LIMITING SOCIAL SECURITY'S DRAG ON ECONOMIC GROWTH:
Removing Disincentives to Personal Savings and Labor Force Participation

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ABSTRACT

Federal entitlement spending is the primary driver of unsustainable federal spending growth. Without effective entitlement reform, our nation's future economic growth potential will be buried under a mountain of federal taxation and indebtedness. To engender a pro-growth economic environment, reforms must not only rein in the rising costs of federal entitlement programs but also remove the barriers to labor force participation and the disincentives to personal saving that arise from entitlement programs generally and the Social Security program specifically. Social Security reform should be undertaken with a focus on reining in program costs, encouraging personal saving and investment, and rewarding those in middle and early retirement age who make the decision to extend their working careers. Only by approaching reform in this manner can we ensure that the operation of federal entitlement programs is compatible with facilitating economic growth throughout the 21st century and beyond.

JEL codes: H1, H2, H3

I. INTRODUCTION: THE ROLE OF BROADER ENTITLEMENT REFORM IN FACILITATING FUTURE GROWTH

FEDERAL ENTITLEMENT SPENDING is the primary driver of unsustainable federal spending growth. Without effective entitlement reform, our nation's future economic growth potential will be buried under a mountain of federal taxation and indebtedness. To engender a pro-growth economic environment, reforms must not only rein in the rising costs of federal entitlement programs such as Social Security, Medicare, and Medicaid, but also remove the barriers to labor force participation and the disincentives to personal saving that arise from them.

Any discussion involving entitlement reform must first overcome the misconception that it is possible to close these programs' funding shortfalls mainly by raising taxes. The Congressional Budget Office (CBO) estimates that federal tax rates would have to more than double to address currently projected spending increases.[1] Such high tax rates would have devastating economic effects. Even taking the perspective of those who might prefer to raise taxes substantially rather than to cut significantly into entitlement cost growth, we see clearly that relying on tax increases alone would represent an ineffective and economically crippling approach to this policy challenge.

Robert Barro and Charles Redlick of Harvard estimate that for each $1.00 in new tax revenue, economy activity tends to decline by about $1.10.[2] Economists Christina Romer and David Romer also recently examined more than 60 years of U.S. tax data. After controlling for other factors, they found that "a tax increase of 1 percent of GDP lowers real GDP by about 3 percent."[3] Many other economists agree that beyond just taking money directly out of the wallets of individuals, such tax increases would also reduce the size of the economy.

Moreover, there is little reason to suppose that a revenue increase alone would

1. Peter R. Orszag to Paul Ryan, "The Long-Term Economic Effects of Some Alternative Budget Policies," May 19, 2008, http://www.cbo.gov/ftpdocs/92xx/doc9216/05-19-LongtermBudget_Letter-to-Ryan.pdf.
2. See Robert Barro and Charles Redlick, "Macroeconomic Effects of Government Purchases and Taxes" (working paper, Mercatus Center at George Mason University, Arlington, VA, 2010).
3. Christina D. Romer and David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," *American Economic Review* 100 (June 2010): 763–801, http://elsa.berkeley.edu/~dromer/papers/RomerandRomerAERJune2010.pdf.

solve the fiscal problems caused by entitlement spending. Harvard economists Alberto Alesina and Silvia Ardagna examined numerous instances of fiscal adjustments throughout the world. They found that attempts to close deficits that relied on spending reductions were far more successful than those that relied on tax increases. Spending reductions were also less likely to lead to recessions.[4]

Similarly, relying on a policy of borrowing to fund entitlement programs would be shortsighted and would severely damage the economy. Most economists agree that high levels of debt pose a significant problem for economic growth. Carmen Reinhart and Kenneth Rogoff, for example, recently examined debt levels in 44 countries over a period of up to 200 years. They found that if national debt expands from 30 percent of GDP to 90 percent or more, economic growth rates fall by half,[5] and this phenomenon occurs in developing countries and in more advanced economies alike. Economists at the Bank for International Settlements found similar results. Their research showed that when government debt in OECD countries exceeds a threshold of about 85 percent of GDP, economic growth slows.[6] While there remains some question as to the applicability of international comparisons to the United States, there is little reason to believe that the United States occupies a sufficiently unique position to allow it to accumulate escalating levels of debt without consequence.

While some debt-financed spending can stimulate short-term economic growth, long-term economic growth is undermined when a nation's debt becomes so large that servicing that debt redirects substantial resources away from productive activity. Like most nations, the United States finances its sovereign debt by issuing securities.[7] As the government borrows to finance its spending, it competes with private entities that also borrow to finance their own activities. Thus, every dollar the government borrows reduces the amount that can be used by private businesses. Moreover, excessive government borrowing drives up interest rates, which makes borrowing more expensive for everyone else.[8]

Because businesses need capital in order to survive and grow, the dynamic that

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4. Alberto Alesina and Silvia Ardagna, "Large Changes in Fiscal Policy: Taxes Versus Spending" (Discussion Paper No. 2180, Harvard Institute of Economic Research, Cambridge, MA, 2009).

5. Carmen Reinhart and Kenneth Rogoff, "Growth in a Time of Debt" (NBER Working Paper No. 15639, Cambridge, MA, January 2010).

6. Stephen Cecchetti, M. S. Mohanty, and Fabrizio Zampolli, "The Real Effects of Debt," Bank for International Settlements, September 2011.

7. For the purposes of this discussion, the term *debt* refers to *debt held by the public*, the largest of the categories of the United States' *gross debt*. This debt represents the amount owed to persons and entities outside the U.S. federal government.

8. Klaus Schwab, ed., *Global Competitiveness Report*, 2012–2013 (Geneva: World Economic Forum, 2012), http://www3.weforum.org/docs/WEF_GlobalCompetitiveness Report_2012-13.pdf; Matthew Mitchell and Jakina Debnam, "In the Long Run, We're All Crowded Out" (working paper, Mercatus Center at George Mason University, Arlington, VA, 2010), http://mercatus.org /publication/long-run-we-re-all-crowded-out. This crowding-out effect persists even given the existence of international financial transactions.

raises interest rates increases the cost of doing business. Projects are less profitable than they would otherwise be. At the margin, some producers may decide not to produce at all.[9] For the nation as a whole, the outcome is a decrease in the level of capital accumulated,[10] as well as a decrease in the level of goods and services produced.[11] These adverse outcomes are virtually assured in the absence of meaningful entitlement reform since, as we noted, federal taxes cannot practically be raised to the level necessary to pay for currently projected spending. A failure to reform our national entitlement programs would thus almost certainly lead to enormous further increases in the U.S. national debt and to all of their ancillary adverse effects.

