expensive – or indirectly, through a negative wealth effect. If higher interest rates lead to lower stock and/or house prices, then it would be expected that consumption would drop due to the resulting decline in household wealth.

In recent years it is likely that most of the crowding out or crowding in associated with higher or lower deficits has been in consumption rather than investment, as shown in **Figure 2**.

At the peak of the business cycle in 1989 the deficit was equal to 2.8 percent of GDP. At the business cycle peak in 2000 the deficit had turned to a surplus of 2.4 percent of GDP, a shift of 5.2 percentage points. However, the non-residential investment share of GDP increased by just 1.2 percentage points between these two cyclical peaks. The largest increase in share of GDP was consumption, which rose by 3.4 percentage points from 65.7 percent of GDP in 1989 to 69.1 percent of GDP in 2000. Insofar as the reduction in the deficit can be attributed to reduced government consumption (government investment will be discussed shortly), government consumption was simply replaced by private consumption. While this may lead to more satisfactory outcomes if government consumption is generally valued less than private consumption, it does nothing to increase future growth.

The other component of GDP that should be affected by deficits is the trade balance. In principle, higher interest rates can lead to a higher valued dollar as foreign investors seek out dollar-denominated assets to take advantage of the relatively better returns

Figure 2: Component Shares of GDP: Business Cycle Peaks



Source: Bureau of Economic Analysis; Congressional Budget Office

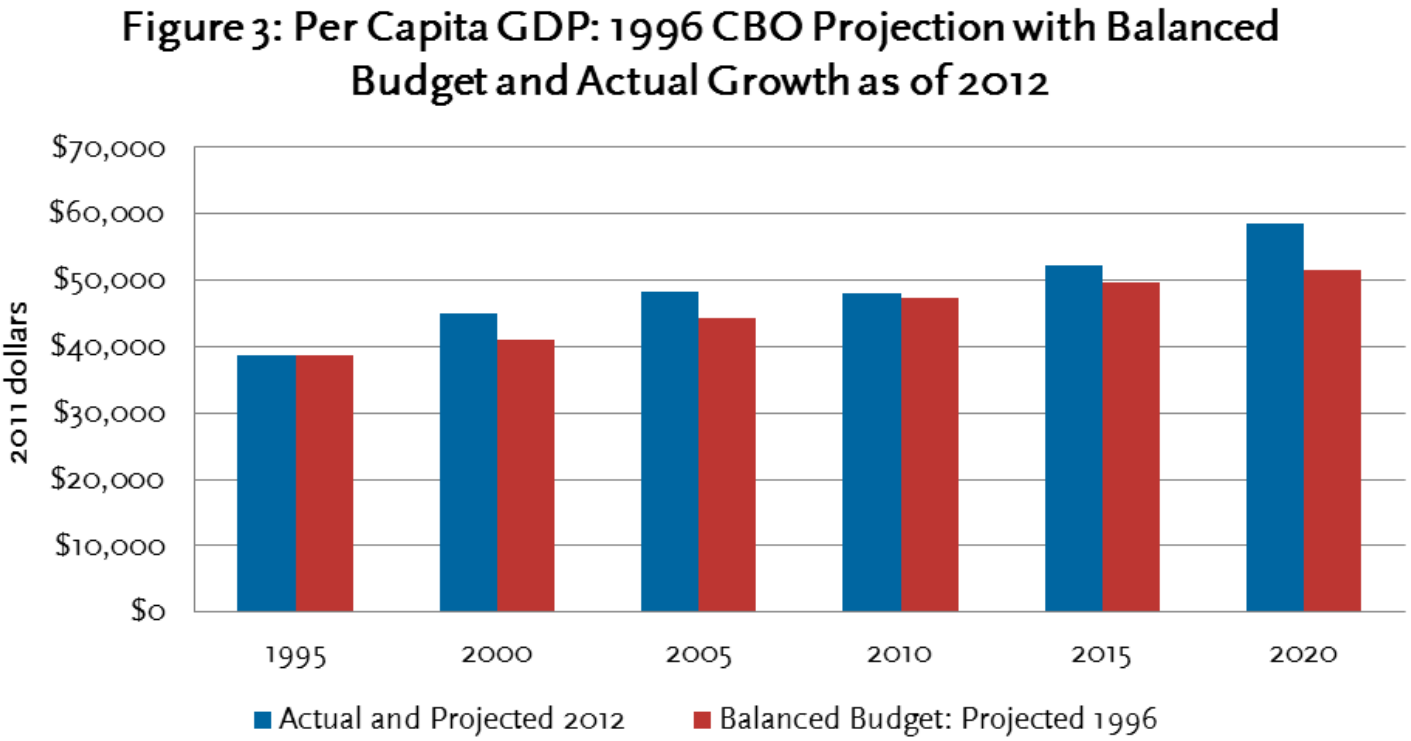
available in the United States. The higher dollar then leads to a larger trade deficit as imports become cheaper for people in the United States and U.S.-made goods become more expensive for people living in other countries. In this textbook case, a higher budget deficit then can translate into a higher trade deficit.[9]

Contrary to the standard theory, however, the link between the budget deficit and the trade deficit has proven to be weak or non-existent, primarily because the value of the dollar has not moved in the direction predicted by economic theory. The dollar actually rose strongly in the late 1990s even as the budget moved to surplus. This led to a trade deficit of 3.9 percent of GDP in 2000, compared to 1.6 percent of GDP in 1989.

This rise in the dollar was largely the result of political and strategic decisions made by developing countries in response to the bailout from the East Asian financial crisis in the early 1990s. The harsh terms that the International Monetary Fund (IMF) imposed on the countries of the region led developing countries to begin to accumulate massive amounts of foreign exchange reserves, which mostly meant dollars.[10] These reserves were insurance for developing countries against ending up in the same situation as the East Asian countries, needing a bailout from the IMF.

However this development broke the link between budget deficits and trade deficits. With the value of the dollar largely a function of political decisions by developing countries, there is no reason to believe that a lower budget deficit would imply a lower valued dollar. With the channel connecting budget deficits and trade deficits largely dysfunctional in the current world economic environment, the crowding out or in from larger or smaller budget deficits at full employment will mostly be felt on domestic consumption and investment.