A failure to address these issues would also undermine our nation's real and perceived macroeconomic stability.[12] Put simply, until we clarify how we intend to pay for currently projected entitlement spending, businesses (and individuals) will have to operate under the assumption that the government will eventually raise taxes to pay its bills. The uncertainty of those tax hikes—when they are coming and how large they will be—serves as a drag on the economy. Optimizing our prospects for future U.S. economic growth thus requires fundamental adjustments to the current structures of federal entitlement programs. The current designs of these programs threaten our long-term economic outlook primarily because of the skyrocketing

9.   Gregory Mankiw, *Principles of Economics*, 5th ed. (Mason, OH: South-Western Cengage Learning, 2009).

10. Joseph Schumpeter, *Capitalism, Socialism and Democracy* (New York: Harper, 1942); Robert Solow, "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics* 70, no. 1 (1956): 65–94, http://faculty.lebow.drexel.edu/LainczC/cal38/Growth/Solow_1956.pdf; Trevor W. Swan, "Economic Growth and Capital Accumulation," *Economic Record* 32 (1956): 334–361.

11. *The New Palgrave Dictionary of Economics*, s.v. "Crowding Out" (by Olivier Jean Blanchard), http://www.dictionaryofeconomics.com/article?id=pde2008_C000452&edition=current&q=crowding%20out&topicid=&result_number=1. The importance of capital accumulation for economic growth has been emphasized across the literature examining developed countries. Examples include Xavier Sala-i-Martin, Gernot Doppelhofer, and Ronald I. Miller, "Determinants of Long-Term Growth: A Bayesian Averaging of Classical Estimates (BACE) Approach," *American Economic Review* 94, no. 4 (2004): 813–835; and Horst Siebert, "Foreign Debt and Capital Accumulation," *Review of World Economics* 123, no. 4 (1987): 618–630. Also, Urquhart finds a strong relationship between capital accumulation and economic growth in Canada in M. C. Urquhart, "Capital Accumulation, Technological Change, and Economic Growth," *Canadian Journal of Economics and Political Science* 25, no. 4 (November 1959): 411–430. See also Peter Howitt and Philippe Aghion, "Capital Accumulation and Innovation as Complementary Factors in Long-Run Growth," *Journal of Economic Growth* 3, no. 2 (June 1998): 111–130; Paul Davidson, "Portfolio Balance, Capital Accumulation, and Economic Growth," *Econometrica* 36, no. 2 (April 1968). In the case where domestic borrowing is primarily financed through international capital inflows, the federal demand for loanable funds may not compete directly with domestic demand for lending, so in the short run interest rates may not increase and domestic production may not decline. However, national income will nonetheless ultimately decrease as the nation must eventually repay its foreign debts. *The New Palgrave Dictionary of Economics*, s.v. "Budget Deficits" (by William G. Gale), http://www.dictionaryofeconomics.com/article?id=pde2008_B000332.

12. The effect of macroeconomic stability on economic growth is documented in Klaus Schwab, ed., *Global Competitiveness Report*.

FIGURE 1. FEDERAL REVENUES AND OUTLAYS
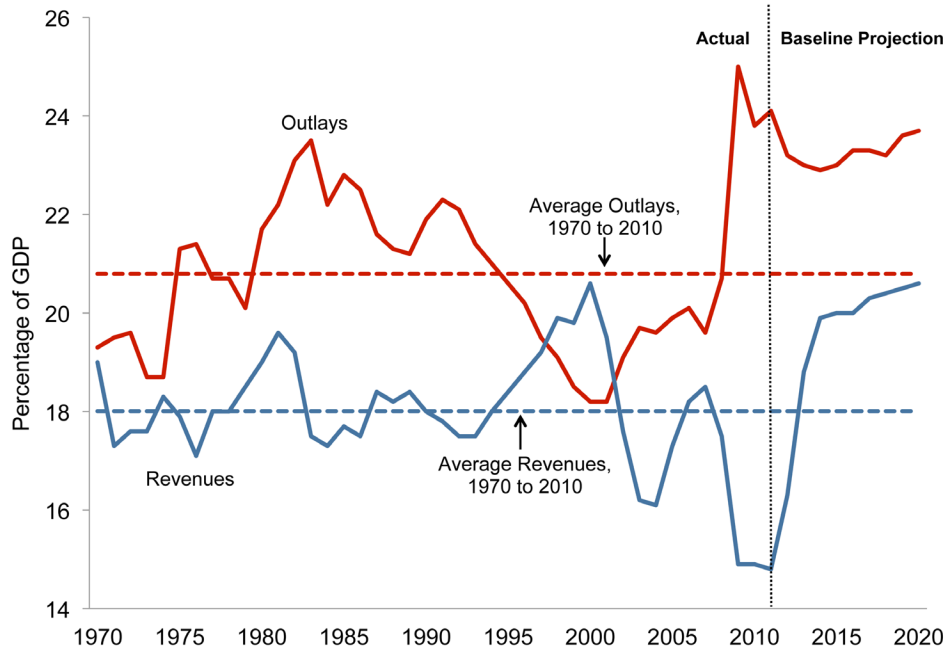
Source: Congressional Budget Office, June 2011
http://cbo.gov/sites/default/files/cbofiles/attachments/06-21-Long-Term_Budget_Outlook.pdf

FIGURE 2. FEDERAL OUTLAYS BY CATEGORY (EXCLUDING INTEREST)
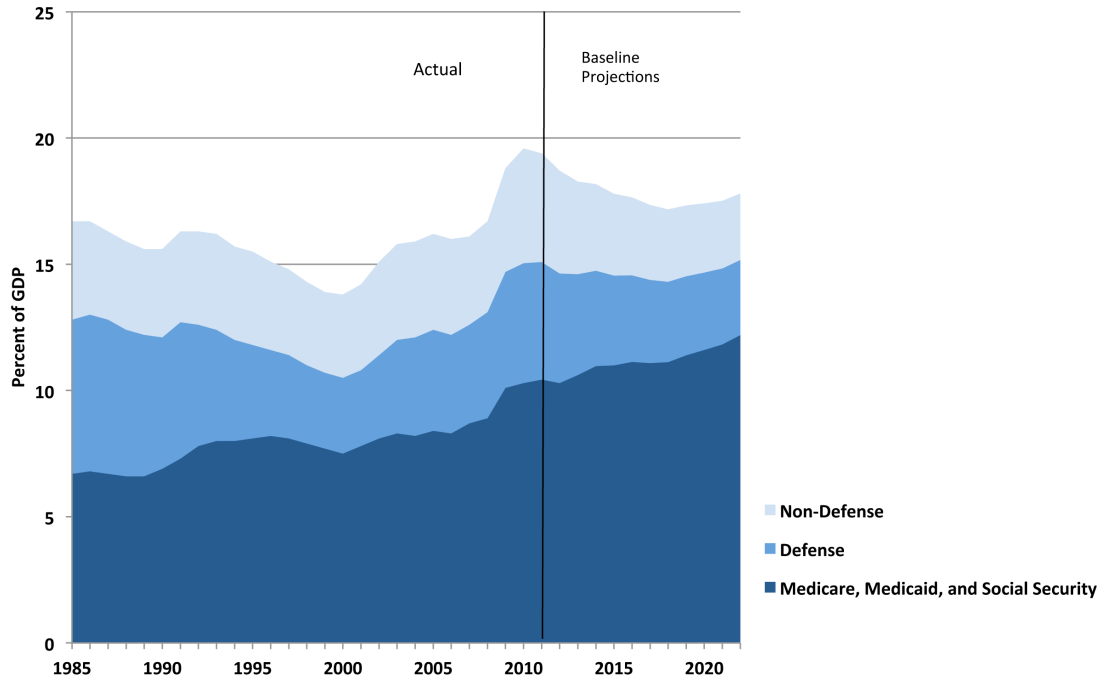
Authors' calculations based on Congressional Budget Office data
http://cbo.gov/sites/default/files/cbofiles/attachments/06-21-Long-Term_Budget_Outlook.pdf