Even assuming that the impact of deficits at full employment follows the textbook story, the impact of deficits on growth is considerably less than is generally believed. In 1996, the Congressional Budget Office projected future GDP growth under three alternative budget scenarios, one of which specified that the government would run a balanced budget every year through 2030.[11] Figure 3 shows the projected growth in the balanced budget scenario (red) compared with the actual growth through 2010 and CBO's projected growth through 2020 (blue).



As can be seen, the economy has actually done far better through 2010 than the projected balanced budget path. This is in spite of the fact the government has run substantial deficits for the last decade, and the economy plunged into the worst slump since the Great Depression following the collapse of the housing bubble in 2007.

Furthermore, the CBO projections show the economy bouncing back over the rest of this decade. Its most recent projections imply that by 2020 per capita GDP will be 13.4 percent higher than the balanced budget scenario that it had projected back in 1996. In other words, if the point of balancing the budget in 1996 was to make the country richer in the future, more was accomplished in terms of increasing growth without having balanced budgets through most of this period than would have been accomplished had the economy had balanced budgets each and every year over the subsequent quarter century. Put another way, we did far better in terms of growth than the advocates of balanced budgets of that period ever could have hoped. If they considered the balanced budget path projected for 2010 and 2020 to be acceptable, then they should be more than happy with the economic performance we have actually seen.

The final point to be made about deficits is that they may be run to promote various forms of public investment, such as infrastructure spending, education, or research and development. These forms of public capital increase the economy's productive capacity. In fact, several studies have found that on a per dollar basis, public investment increases productivity by

more than private investment.[12] This indicates that a deficit that is run to increase public investment will make the economy richer in the future, not poorer.

In fact, the gains from running a deficit to increase public investment are even larger than they may immediately appear. If the economy is running near full employment, most of the crowding out from a deficit will be of private consumption, not investment. This means that a dollar increase in public investment may crowd out just 30-40 cents of private investment. If on a per dollar basis, public investment is anywhere near as productive as investment in the private sector, then investments in public sector capital would be a huge positive from the standpoint of long-run growth even if they are done when the economy is near full employment. Of course the gains are even larger in an economic slump, when there is likely no trade-off in terms of lost private sector investment.

It could be argued that the gains would be even larger if additional public sector investment in a fully employed economy were offset by cuts in government consumption or tax increases. If political considerations make this impractical, though, the evidence suggests that increasing public sector investment is likely to increase growth even if it raises deficits.

The Debt as a Measure of Generational Equity

It is amazing that many highly-respected people in policy debates use the national debt as a measure of intergenerational equity, implying that it represents an obligation imposed on future generations. This is a fallacy at every level.

Most obviously it is a fallacy because the debt doesn't tell us anything about the distribution between generations. The debt is currently held by people who are alive; at some point everyone who is alive today will be dead. That means that whatever bonds that they hold will be passed on to future generations.[13] At that point the interest and the principal on the bonds will constitute payments within generations, not between generations. There could be important distributional issues: for example, if there is a large public debt and the bonds are concentrated among a small number of people. But that is a question of intra-generational equity, not intergenerational equity.

There are also issues of efficiency, since the taxes needed to pay the interest on the debt will inevitably be associated with some economic cost. This would arise even if the bonds were equally distributed among the population, since it would still be necessary to raise the taxes needed to pay the interest. But the efficiency costs of taxation are substantially smaller than the annual interest burden. Furthermore, this is just one of many ways in which past arrangements can impose a burden on the economy in the future. To fully understand intergenerational equity, we need to look at all of the ways that current policies affect the future of the economy.

For example, the government has claim to literally tens of trillions of dollars of assets that could, in principle, be sold off to private individuals or corporations. Insofar as these assets are sold off, it creates a burden on future generations in much the same way as does the debt. This is most evident in the case of physical assets that can be readily privatized like a highway. If the government sells off a highway to the private sector, it can use the proceeds to reduce its current debt. (Several state and local government have made such asset sales in recent years for exactly this purpose.) However, if future generations must pay tolls to use a highway that otherwise would have been free then they are not obviously better off than if they had a higher tax burden and the highway was still owned by the government.[14]

There are a wide range of physical assets held by the government, such as waterfront property, national parks and other areas of scenic beauty. A government can reduce its debt burden by selling off such assets. This will lessen the need for government revenue, but it will mean that people who will want to use these resources in the future will in effect be taxed by the private parties who own them.

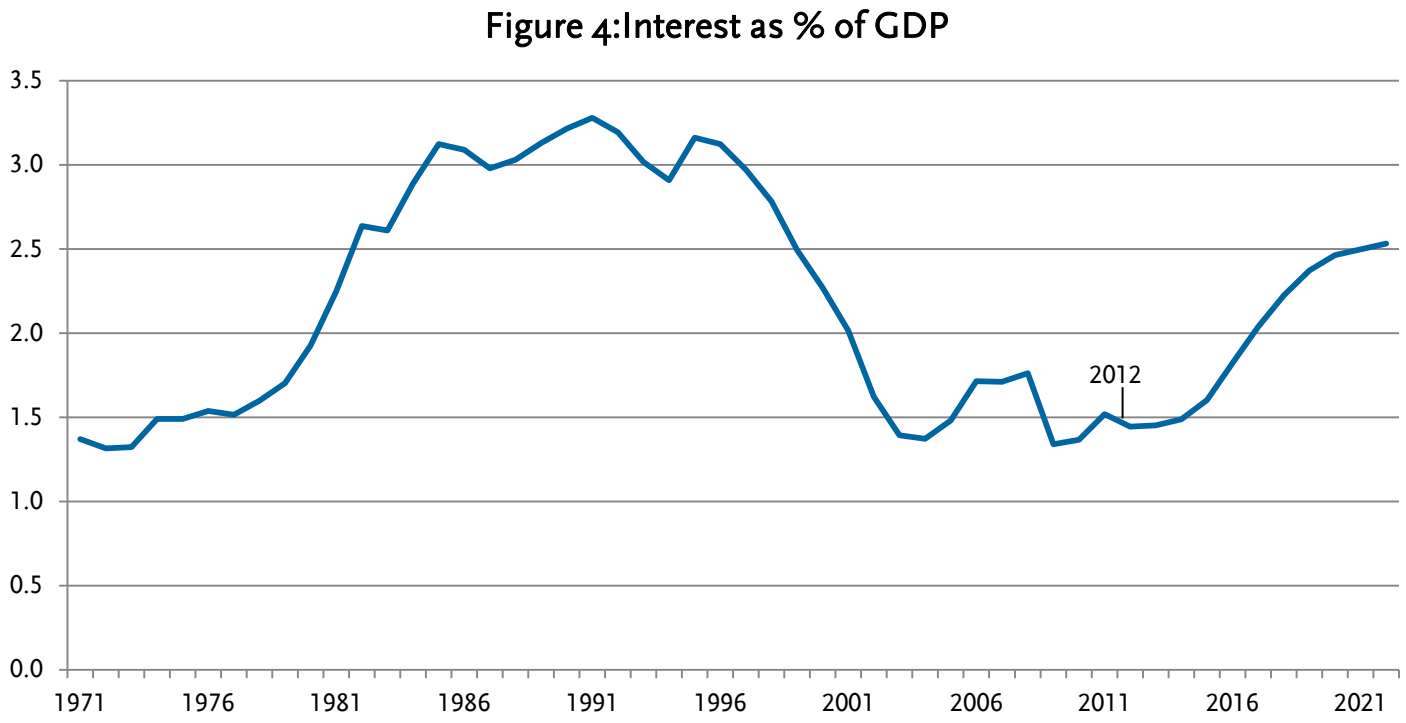
Governments can also sell off claims to assets that are not strictly physical, such as use of the airwaves. This effectively allows private parties to tax the public for use of the airwaves. In the same vein, but of much greater consequence, the government can sell off, or award as prizes, patent and copyright monopolies in a wide range of areas. This means that the government will stop competitors in order to allow private actors to earn monopoly profits in various sectors of the market. The cost to consumers and the deadweight loss to the economy can be enormous, yet this issue is never raised in discussions of intergenerational equity.
This point can be seen most clearly in the case of prescription drugs. As a result of the fact that companies have patent monopolies, drugs that would sell as generics for between $5.00 and $10.00 per prescription can sell for hundreds or even thousands of dollars each. The difference between patent-protected prices and the free market price is on the order of $270 billion a year and will likely come to more than $3.5 trillion over the next decade.[15] Obviously the total cost to the economy of all patent and copyright protection is considerably larger.