FIGURE 3. CBO'S BASELINE BUDGET OUTLOOK

	Actual												2013–	2013–
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2017	2022
	In Billions of Dollars													
Total Revenues	2,302	2,523	2,988	3,313	3,568	3,784	4,039	4,243	4,456	4,680	4,926	5,181	17,692	41,179
Total Outlays	3,598	3,601	3,573	3,658	3,836	4,086	4,259	4,439	4,714	4,960	5,205	5,520	19,413	44,251
Social Security	725	770	814	857	902	950	1,004	1,063	1,128	1,197	1,269	1,345	4,527	10,530
Medicare	560	560	598	629	658	712	739	769	835	890	948	1,041	3,335	7,820
Medicaid	275	262	281	330	370	407	432	456	487	522	564	605	1,819	4,453
Total Deficit	−1,296	−1,079	−585	−345	−269	−302	−220	−196	−258	−280	−279	−339	−1,721	−3,072
On-Budget	−1,363	−1,130	−619	−363	−282	−318	−235	−206	−258	−265	−245	−283	−1,818	−3,074
Off-Budget	67	52	34	19	13	16	15	10	*	-16	-34	-55	97	2
Debt Held by the Public at the End of the Year	10,128	11,242	11,945	12,401	12,783	13,188	13,509	13,801	14,148	14,512	14,872	15,291	n.a.	n.a.
	As a Percentage of GDP													
Total Revenues	15.4	16.3	18.8	20.0	20.2	20.2	20.5	20.5	20.6	20.7	20.9	21.0	20.0	20.4
Total Outlays	24.1	23.2	22.5	22.1	21.8	21.8	21.6	21.5	21.8	21.9	22.0	22.4	21.9	21.9
Total Deficit	−8.7	−7.0	−3.7	−2.1	−1.5	−1.6	−1.1	−0.9	−1.2	−1.2	−1.2	−1.4	−1.9	-1.5
Debt Held by the Public at the End of the Year	67.7	72.5	75.1	74.8	72.6	70.5	68.5	66.8	65.5	64.2	63.0	62.0	n.a.	n.a.

Source: Congressional Budget Office, January 2012, http://cbo.gov/sites/default/files/cbofiles/attachments/01-31-2012_Outlook.pdf.
*Notes: GDP = gross domestic product; n.a. = not applicable; * = between -$500 million and zero.*
a. Off-budget surpluses comprise surpluses or deficits in the Social Security trust funds and the net cash flow of the Postal Service.

levels of debt and/or taxation required to sustain currently projected spending levels, a situation that must be repaired.

A brief review of federal finances as shown in figures 1–3 makes clear the central role of entitlement spending in driving these fiscal strains. In fiscal year (FY) 2011, for example, the federal government spent approximately $3.6 trillion, or almost 24 percent of GDP, while collecting $2.3 trillion in revenue. The result was a $1.3 trillion deficit.[13] While debt held by the public exceeded $10 trillion, or roughly 67 percent of GDP, by the end of FY2011, the national gross debt, which includes bonds such as those held in the Social Security trust fund, recently surpassed $15 trillion and is estimated to climb to more than 100 percent of GDP in FY2012.[14] Spending

13. Congressional Budget Office (CBO), "Monthly Budget Review, Fiscal Year 2011," October 7, 2011, http://www.cbo.gov/ftpdocs/124xx/doc12461/2011_10_07_MBR.pdf.
14. CBO, "Budget and Economic Outlook: An Update," August 24, 2011, https://www.cbo.gov/publication/41586.

FIGURE 4. DEFICITS PROJECTED IN CBO'S BASELINE AND UNDER AN ALTERNATIVE FISCAL SCENARIO

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total 2013–2017	Total 2013–2022
						In Billions of Dollars							
						CBO's March 2012 Baseline							
Revenues	2,456	2,968	3,283	3,589	3,838	4,066	4,272	4,484	4,719	4,962	5,218	17,744	41,398
Outlays	3,627	3,580	3,668	3,846	4,097	4,267	4,447	4,708	4,953	5,200	5,520	19,457	44,285
Deficit	−1,171	−612	−385	−257	−259	−201	−175	−224	−234	−237	−303	−1,713	−2,887
Debt Held by the Public at the End of the Year	11,347	12,068	12,556	12,909	13,263	13,560	13,820	14,123	14,432	14,741	15,115	n.a.	n.a.
						Alternative Fiscal Scenario							
Revenues	2,432	2,660	2,873	3,147	3,378	3,583	3,760	3,943	4,139	4,341	4,550	15,641	36,374
Outlays	3,627	3,660	3,826	4,030	4,312	4,520	4,739	5,046	5,338	5,635	5,999	20,348	47,105
Deficit	−1,195	−1,000	−953	−883	−934	−936	−979	−1,104	−1,199	−1,294	−1,449	−4,707	−10,731
Debt Held by the Public at the End of the Year	11,370	12,479	13,536	14,515	15,545	16,577	17,641	18,823	20,098	21,462	22,983	n.a.	n.a.
						As a Percentage of Gross Domestic Product							
						CBO's March 2012 Baseline							
Revenues	15.8	18.7	19.8	20.4	20.5	20.6	20.7	20.7	20.9	21.0	21.2	20.0	20.5
Outlays	23.4	22.5	22.1	21.8	21.9	21.7	21.5	21.8	21.9	22.0	22.4	22.0	22.0
Deficit	−7.6	−3.8	−2.3	−1.5	−1.4	−1.0	−0.8	−1.0	−1.0	−1.0	−1.2	−1.9	−1.4
Debt Held by the Public at the End of the Year	73.2	75.8	75.8	73.3	70.9	68.8	66.9	65.3	63.9	62.4	61.3	n.a.	n.a.
						Alternative Fiscal Scenario							
Revenues	15.7	16.7	17.3	17.9	18.1	18.2	18.2	18.2	18.3	18.4	18.5	17.7	18.0
Outlays	23.4	23.0	23.1	22.9	23.1	22.9	22.9	23.3	23.6	23.9	24.3	23.0	23.4
Deficit	−7.7	−6.3	−5.8	−5.0	−5.0	−4.8	−4.7	−5.1	−5.3	−5.5	−5.9	−5.3	−5.3
Debt Held by the Public at the End of the Year	73.3	78.4	81.7	82.4	83.1	84.1	85.4	87.1	88.9	90.9	93.2	n.a.	n.a.