It is also important to recognize that one set of burdens can be traded off for the other. If we only focus on debt as a measure of intergenerational equity, then it can encourage trade-offs that are very much to the disadvantage of future generations. To build on the prescription drug example, suppose that we could easily replace the research that is currently financed through the patent system with a mechanism for directly financing research with government spending. Let's assume that this would require an amount of additional funding equal to 0.5 percent of GDP.[16]

If this led to a situation where all drugs could be purchased at their free market price, the projected net savings to patients over the next decade would be well over $2 trillion. However, if these savings all accrued to the private sector (much of the savings would actually be in the form of lower costs to Medicare and Medicaid and other public programs, but for purposes of this analysis we will assume that all the savings go to the private sector), then a commitment to lowering the deficit could lead the government to replace a more efficient mechanism of funding with patent supported research, since the latter doesn't require direct payments from the government. While patent financed research would unambiguously make future generations worse off under the assumptions used in this discussion, it would nonetheless lead to lower government spending and therefore lower future deficits and debt. If policy is driven solely by the desire to reduce the debt than it would end up taking a route that lowered the debt by making future generations considerably worse off.

Similarly, as noted previously, deficits can be run to finance public investment. If the government chooses not to invest in long-term improvements like infrastructure because of worries about deficits, it will hinder the economy and leave future generations worse off. As a measure of intergenerational equity, then, not financing necessary productive investments is as much of a burden on future generations as debt is. For example, if the government saves money by not maintaining highways then future generations will bear this cost in terms of higher transportation costs and more time spent commuting. If the savings are on education then output in the future will suffer due to a less productive workforce.

There is one final aspect to the debt discussion that is tremendously misleading. The true burden of the debt is the economic distortions that result from the taxes needed to make the interest payment on the debt. This suggests that interest, rather than debt, is the better measure of the burden. To see why this matters, it is worth noting that the United States is presently issuing large amounts of debt at very low interest rates. The reason that the interest rates are so low is that the economy remains extraordinarily weak. As a result, even the ratio of debt to GDP is projected to hit levels not seen since the years immediately following World War II, the ratio of interest payments to GDP is near a post-war low, as shown in **Figure 4**.



A brief thought experiment shows why it is interest burden and not debt itself that is the relevant factor in assessing the burden of the debt. CBO and other forecasters project that the economy will recover over the next several years. When it does, interest rates will return to more normal levels. When the interest rate rises, the price of long-term bonds falls. **Table 1** shows the market price of a 30-year bond, with 27 years left until maturity, at various interest rates. The calculations in the table assume that the bond was initially issued with a 2.75 interest rate, roughly the prevailing interest rate in August of 2012.

Table 1: Price in 2015 of a 30-Year Bond Coming to Maturity in 2042 (coupon = 2.75%)	
Current Interest Rate	**Bond Price**
2.75%	$100.00
6.0%	$57.00
8.5%	$39.80
12.0%	$26.56
Source: Smart Money Bond Calculator, available at: http://www.smartmoney.com/calculator/bonds/bonds-calculator--bonds--bond-funds-1309988621833/	

As can be seen, the price of the bond falls sharply as interest rates rise. If the interest rate on 30-year bonds rises to 6.0 percent, somewhat below its average in the late 1990s, then the price of the bond would fall to $57.00, little more than half of its initial value. If the interest rate on 30 year bonds rose to 8.5 percent (the average in the late 1980s), then the price of the bonds would fall to $39.80, less than 40 percent of its initial value.

This means that if the concern were simply over the size of the government's debt, and not the amount of interest that it pays, there is an easy remedy. The government could simply take advantage of the rise in interest rates projected by the Congressional Budget Office and virtually all other forecasters to buy up large amounts of debt at sharp discounts. For example, if the government bought $3 trillion worth of 30-year bonds that were issued at near a 2.75 percent interest rate, when the interest rate rises to 6.0 percent, it can instantly eliminate almost $1.3 trillion worth of debt.