Source: Congressional Budget Office, http://www.cbo.gov/sites/default/files/cbofiles/attachments/March2012Baseline.pdf.
Notes: The alternative fiscal scenario incorporates the assumptions that all expiring tax provisions (other than the payroll tax reduction), including those that expired at the end of December 2011, are instead extended; that the alternative minimum tax is indexed for inflation after 2011 (starting at the 2011 exemption amount); that Medicare's payment rates for physicians' services are held constant at their current level; and that the automatic enforcement procedures specified by the Budget Control Act of 2011 do not take effect. Outlays under the alternative fiscal scenario also include the incremental interest costs associated with projected additional borrowing.
n.a. = not applicable; GDP = gross domestic product.
a. Negative numbers indicate an increase in the deficit.

on the three largest federal entitlement programs (Social Security, Medicare, and Medicaid) in FY2011 accounted for more than $1.5 trillion, or roughly 44 percent of all federal noninterest spending.[15] Over the next couple of decades, both federal spending in general and the proportion attributable to entitlement spending are projected to rise dramatically.[16]

The magnitude of the spending problem becomes even more obvious when one examines current policy projections. The CBO's "Alternative Fiscal Scenario," shown in figure 4, is considered by many to be the most credible projection of current federal fiscal policy.[17] Under these estimates, revenues, which have fallen considerably due to the recession, are expected to return to their historical share of GDP (approximately 18 percent) within the next decade. Under this alternative fiscal scenario, by 2035 total federal outlays will have further increased by 10 percentage points to roughly 34 percent of GDP.[18] Also in 2035, the net ratio of debt held by the public to GDP will be an enormous 187 percent.[19]

The primary driver of this projected fiscal crisis is federal entitlement spending. By 2035, Social Security, Medicare, and Medicaid alone are projected to encompass roughly two-thirds of all noninterest federal spending, or nearly one-sixth of the nation's total economic output. As figures 5 and 6 show, the consequence of a failure to constrain these entitlement spending costs would be an explosion of the government's fiscal imbalance.

The sheer size of our federal entitlement spending commitments is by itself a grave threat to future U.S. economic growth. But even considered separately from their magnitudes, the designs of federal entitlement programs are problematic because they undermine economic growth in at least three ways: They encourage us to save less, to stop working earlier, and to have fewer children (the productive taxpayers of the future).

The pressing need for further reforms to Medicare, Medicaid, and other federal health entitlements has been widely documented. This paper, however, will focus directly on the more easily understood Social Security program, where changes to encourage labor force participation, improve incentives for saving, and other pro-growth reforms can be presented free of the complexities of problems unique to our health-care system.

15. Ibid.
16. CBO, "2012 Long-Term Budget Outlook," June 2012, table 1-2, p. 12.
17. Unlike the extended baseline scenario, the alternative fiscal scenario incorporates various changes to current law that are widely expected, many of which simply extend current policies.
18. CBO, "CBO's 2011 Long-Term Budget Outlook," June 2011, http://cbo.gov/publication/41486; CBO, "The Budget and Economic Outlook: Fiscal Years 2012 to 2022," January 2012, http://www.cbo.gov/publication/42905.
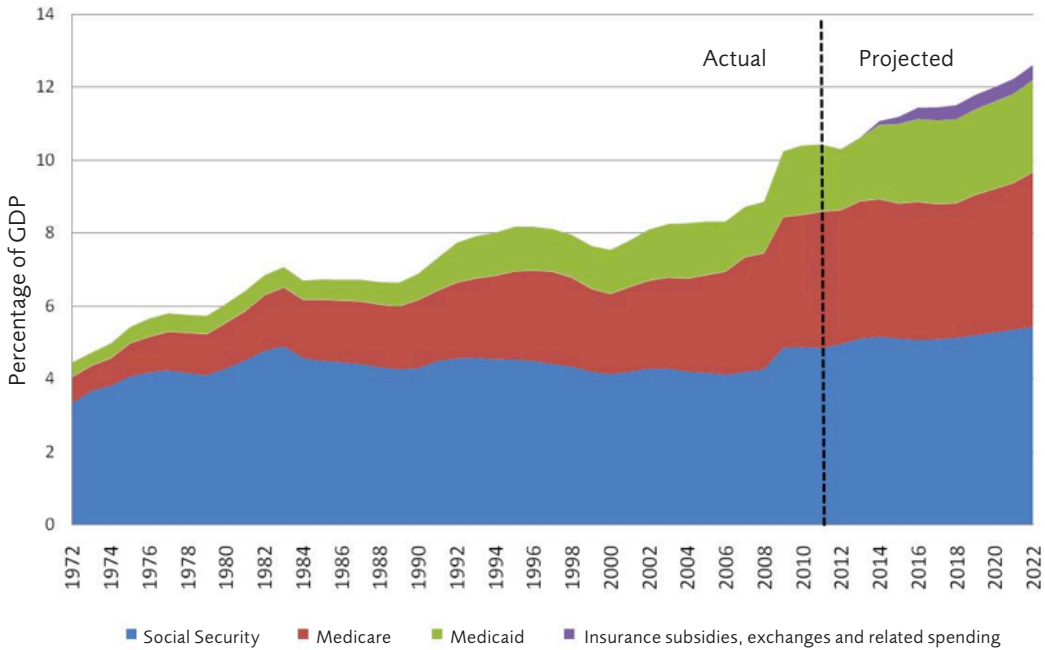19. CBO, "2011 Long-Term Budget Outlook"; CBO, "Budget and Economic Outlook."

FIGURE 5. FEDERAL LONG-TERM SPENDING IS UNSUSTAINABLE
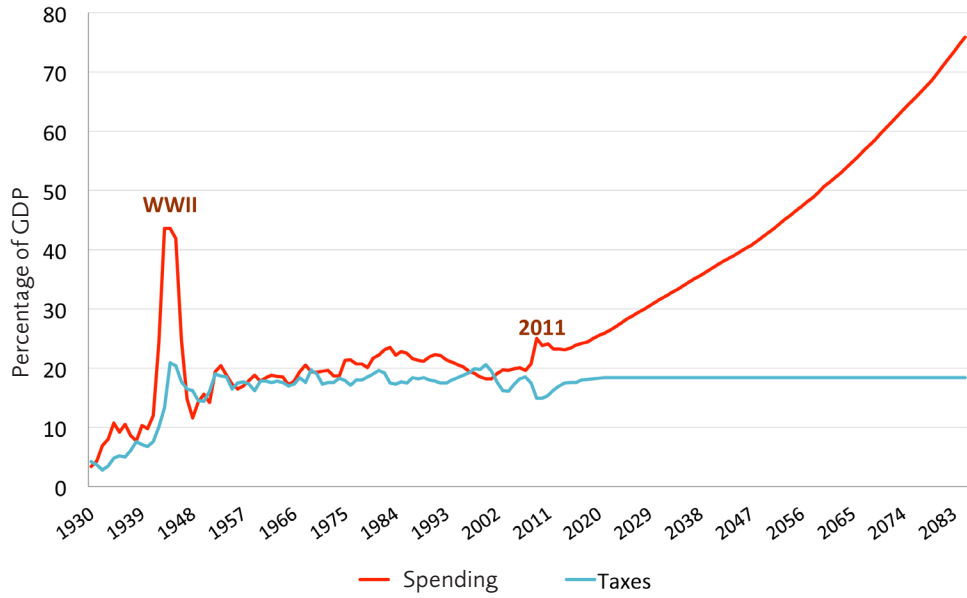
Authors' production based on data provided by Office of Management and Budget, Congressional Budget Office, Alternative Scenario, Long-Term Budget Outlook, June 2011
http://cbo.gov/sites/default/files/cbofiles/attachments/06-21-Long-Term_Budget_Outlook.pdf.