If all that matters is the size of the debt, then the widely expected rise in interest rates in future years would provide the government with an opportunity to hugely reduce its debt burden. There is no obvious reason that the government should bother buying up debt in this sort of exercise, since it will not reduce the interest burden it faces, but if for some reason we need to reduce our debt to GDP ratio, then this is an obvious mechanism for accomplishing this result.[17]

This point can even be taken a step further. If the problem of the debt is somehow measured by the debt and not the interest burden, then if the U.S. government were to ever face the Greek style meltdown of which many deficit hawks have warned, it presents an enormous opportunity. If the concerns over the country's solvency sent interest rates on existing debt soaring, the bond prices would plummet. As Table 1 shows, if the interest rate rose to 12.0 percent, then the price of a 30-year bond issued at 2.75 percent interest rate with 27 years left to maturity would be just $26.56. This means that the Treasury could buy up its outstanding debt at a huge discount, sharply reducing its debt burden. Again, this would not change the interest burden, but if the concern is the amount of debt outstanding, this would be a quick way to make progress by this metric.

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There is one other important point that should be noted about the burden of the debt. At present, the Federal Reserve Board holds close to $3 trillion in assets, primarily government bonds and mortgage backed securities. There are substantial interest earnings on these assets, most of which end up being refunded back to the Treasury. In 2011, the Fed refunded $83 billion back to the Treasury.[18] This means that the actual interest burden to the Federal government was considerably lower than the 1.5 percent of GDP shown in Figure 4. Subtracting the amount refunded from the Fed to the Treasury, the net interest burden in 2011 was just over $140 billion, or less than 1.0 percent of GDP. This is a lower interest burden than at any other point in the post-War era.

The projections from the Congressional Budget Office and other authoritative sources assume that the Fed will soon sell off these assets so that its payments to the Treasury will fall sharply over the next decade. The reason for this assumption is that it is believed that the Fed will want to withdraw reserves from the system to head off the threat of inflation. While this is one route that the Fed could go to limit the potentially inflationary effects of excessive reserves in the banking system, it does have other options. For example, it could increase banks' reserve requirements. An increase in reserve requirements can be every bit as effective in reducing the money supply as directly pulling reserves out of the system. (China's central bank relies heavily on

changes in reserve requirements for controlling the money supply.) Increasing reserve requirements would allow the Fed to keep more of its assets and thus continue to refund money to the Treasury.

It is generally believed that changing the reserve requirement is a less desirable tool for conducting monetary policy than changing the amount of reserves in the system because changes in the reserve requirement can be a blunt instrument with unpredictable effects. However, in the current context, where it is likely that there will be a prolonged period in which the Fed will want to gradually reduce the money supply, it might be quite reasonable for the Fed to lay out a schedule of increases in the reserve requirement over a set number of years. This would remove the problem that unpredictable changes in the reserve requirement could lead to instability in the system. Also, the additional controls over the financial system more generally provided by Dodd-Frank should mean that financial regulators could limit the extent to which non-bank financial institutions attempt to circumvent the higher reserve requirements imposed on banks.

Table 2: Impact of Federal Reserve Board Rebates on the Deficit (in billions of $US)

	Constant Rebate	Projected Rebate	Annual Difference	Cumulative Difference
2013	80.0	78.0	2.0	2.0
2014	80.0	66.0	14.0	16.0
2015	80.0	51.0	29.0	45.4
2016	80.0	43.0	37.0	84.0
2017	80.0	41.0	39.0	126.2
2018	80.0	37.0	43.0	174.6
2019	80.0	40.0	40.0	222.2
2020	80.0	47.0	33.0	264.9
2021	80.0	52.0	28.0	304.5
2022	80.0	54.0	26.0	343.8

Source: Congressional Budget Office, 2012(a) and author's calculations.

Table 2 shows the year by year impact on the deficit if the Fed were to continue to hold its current level of financial assets so that it is able to refund $80 billion a year to the Treasury over the next decade. The cumulative savings to the Treasury compared with the baseline scenario used by CBO is over $340 billion after factoring in the interest savings over this period.

A higher reserve requirement would imply an increased wedge between the rate at which money is lent out and the interest rate paid on deposits. In this sense, the proposal to increase the reserve requirement to head off inflationary pressures can be seen as equivalent to imposing a tax on the banking system. While that is true, it is worth noting that there had been higher reserve requirements in place in the decades immediately after World War II, with the reserve requirement exceeding 20 percent of checking deposits for major money center banks for most of the decade immediate following World War II. (It is now 10 percent and 0 for non-transactions accounts.)[19] At that time, no one discussed higher than necessary reserve requirements as a tax and it is certainly not treated as a tax in historical accounts of federal taxation, which would have to show a higher level of taxation in those decades. At present the data only includes taxes that are explicitly identified as such.

As a practical matter, this is yet another situation in which the government's direction of resources goes far beyond its formal taxing and spending authority. Just as the power to sustain patent and copyright monopolies can involve payments for serving

public purposes that are quite large relative to explicit tax flows, reserve requirements that are higher than necessary for prudential purposes can also imply a large implicit tax that is not counted in standard budget numbers.

Long-Term Cost Nightmares: Aging Is Not the Problem

As noted earlier, the horror story in long-term deficit projections is almost entirely the story of the projected explosion of health care costs. While it is widely believed that the aging of the population is the main culprit, the additional costs associated with aging can be met without major disruptions to the economy. However, if health care costs unrelated to aging follow the path in the baseline projections, then it will present nearly insoluble budget problems.

Of course, if health care costs follow this projected path it would also take a devastating toll on the rest of the economy, too. Families would face enormous difficulties covering their health care costs, and companies that are unable to avoid paying for the health care benefits of their workers might follow the path of General Motors and Chrysler into bankruptcy.

The fact that the aging of the population is not a major factor in future deficit projections can be seen from examining the projections for Social Security, a program whose costs are driven almost entirely by aging.[20] The projected cost of Social Security rises from 5.0 percent of GDP in 2012 to 6.2 percent of GDP by 2033. It then stabilizes at this level for the next quarter century before gradually rising to 6.7 percent of GDP by 2087, the end of the CBO projection period.[21] The increase in spending of 1.2 percentage points of GDP projected for the next two decades is a considerably slower pace of increase than the 0.9 percentage point increase in spending on Social Security that we actually experienced from 2000 to 2012.

Insofar as the cost of Medicare and Medicaid are driven by aging, the rate of increase would be no more rapid than for Social Security, since the rate at which aging increases the number of beneficiaries for both programs will be roughly the same.[22] The much more rapid rate of cost growth in Medicare and Medicaid is due to the growth of per person health care costs, not aging.

If Social Security is viewed as a standalone program, as it is structured under current law, the projected shortfall in the program is relatively modest. According to the Congressional Budget Office's projections, the program faces a shortfall that is equal to 1.6 percent of taxable payroll over its 75-year planning horizon.[23] If this shortfall were fully closed by simply raising the payroll tax, the increase in the tax would be equal to 4.1 percent of projected wage growth over the next 30 years. (Real wage growth is projected to average 1.1 percent annually.)

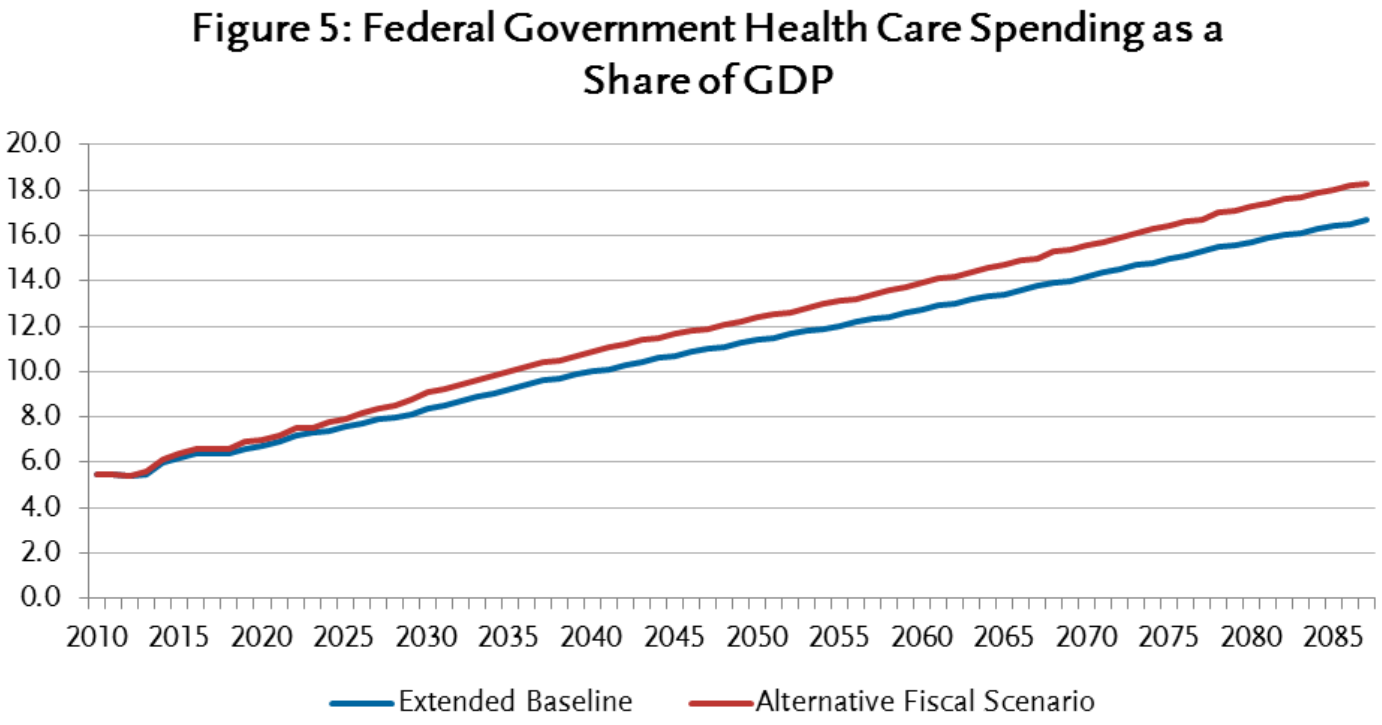
Furthermore, much of the projected shortfall is not due to aging, but rather due to the upward redistribution of income over the last three decades. When the formula for the cap on taxable wages was last changed in 1983, 90 percent of wage income fell under the cap. In recent years, the share of wages under the cap has hovered between 82 percent and 85 percent. CBO projects that the proportion of wages subject to Social Security taxes will fall back to 82 percent between now and 2032.[24]

According to the Social Security Administration's calculations, if the tax were raised enough to again cover 90 percent of wages, it would reduce the projected shortfall by 0.80 percent of taxable payroll, enough to cover half of the shortfall projected by CBO. (This assumes that benefits are increased accordingly.)[25] If the cap on wages subject to the payroll tax was eliminated entirely, SSA projects that it would lead to a net increase in revenue of 1.91 percent of payroll -- more than enough to fully eliminate the 75-year shortfall projected by the Congressional Budget Office.[26] In short, closing the projected shortfall in Social Security does

not pose a daunting task. If it were to be done entirely on the revenue side, the amounts needed are well within the range of past tax increases for Social Security and can be spread over long periods of time.