FIGURE 6. SPENDING ON SOCIAL SECURITY AND MAJOR HEALTH ENTITLEMENTS

Authors' production based on data provided by Office of Management and Budget, Congressional Budget Office, Alternative Scenario, Long-Term Budget Outlook, June 2011
http://cbo.gov/sites/default/files/cbofiles/attachments/06-21-Long-Term_Budget_Outlook.pdf.

II. SOCIAL SECURITY, PERSONAL SAVING, AND ECONOMIC GROWTH

Economists have long appreciated the positive effects of saving and investment on economic growth.[20] Research by Attanasio, Picci, and Scorcu provides a descriptive analysis of the correlations between saving, investment, and growth rates using data collected by the World Bank for over 150 countries covering the post-WWII era. Focusing their research on 123 countries over the period 1961–1994, they demonstrate robust findings that investment rates are positively correlated with economic growth.[21] Specifically, they find that saving increases investment which in turn increases economic growth. In describing but one specific example, Masih and Peters find that "there exists a significant role for savings in driving long-term economic growth in Mexico."[22]

Other research confirms that faster long-term economic growth is positively correlated with higher national saving. Furthermore, such saving is negatively correlated with government expenditures, government debt, and public health expenditures. In other words, as government spending and debt decline (or grow less rapidly), saving generally increases, and vice versa.

Data from the World Bank's World Development Indicators catalog demonstrate this correlation. Specifically, a simple regression model using data from the 31 high-income OECD countries and spanning the years 1971–2009 exhibits a clear correlation between saving and growth rates, as figure 7 shows.

A robust literature suggests that Social Security negatively impacts personal saving.[23] The reasons are rooted primarily in Social Security's design as a traditional pay-as-you-go (PAYGO) financed system, in which contributions paid by current younger workers are used to finance current benefits for older retirees. Another factor contributing negatively to personal saving behavior is the design of Social Security's benefit formula.

The essence of a PAYGO system is that it does not attempt to amass savings so as to finance future benefit obligations. Instead, a PAYGO system operates as a pure income transfer process without adding to the national stock of capital available to

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20. See, for example, Robert Barro, "Economic Growth in a Cross-Section of Countries," *Quarterly Journal of Economics* 106, no. 2 (1991); William Easterly et al., "Good Policy or Good Luck? Country Growth Performance and Temporary Shocks," *Journal of Monetary Economics* 32, no. 3 (1993); Doug Holtz-Eakin, Whitney Newey, and Harvey Rosen, "Estimating Vector Autoregressions with Panel Data," *Econometrica* 56, no. 6 (1988); and Gregory Mankiw, David Romer, and David Weil, "A Contribution to the Empirics of Economic Growth," *Quarterly Journal of Economics* 107, no. 2 (1992).

21. Orazio Attanasio, L. Picci, and A. Scorcu, "Saving, Growth, and Investment: A Macroeconomic Analysis Using a Panel of Countries," *Review of Economics and Statistics* 82 (May 2000).

22. Rumi Masih and S. Peters, "A Revisitation of the Savings-Growth Nexus in Mexico," *Economics Letters* 107, no. 3 (2010).

23. Emma Aguila, "Personal Retirement Accounts and Saving," *American Economic Journal: Economic Policy* 3, no. 4 (November 2011). Also see CBO, "Social Security and Private Saving: A Review of the Empirical Evidence," July 1998.

FIGURE 7. ECONOMETRIC MODELS

	Net Savings Rate	Per Capita Consumption	Per Capita Government Consumption	Per Capita GDP	Constant
Model I Dependent Variable: GDP Annual Rate of Growth	0.1274*** (0.0290)	0.0401 (0.0359)	-0.3295*** (0.0578)		5.0231* (2.6710)
Model II Dependent Variable: Per Capita Government Consumption	−0.7836*** (0.0165)	0.3016*** (0.0197)		0.00008*** (0.00001)	−4.5581*** (1.7085)
Model III Dependent Variable: Gross Capital Formation as % of GDP	0.1555*** (0.0320)	−0.1726*** (0.0380)		−0.00024*** (0.00002)	39.7209*** (3.3035)
Model IV Dependent Variable: Government Debt as % of GDP	−1.4457*** (0.1900)	−1.200*** (0.2979)		−0.0023*** (0.0003)	203.2712*** (26.1100)
Model V Dependent Variable: Public Health Expenditure as % of GDP	−0.0270*** (0.0080)	0.1227*** (0.0115)		0.00013*** (0.00001)	−5.8053*** (1.0073)

Author calculations based on World Bank (2011) data. Data retrieved September 27, 2011, from World Development Indicators Online (WDI) database. The modeling based on the WDI database is a high-level look at the relationships between the variables.

*Notes: *** Statistically significant at the 0.01 level * Statistically significant at the 0.1 level. Statistical significance indicates the likelihood that the observed relationship is due to chance. For the coefficients listed, "***" indicates a less than 1 percent probability that the estimated relationship is obtained by chance and "*" indicates a less than 10 percent probability that the estimated relationship is obtained by chance. Standard errors are in parenthesis.*

finance retirement benefits. A PAYGO system by its very nature requires maintaining a sufficient number of workers per retiree to support benefit payments. If the ratio of workers to retirees falls, then unless there are immediate benefit cuts, higher taxes or borrowing is necessary—both of which further retard economic growth.

In some respects, the current design of Social Security creates the worst of both worlds from the standpoint of facilitating retirement saving, largely because the accumulation of a large Social Security trust fund creates the *illusion* of savings already put aside to finance future benefits, thereby deterring some personal saving that might otherwise take place. But while the Treasury bonds in the program's trust fund represent assets of the Social Security program and increase its authority to make benefit payments, most academic studies have concluded that the bonds' presence has stimulated additional federal consumption rather than adding to national savings.[24] The existence of the trust fund thus causes many workers to believe that more retirement savings are being put aside on their behalf than is actually the case.