The Health Care Horror Story

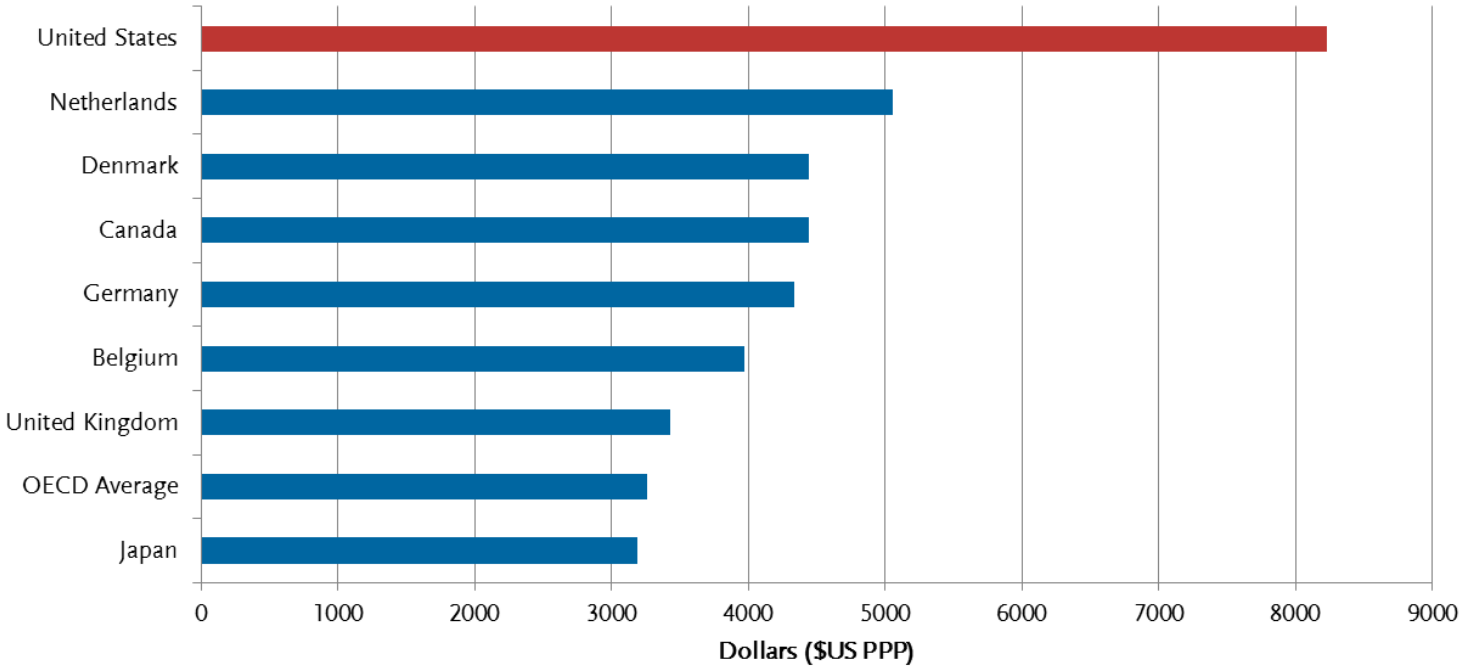
Figure 5 shows the CBO projections for federal government health care spending as a share of GDP under both a baseline scenario and a somewhat more pessimistic alternative fiscal scenario. In the former case, CBO assumes that annual age-adjusted spending increases at a rate of 1.6 percent more than per capita GDP growth in 2011 in all government health care programs.[27] The difference between the rate of growth of age-adjusted spending and per capita GDP growth is projected to eventually fall to zero by 2087 for Medicaid and the health care exchanges. This measure of excess cost growth is projected to fall to 1.0 percent by 2087 in Medicare. The baseline scenario assumes a slower rate of cost growth through 2030 in Medicare than the alternative fiscal scenario.[28]



It is important to note that these projections do not assume that public sector health care costs rise more rapidly than private sector costs. These projections are based on the assumption that the growth of health care costs for the economy hugely outpaces the growth rate of the overall economy. In these projections, even in the more conservative baseline scenario, health care costs would be more than 36 percent of GDP by 2087. With per capita GDP projected to be over $171,000 by 2087, this implies per capita health care spending of more than $61,000 a year (both figures are in 2012 dollars).[29]

To assess the plausibility of these projections, it is worth noting that the United States already pays more than twice as much per person as the average for other wealthy countries even though the United States has little obvious advantage in terms of outcomes. It actually ranks near the bottom in life expectancy and its record is mixed in most other outcome measures. **Figure 6** shows per capita health care spending (adjusted for purchasing power parity) in the United States and several other wealthy countries.

Figure 6: Total Health Spending Per Capita, 2010, Selected OECD Countries



As can be seen, the United States already spends close to twice as much per person as Canada and Germany, two of the higher cost countries. It spends close to two and half times as much per person as Japan and the U.K. The assumption that age-adjusted health care costs will continue to outpace per capita GDP growth implies that health care spending will continue to rise as a share of GDP. It also means that the gap between per person spending in the United States and in other countries would continue to grow.[30] This would mean that there would be enormous potential savings if people from the United States could take advantage of the more efficient health care systems in other countries.

One way in which this could be done would be to negotiate arrangements with other OECD countries under which Medicare beneficiaries would be allowed to buy into other countries' health care systems. They would get their health care from the system in Canada, Germany or whatever country they chose rather than the United States. The beneficiary and the government would split the savings, which would quickly run into the tens of thousands of dollars per beneficiary per year, according to current projections.[31] The potential gains are sufficiently large that it would be possible to offer countries a premium of 10-15 percent above current costs, while still leaving a large gap to be shared.

There are many other potential mechanisms for controlling costs. The point is that if costs for the U.S. health care system can be brought in line with costs in other wealthy countries then the United States would not face serious long-term deficit problems. If per person health care costs in the United States could be brought near the level of other wealthy countries, the United States would be looking at long-term budget surpluses, not deficits.[32]

Given the nature of the problem, a serious discussion should focus on fixing the U.S. health care system. It is misleading to discuss this as a deficit problem, as though the government is somehow spending too much money or not raising enough tax revenue. An honest discussion would focus on the inefficiencies of the U.S. health care system and the need to get costs under

control. Reducing or eliminating the public sector commitment to provide health care is beside the point; the public sector was initially given this responsibility because of the failure of the private sector to provide adequate health care for large segments of the population. The real policy goal is fixing the health care system so that the public can be assured of decent care at a reasonable cost. It is not simply reducing the budget deficit to an acceptable level.

Conclusion: Where the Debate Needs to Be

The emphasis on budget deficits in national policy debates over the last three decades has badly distorted national priorities. There has been an enormous amount of fundamentally confused thinking on budget deficits that has made its way into mainstream political debates.

This paper shows that it is implausible that future generations of workers will see a decline in living standards due to the effects of an aging population. Even using pessimistic assumptions, the average standard of living 25-30 years from now will be far higher than it is today, in spite of the projected rise in the ratio of retirees to workers.

Furthermore, the potential harm from budget deficits has been seriously misrepresented. If a budget deficit occurs when the economy is below full employment, as is the case presently, it will almost certainly make future generations of workers better off, rather than worse off. Even deficits that are run when the economy is near full employment are likely to be less harmful than is generally believed. Also, if the deficit is run to increase public investment it is likely to be a net positive for future generations.

There are also serious misunderstandings in the national conversation about the nature of the burden imposed by government debt. The debt is not a measure in any way of intergenerational burdens. It is simply one of many ways in which the government commits flows of income in the future.

In addition, it is important to recognize that the real burden of debt is measured by the size of annual interest payments, not the size of the debt. As of 2012, the ratio of interest payments to GDP was near its post-war low.

Finally, the long-term deficit horror stories that appear frequently in public discussions are driven almost entirely by projections of exploding health care costs. If health costs actually follow the current projected path, it will have a devastating impact on the economy regardless of what is done with public sector health care programs like Medicare and Medicaid. This points to the urgency of fixing the health care system itself. Treating the projected explosion of health care costs as a budget problem conceals the true nature of the problem.

The economy and the country do face many real problems going forward; the deficit, however, is not one of them. By misdirecting attention toward debts and deficits, our policy focus has been diverted from the issues that will truly have the largest impact on the standard of living of future generations.

Technical Notes

Tables

Table 1: The Smart Money Bond Calculator was used to construct the table. It is available at http://www.smartmoney.com/calculator/bonds/bonds-calculator--bonds--bond-funds-1309988621833/. The calculations show the current price of a bond issued at a 2.75 percent interest rate with 27 years until maturity. The record of past yields on 30-year bonds can be found at the Federal Reserve Board's web site, http://www.federalreserve.gov/datadownload/Output.aspx?rel=H15&series=8e9b2f86f4b744e310d8ca02a582c6f5&lastObs=&from=&to=&filetype=csv&label=include&layout=seriescolumn.

Table 2 takes the Congressional Budget Office's projected rebates from the Federal Reserve Board (CBO, 2012(a) Table 4-1) and contrasts it with a situation where the Federal Reserve Board continued to rebate $80 billion a year to the Treasury for the rest of the projection period. The calculation in column 4 applies the average of the projected interest rate on 10-year and 30-day Treasury debt to the past savings and adds the current year's interest rate savings as calculated in column 3.

Figures

Figure 1 assumes that an amount equal to 85 percent of workers' consumption goes to support the consumption of retirees. This calculation is not directly related to the size of the payroll tax. Retirees must be supported out of current production. If it is assumed (generously) that the average retiree consumes 85 percent as much as the average worker then at a point in time, it matters little whether the income for retirees comes through a payroll tax or through other claims to income, even though higher payroll taxes may have an impact on slowing growth compared to other mechanisms. (As a practical matter, it almost certainly will be the case that a substantial portion of retiree income will come through mechanisms other than programs supported by the payroll tax.) The projected rise in the ratio of retirees to workers is taken from the 2012 Social Security trustees report, Table IV.B2. The projected growth figures are obtained by taking 1.0, 1.5 and 2.0, respectively to the 23rd power.

Figure 2 shows the shares of GDP at the business cycle peaks in 1989 and 2000. The budget deficit figures are taken from CBO (2012(a)) Table E-2. The shares for investment, consumption, and net exports are taken from Bureau of Economic Analysis National Income and Product Accounts, Table 1.1.5. The investment and consumption figures differ slightly from the data in this table since they were adjusted for the rise in car leasing over this period. This rise distorts the data since a leased car counts as an investment by leasing company whereas a car purchased by a consumer counts as consumption. Car leasing was less than 0.1 percent of GDP in 1989. It rose to more than 0.4 percent of GDP by 2000.

The adjustment for car leasing subtracts the amount paid out for leasing of motor vehicles, National Income Product Accounts, Table 2.4.5U, Line 190 from investment. This amount represents the flow of services coming from leased vehicles in a given year. This should approximate the amount of investment recorded in NIPA accounts for vehicles purchased to be used for leasing. This amount is added into the number for consumption.

Figure 3 uses the projections for per capita GDP in the balanced budget scenario from CBO (1996), Table 4-8. The numbers were converted to 2011 dollars used the GDP deflator from National Income and Product Accounts, Table 1.1.4, Line 1. The actual GDP numbers through 2010 are taken from the Economic Report of the President, Table B-31. The projections for 2015 and 2020 were based on taken from CBO's projections for real GDP (CBO 2012(a), Table A1, available at

http://www.cbo.gov/sites/default/files/cbofiles/attachments/Jan2012_EconomicBaseline_Release.xls) and the Census Bureau's projections for population growth (Census Bureau, 2009, Summary Table 1, available at http://www.census.gov/population/www/projections/files/nation/summary/NP2009-T1-C.xls).

Figure 4 uses the data from Table F-3 in CBO 2012 (a) and includes the projections from Table 3-1.

Figure 5 uses the projections from CBO 2012(d), Supplemental Data.

Figure 6 uses the OECD Health Care Statistics 2012, Total Expenditures Per Capita Table, available at http://stats.oecd.org/Index.aspx?DataSetCode=SHA (Expenditures for Japan for 2010 apply the average growth rate over the prior 5 years to the 2009 estimate, and the OECD average is calculated with 2010 or the nearest year.)

Endnotes

[1] "The 2012 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds," Social Security Administration, Table IV.B2.

[2] These rates of productivity growth can be seen as comparable to the growth of "usable productivity" as described in Dean Baker, "The Productivity to Paycheck Gap: What the Data Show," Center for Economic and Policy Research, 2007. Usable productivity is growth that can be translated into higher wages and therefore higher standards of living. These growth rates are adjusted for differences in deflators, the increasing share of depreciation in output, and the growing share of employer provided health care in compensation.

[3] The expense to the government of caring for young people is less than for older people, so the lower ratio of young dependents will not fully offset the impact of the rise in the ratio of elderly dependents. However, this gap is not as large when considering all the expenses that parents must directly bear, most importantly in the form of child care, both paid and unpaid. When considering workers' living standards, this burden must be taken into account.

[4] Social Security Trustees Report 2012, Table V.A2.

[5] For example, see: Laurence Ball and N. Gregory Mankiw, "What do Budget Deficits Do?" *Proceedings*, Federal Reserve Bank of Kansas City, 1995: 95-119, http://ideas.repec.org/a/fip/fedkpr/y1995p95-119.html.

[6] S. Baker et al (2011) finds a large impact of uncertainty on investment and growth. However, this study does not directly include deficits as one of the items causing uncertainty. Hence the use of this study to support claims that current deficits have slowed growth are somewhat misleading.

[7] For a summary of the literature, see: Robert S. Chirinko, "Business Fixed Investment Spending: A Critical Survey of Modeling Strategies, Empirical Results, and Policy Implications," Journal of Economic Literature (December 1993): 1875-1911; and Steve Fazzari, R. Glenn Hubbard and Bruce Peterson, "Investment, Financing and tax Policy," American Economic Review, (May 1988) V. 78, 200-205.

[8] See John Irons, "Economic Scarring: The Long-term Impacts of the Recession," Economic Policy Institute, 2009; and Kerwin Charles and Melvin Stevens, "Job Displacement, Disability and Divorce," National Bureau of Economic Research, Working paper 8578, 2001.