Facing financing challenges to PAYGO social retirement systems, some countries

24. See John Shoven and Shita Nataraj, "Are Trust Fund Surpluses Spent or Saved?" *NBER Bulletin on Aging and Health* 10 (Winter 2004/05), http://www.nber.org/aginghealth/winter05/w10953.html; and Kent Smetters, "Is the Social Security Trust Fund Worth Anything?" (NBER Working Paper No. 9845, Cambridge, MA, July 2003), http://www.nber.org/papers/w9845.

in Latin America, Eastern Europe, and Asia have transitioned away from such systems toward ones based on private accounts or on a hybrid of PAYGO and advance funding. Though national pension systems in which individuals accrue benefits through personally owned accounts introduce a number of important policy challenges and contentious value judgments, research generally shows them to have positive effects on private saving. For example, in 1998, Carlos Sales-Sarrapy and other researchers estimated an increase in private saving of 2.18 percent of GDP in the first year Mexico introduced private accounts.[25] Chile also moved its social retirement system away from a PAYGO-financed system toward private accounts, and the positive results for personal savings were dramatic:

> According to economist Klaus Schmidt-Hebbel, the rate of growth of the Chilean economy went from an average of 3.7 percent per year, in the period from 1961 through 1974, to 7.1 percent per year in the period from 1990 through 1997, and of that extra growth of 3.4 percentage points per year, the pension reform would have contributed .9 percentage points per year, that is, more than a quarter of the total. Of the total increase of 12.2 percentage points in the rate of savings during those two periods, the pension reform contributed 3.8 percentage points, that is, 31 percent of the total increase. [26]

Beyond the question of whether a national pension system should be financed on a PAYGO or advance-funded basis, the growth of national pension benefits themselves bears directly on individual savings incentives. For many lower-income, liquidity-constrained individuals, it is simply not rational to engage in additional long-term saving if they believe they can rely on most of their scheduled Social Security benefits. Research by Andrew Biggs and Glenn Springstead shows that retired beneficiaries in the second income quintile receive Social Security benefits that exceed 80 percent of their final previous earnings, and that those in the bottom income quintile routinely receive benefits that far exceed 100 percent of previous earnings.[27] For millions of low-income individuals, progressive and wage-indexed Social Security benefits render it irrational to put aside further retirement saving.

Millions of Americans have independently reached this conclusion, with 64 percent of all aged beneficiary units relying on Social Security for 50 percent or more of

25. Carlos Sales-Sarrapy, Fernando Solís-Soberón, and Alejandro Villagómez-Amezcua, "Pension System Reform: The Mexican Case," in *Privatizing Social Security*, ed. Martin Feldstein (Chicago: University of Chicago Press, 1998), referenced in Aguila, "Personal Retirement Accounts and Saving."

26. José Piñera, "Liberating Workers: The World Pension Revolution," *Cato's Letter* no. 15 (2001), http://www.cato.org/pubs/catosletters/cl-15.pdf.

27. Andrew G. Biggs and Glenn R. Springstead, "Alternative Measures of Replacement Rates for Social Security Benefits," *Social Security Bulletin* 68, no. 2 (2008).

their income,[28] and 34 percent relying on Social Security for 90 percent or more of their income.[29] This would not be the case if Social Security had left these individuals with both the incentive and the discretionary income to put aside substantial additional savings during their working years.

As a result, analyses of proposals either to constrain the growth of scheduled Social Security benefits or to incorporate a savings component into the program show higher projected savings and growth rates than proposals that do not. For example, the CBO published separate analyses of two different Social Security reform proposals in 2004. A proposal by Peter Diamond and Peter Orszag relied primarily on raising taxes,[30] while a proposal by President George W. Bush's bipartisan 2001 commission would have both reduced the growth of PAYGO benefits and created private accounts. When considering the impact on saving, the CBO stated that under President Bush's commission plan, "national wealth (the sum of private wealth and cumulative budget surpluses) would be 10 percent to 12 percent higher in 2080 than it would be under the baseline scenario."[31] By contrast, the CBO found that the Diamond–Orszag proposal would reduce projected GNP relative to the baseline.

In sum, adequate personal and national saving is a requirement for robust economic growth. So as not to inhibit the realization of this objective, Social Security and other federal entitlements should be reformed to constrain the growth of unfunded PAYGO liabilities and to remove disincentives for personal saving.

III. SOCIAL SECURITY'S NEGATIVE EFFECTS UPON LABOR FORCE PARTICIPATION

LABOR FORCE PARTICIPATION bears a straightforward relationship to economic growth: aggregate growth is equal to the growth in productivity per worker times the growth in the number of workers. Our national economic growth is therefore highly dependent upon individual decisions to participate in the labor force and to contribute to the growth of the larger economy. To realize our potential for future growth, the reforms that we must inevitably make to repair the finances of Social Security and other federal entitlement programs should also involve close attention

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28. An aged beneficiary unit can be either a married couple living together or a nonmarried person, also including persons who are separated or married but not living together.

29. Social Security Administration (SSA), "Relative Importance of Social Security, 2008," *Fast Facts & Figures,* August 2010, http://www.ssa.gov/policy/docs/chartbooks/fast_facts/2010/fast_facts10. html#agedpop.

30. Douglas Holtz-Eakin to Larry E. Craig, "Long-Term Analysis of the Diamond-Orszag Social Security Plan," December 22, 2004, http://www.cbo.gov/ftpdocs/60xx/doc6044/12-22-Diamond-Orszag.pdf.

31. Douglas Holtz-Eakin to Larry E. Craig, "Long-Term Analysis of Plan 2 of the President's Commission to Strengthen Social Security," July 21, 2004 (updated September 30, 2004), http://www.cbo.gov/ftpdocs/56xx/doc5666/07-21-CraigLetterUpdated.pdf.

to influences upon work participation, particularly at the margins when those in late middle age are weighing whether to continue their working careers or to begin their transition into retirement.

Most analyses of Social Security have concluded that its current design offers substantially negative incentives for work, especially for younger seniors and for secondary household earners. Research by Reznik, Weaver, and Biggs has found that Social Security's return on payroll tax contributions by those aged 62 to 65 is a −49.5 percent,[32] meaning that the program literally pays back just pennies in additional benefits for each additional dollar contributed. Butrica et al. have found that the broader array of federal laws strongly inhibits continued work by seniors, with disincentives growing stronger as they age: "The implicit tax rate on work increases rapidly with age, rising for our representative worker from 14 percent at age 55 to 50 percent at age 70."[33]

Social Security specifically disincents taxpaying work by more than one earner per household. Incremental returns on taxes paid by women have been estimated at -32.0 percent relative to what they would receive by staying out of the paid workforce altogether and instead often collecting the nonworking spouse benefit.[34] As a general rule, Social Security aggressively redistributes income from two-earner married couples to one-earner married couples, thus penalizing a household decision to have both spouses work and contribute payroll taxes. For example, a medium-wage two-earner couple, both born in 1955, expects to receive back only 80 cents from Social Security on each dollar contributed (in present value), whereas a one-earner couple would expect to receive $1.39.[35]

Despite the complexities of determining one's net effective tax rate on Social Security-covered work, there is evidence that individuals do respond rationally to these incentives. As Liebman, Luttner, and Seif determined in a 2008 paper, "Our estimates conclusively reject the notion that labor supply is completely unresponsive to the incentives generated by the Social Security benefit rules. We find reasonably robust and statistically significant evidence that individuals are more likely to retire when the effective marginal Social Security tax is high."[36] For most seniors, these effective marginal tax rates are indeed enormously high, for reasons we will explain below.

Social Security's work disincentives are, in part, residual artifacts of policy

32. Gayle Reznik, David Weaver, and Andrew Biggs, "Social Security and Marginal Returns to Work near Retirement," SSA, April 2009, http://www.ssa.gov/policy/docs/issuepapers/ip2009-02.html

33. Barbara A. Butrica et al., *Does Work Pay at Older Ages?* (Washington, DC: Urban Institute, December 2004), http://www.urban.org/uploadedpdf/411121_DoesWorkPay.pdf.

34. April 2007 memorandum from SSA to Charles Blahous.

35. Social Security Online, "Moneys Worth Ratios Under the OASDI Program for Hypothetical Workers," Actuarial Publications, http://www.ssa.gov/OACT/NOTES/ran7/index.html.

36. See Jeffrey B. Liebman, Erzo F. P. Luttner, and David G. Self, "Labor Supply Responses to Marginal Social Security Benefits: Evidence from Discontinuities," May 8, 2009, http://www.nber.org/~luttmer/ssbenefitlink.pdf.

concerns held when the program was first created in 1935. Policy makers at the time faced multiple urgent economic problems, including destitution among the elderly, as well as stubbornly high unemployment among younger workers. Often forgotten is that the original Social Security Act consisted of several titles and what is popularly known today as "Social Security" composed just one (title II, "Federal Old-Age Benefits"). However, the legislation's sweeping name of "Social Security" was appropriate, as the original vision for the program indeed extended well beyond the matter of providing benefits for the aged; provisions to do so were integrated with other titles providing for unemployment compensation, maternal/child welfare, and support for the blind, among others.[37]

The 1935 report of President Roosevelt's Committee on Economic Security, so influential in the design of Social Security, made clear that policy makers saw the new old-age benefit program as part of a comprehensive approach to relieving the ills of sustained unemployment. Indeed, the first sections of the report focused not on retirement but on unemployment with repeated statements along the lines of, "any program for economic security that is devised must be more comprehensive than unemployment compensation."[38] President Roosevelt's address at the time of the committee's creation reflected a similarly comprehensive view: "The various types of social insurance are interrelated; and I think it is difficult to attempt to solve them piecemeal. Hence, I am looking for a sound means which I can recommend to provide at once security against several of the great disturbing factors in life—especially those which relate to unemployment and old age."[39]

The commission's eventual report reflected a contemporary view in which insurmountable obstacles, including both physical deterioration and hostile economic conditions, rendered it fruitless to adopt any policy toward the elderly other than to provide government support for their necessary withdrawal from the workforce. As the report stated, "The depression has largely wiped out wage earners' savings and has deprived millions of workers past middle life of their jobs, with but uncertain prospects of ever again returning to steady employment. For years there has been some tendency toward a decrease in the percentage of old people gainfully employed. Employment difficulties for middle-aged and older workers have been increasing, and there is little possibility that there will be a reversal of this trend in the near future."[40]

Given this context, it is understandable that Social Security was designed with scant attention to providing reasonable returns for those seniors who remained *in*

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37. Social Security Online, "Legislative History: 1935 Social Security Act," http://www.ssa.gov/history/35actinx.html; Social Security Online, "Report of the Committee on Economic Security: Need for Security," http://www.ssa.gov/history/reports/ces/ces5.html.

38. Social Security Online, "Report of the Committee on Economic Security: Needs for Security," http://www.ssa.gov/history/reports/ces/ces5.html.

39. Social Security Online, "FDR's Statements on Social Security," http://www.ssa.gov/history/fdrstmts.html.

40. Social Security Online, "Report of the Committee on Economic Security."

the workforce. The focus was instead on providing for their departure and on clearing employment opportunities for the young. In large part because of this focus, the program is ill-adapted to our very different 21st-century realities, when our future aggregate economic growth (as well as the stability of Social Security itself) is greatly threatened by the massive *withdrawal* of millions of Baby Boomers from the taxpaying workforce, including many who possess both valuable job skills and continued good health.

The Social Security Act well succeeded in its aim of nudging older Americans out of the ranks of those seeking employment. Civilian labor force participation rates for those 65 and older dropped from 26.7 percent in 1950 to 12.5 percent in 1980.[41] As figure 8 shows, the decline was particularly sharp for males over 65, of whom 45.8 percent were in the workforce in 1950 but only 19.0 percent were in the workforce in 1980 despite national gains in longevity and health. A Bureau of Labor Statistics (BLS) publication attributes this decline to Social Security: "In the 1950s, a sharp drop occurred in labor force participation for men 65 and older, as Social Security retirements affected labor force participation rates."[42]

Notably, labor force participation did *not* immediately decline for those younger than 65 (and thus originally ineligible for Social Security benefits) until Social Security's Early Eligibility Age (EEA) of 62 was later established.[43] After the creation of the EEA, labor force participation by males aged 55–64 also began to trend downward, from 87.3 percent in 1960 to 67.7 percent by 1990. As the BLS publication notes, "Labor force participation decreases started in the 1960s for those 55 to 64. Since this time, some of the 20-percentage points decrease for men in this age group has to be attributed to the availability of Social Security benefits to men 62 years of age."[44] The BLS report also notes the new availability of Social Security's disability benefits and suggests that they further dampened middle-aged labor force participation.

Though this sustained trend toward early retirement has bottomed out and begun to reverse somewhat in recent years, Social Security on balance clearly remains a substantial barrier to labor participation by Americans in their late middle age. For example, seniors who continue to work after claiming Social Security benefits at 62 (but before Normal Retirement Age, or NRA) are subject to an earnings limitation under which they are required to temporarily give up as much as $1 in benefits for every $2 earned above a $14,160 threshold.[45] This rule is but one of the program's facets that nudge individuals into early retirement.

41. Howard N. Fullerton, Jr., "Labor Force Participation: 75 Years of Change, 1950–98 and 1998–2025," *Monthly Labor Review* (December 1999): 3–12, http://www.bls.gov/mlr/1999/12/art1full.pdf.
42. Ibid.
43. Geoffrey Kollmann, "Social Security: Summary of Major Changes in the Cash Benefits Program," May 18, 2000, http://www.ssa.gov/history/reports/crsleghist2.html. The option was created for women in the 1956 amendments and for men in the 1961 amendments.
44. Fullerton, "Labor Force Participation."
45. SSA, *How Work Affects Your Benefits*, March 2012, http://ssa.gov/pubs/10069.html#howmuch.

FIGURE 8. CIVILIAN LABOR FORCE PARTICIPATION RATES, MALES 65 AND OLDER
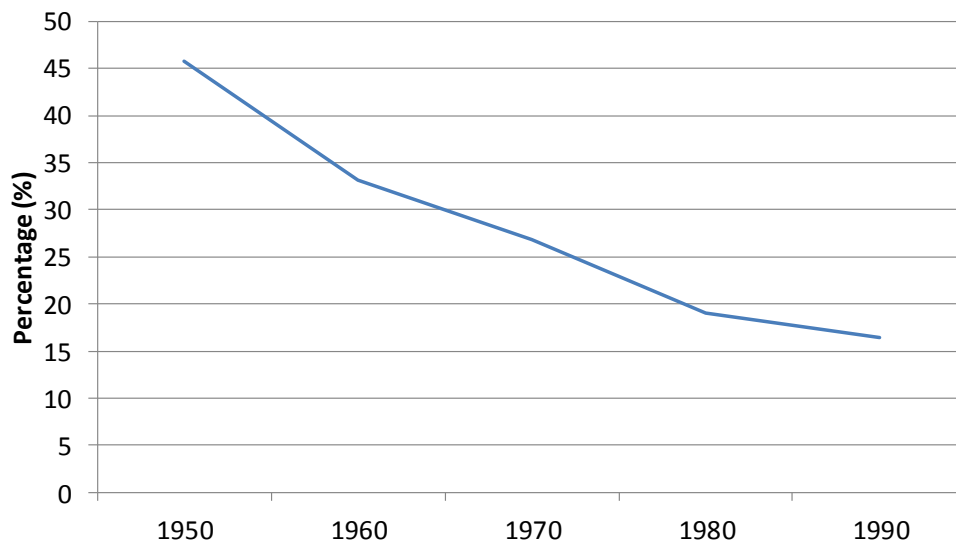
Source: Bureau of Labor Statistics