[9] Rudiger Dornbusch, *Dollars, Debts, and Deficits*, Cambridge, MA: MIT Press, 1985.

[10] Dean Baker and Karl Walentin, "Money for Nothing: The Increasing Cost of Foreign Reserve Holdings to Developing Countries," Center for Economic and Policy Research, 2001.

[11] "The Economic and Budget Outlook: Fiscal Years 1997-2006," Congressional Budget Office, 1996, Table 4-8, http://www.cbo.gov/publication/14949.

[12] See: David Aschauer, "Is Public Expenditure Productive?" Journal of Monetary Economics, V. 23, March 1989: 177-200; Alicia Munnell "Why Has Productivity Growth Declined?: Productivity and Public Investment," New England Economic Review, January 1990: 3-22; Douglas Holtz-Eakin, "Solow and the States: Capital Accumulation, Productivity, and Economic Growth." NBER Working Paper W4144, 1992; and James Heintz, "The Impact of Public Investment on the U.S. Private Economy," New Evidence and Analysis," International Review of Applied Economics, 2010.

[13] There is an issue about debt owed to foreigners, but this is a function of the trade deficit, not the budget deficit. Those who are concerned about foreign indebtedness should be pushing for a reduction in the value of the dollar, which is the main factor determining the size of the trade deficit. A reduction in the budget deficit will have little effect on the trade deficit unless it is accompanied by a fall in the value of the dollar. Furthermore, payments to foreigners will depend on their ownership of U.S. assets in general, not just government bonds. Future generations will be no better off if foreigners hold $5 trillion of private debt and equity than if they hold $5 trillion of U.S. government bonds.

[14] It is possible that the private sector can maintain the highway at a lower cost than the government, even after accounting for the costs associated with collecting tolls. In this case there would be some economic gain, but it would almost certainly be at least an order of magnitude smaller than the taxes or tolls in question. Of course the private sector may actually be less efficient, especially when the necessary public sector monitoring costs are factored in (see: David Sappington and Joseph Stiglitz, "Privatization, Information and Incentives," Journal of Policy Analysis and Management, Vol. 6, No. 4, 1987: 567-585).

[15] This calculation is based on the Center for Medicare and Medicaid Services National Health Expenditure Projections, 2011-2022, Table 2. (The number for 2022 imputes the growth rate for the prior decade to the 2021 number.) These calculations assume that without patent protection or other forms of intellectual property, drugs would sell for one-tenth of their current price. This would come to around $40 per prescription on average over this period.

[16] For examples of alternative funding mechanisms, see: Dean Baker, "Financing Drug Research: What are the Issues?" Center for Economic and Policy Research, 2004.

[17] The argument that high levels of debt to GDP are a major impediment to growth is most associated with Carmen Reinhart and Kenneth Rogoff. See: Carmen Reinhart and Kenneth Rogoff, *This Time is Different: Eight Centuries of Financial Folly*, (Princeton University Press, 2008); and Carmen Reinhart and Kenneth Rogoff, "Growth in a Time of Debt," *American Economic Review*, May 2010, vol. 100(2), 573-8.

[18] Congressional Budget Office, 2012, Table 4-1.

[19] A history of reserve requirements can be found in Appendix Tables A1-A4 of Joshua Feinman, "Reserve Requirements: History, Current Practice and Potential Reform," Federal Reserve Bulletin, June 1993: 570-589.

[20] The disability portion of the program is affected by aging but also other factors.

[21] "The 2012 Long-Term Budget Outlook," Congressional Budget Office, 2012, Table 4-1.

[22] Actually, there are differences in cost for Medicare beneficiaries by age. This fact actually slows the rate of growth of Medicare costs relative to Social Security since at least initially the baby boomers entering the program will be in the relatively low cost age cohorts.

[23] The 2012 Social Security Trustees Report shows a somewhat larger shortfall. While the difference between the projections matter little to this argument, there are three reasons why the CBO projections should be preferred. First, they are consistent with the other numbers used in this analysis. Second, CBO's projections are done by its professional staff. The projections of the trustees are in fact from the trustees, not the professional staff of the Social Security Administration. Four of the six trustees are political appointees of the president. Third, the CBO numbers are fully explained in their methodology. The Social Security Administration does not provide any information on the basis for changes in assumptions from year to year. The memos prepared by the professional staff for the trustees are not made available to the public.

[24] Congressional Budget Office, 2011, p 7.

[25] "Summary Measures and Graphs: Increase Taxable Maximum Such That 90 Percent of Earnings Would Be Subject to Payroll Tax" Social Security Administration, based on 2011 Trustees Report, https://www.socialsecurity.gov/OACT/solvency/provisions/charts/chart_run414.html

[26] "Summary Measures and Graphs: Eliminate the Taxable Maximum," Social Security Administration, based on 2011 Trustees Report, https://www.socialsecurity.gov/OACT/solvency/provisions/charts/chart_run110.html

[27] Age-adjusted health care spending measures the changes in health care spending across time or between countries assuming that the age-distribution of the population did not change.

[28] "The 2012 Long-Term Budget Outlook (Supplement)," Congressional Budget Office, 2012, Table 5, http://www.cbo.gov/sites/default/files/cbofiles/attachments/43288-LTBOSuppTables_0.xls

[29] These calculations apply the rate of excess cost growth from the CBO 2012 Long-Term Budget Outlook for non-Medicare spending (Supplement, Table 6; see previous note), to all non-Medicare spending in the economy. The latter is projected to be 16 percent of GDP by the Center for Medicare and Medicaid Services in 2022. Projected Medicare spending for 2087 from Table B-1 is then added to this number. The per capita GDP number for 2087 is taken from Table 3.

[30] This would happen if spending in other countries grew at the same rate as in the United States, which for the most part it has not. If spending in the United States doubled from 17 percent of GDP to 34 percent of GDP and spending in the U.K. also doubled from 9.6 percent of GDP to 19.2 percent of GDP, then the gap in spending would rise from 7.4 percent of GDP to 14.8 percent of GDP.

[31] Dean Baker and Hye Jin Rho, "Free Trade in Health Care: The Gains from Globalized Medicare and Medicaid," Center for Economic and Policy Research, October 2009.

[32] David Rosnick, "Health Care Budget Deficit Calculator," Center for Economic and Policy Research, 2012.

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