Social Security's EEA of 62 is in fact the most common age of benefit claiming.[46] Over 70 percent of beneficiaries take advantage of the opportunity to claim Social Security retirement benefits prior to NRA, despite receiving lower monthly benefits when doing so.[47] Social Security Administration (SSA) field offices often encouraged early retirement under the mistaken belief that it leaves beneficiaries better off. Early retirement is only certain to make beneficiaries better off in the short run, however. The reduction in monthly benefits that accompanies early claims also results in net *lifetime* benefit reductions for those who live to an especially advanced age, the time in life when beneficiaries are more likely to need Social Security benefits to pay their expenses. Fortunately, the SSA has more recently adopted policies recognizing that individual circumstances must be carefully considered when determining one's optimal age for claiming benefits.[48]

The program's numerous work disincentives remain, however.[49] The basic Social Security benefit formula is itself designed to impose net incremental income losses on those who extend their working careers. Previous writings of Blahous;[50] Goda,

46. SSA, "Old-Age, Survivors and Disability Insurance," *Annual Statistical Supplement 2010*, http://www.ssa.gov/policy/docs/statcomps/supplement/2010/6b.html.

47. Ibid.

48. SSA, "When to Start Receiving Retirement Benefits," August 2012, http://www.socialsecurity.gov/pubs/10147.pdf.

49. SSA, "When to Start Receiving Retirement Benefits," August 2012, http://www.socialsecurity.gov/pubs/10147.pdf.

50. Ibid.

Shoven, and Slavov;[51] and others have explained how returns on contributions generally diminish the longer one works and why they become even more sharply negative once a worker has contributed for 35 years.

The primary reasons for the work disincentives are the facts that the Social Security benefit formula is progressive, while also based on a worker's top 35 years of earnings on *average*. Thus, the longer one works, the more "zero earnings years" in one's wage history are replaced with positive earnings years and the more one's "average earnings" rise (so that one is gradually considered a relatively higher-wage earner), and thus the worse one's returns under the program's progressive benefit formula.[52] The worsening becomes particularly pronounced after 35 years of earnings,[53] when the best a worker can hope for is to replace a previous year in the highest 35 years of one's wage history with a higher earnings year. That is to say, after 35 years of work, one's benefit can only rise in proportion to the *differential* between two previous earnings years, despite paying a *full* additional year of payroll taxes. Indeed, someone who takes a part-time "transition job" on the way to full retirement may well pay a full year's worth of additional taxes while receiving no additional benefit credits whatsoever. This embodies a substantial work disincentive at precisely the time that a worker is likely to make a retirement decision.

Figure 9 provides a simple example of these substantial work disincentives in operation. Consider a worker who has worked a full career with wage-adjusted average earnings of $60,000. The worker is considering taking a part-time "transition job," which would pay $30,000 a year, on the way to full retirement. Applying the 12.4 percent Social Security payroll tax to these earnings, the worker would contribute an additional $3,720 in Social Security taxes.[54] Assume for illustration that the $30,000 transition job would displace an earnings year of $19,500 (wage-adjusted) that would otherwise be the 35th highest earnings year in that worker's wage history. This substitution would cause his career average earnings to increase only slightly from $60,000 to $60,300. Applying the benefit formula's 15 percent "bend point factor" to the additional $300 in average earnings results in only $45 more in annual Social Security benefits for the additional $3,720 in payroll tax assessments.[55] This worker would thus have to collect retirement benefits for over 80 years simply to recover the nominal value of the additional payroll taxes paid, and for centuries to recover their interest-compounded value. For this reasonably typical worker, Social Security offers very poor treatment of continued work.

51. Gopi Shah Goda, John B. Shoven, and Sita Nataraj Slavov, "Removing the Disincentives in Social Security for Long Careers," NBER, December 15, 2006, http://www.nber.org/programs/ag/rrc/NB06-06%20Goda,%20Shoven,%20Slavov%20FINAL.pdf.

52. See Testimony of Charles Blahous before the Subcommittee on Social Security of the U.S. House of Representatives Committee on Ways and Means, July 8, 2011.

53. Goda, Shoven, and Slavov, "Removing the Disincentives."

54. Technically the worker and his employer contribute, though economists generally agree that both ends of the payroll tax reduce wage compensation.

55. This calculation assumes that the worker retires at the normal retirement age.

FIGURE 9. EXAMPLES OF WORK DISINCENTIVES IN OPERATION

Hypothetical Worker's Career Earnings Average (Wage Adjusted)	$60,000
Hypothetical Worker's Part-Time "Transition Job to Retirement" Offer	$30,000
Payroll Taxes to Be Paid for/by Worker If Job Accepted ($30,000 x 12.4%)	$3,720
Hypothetical Worker's Previous 35th-Highest Earnings Year (Wage Adjusted)	$19,500
Change to Aggregate Career Earnings Profile If Job Accepted ($30,000–$19,500)	$10,500
Change to Career 35-Year Average Earnings If Job Accepted ($10,500/35)	$300
New Career Earnings Average If Job Accepted	$60,300
Additional Annual Social Security Benefits If Job Accepted ($300 x 15%)	$45

Source: Author calculations based on hypothetical example

Social Security's nonworking spouse benefit is also a considerable disincentive to labor force participation. An individual without any history of paid employment can be entitled to receive a benefit equal to 50 percent of his or her spouse's earned benefit. Consequently, an individual who is married to a high-wage earner may receive a benefit well exceeding what another individual might earn based on an entire working career of payroll tax contributions.

These various features of Social Security—from benefit eligibility at age 62, to the earnings limitation, to the nonworking spouse benefit, to the technical details of its benefit formula, to others—all act as a drag on labor force participation and thus interfere with the goal of maximizing future economic growth.

IV. THE FISCAL IMPORTANCE OF LABOR FORCE PARTICIPATION

THE FINANCIAL UNSUSTAINABILITY of current federal entitlement programs is substantially attributable to insufficient projected growth in the U.S. labor force. This conclusion can be substantiated by some simple math. Social Security's initial benefit formula, for example, increases along with growth in the national Average Wage Index.[56] Because program payroll tax revenues also automatically grow with national wages, this benefit formula would be financially sustainable within a stable tax rate if the worker-to-beneficiary ratio never declined—that is to say, if gains in longevity and health were always matched by proportional increases in

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56. The Average Wage Index is a measure of average wages in the economy as a whole. It is explained in greater detail in a number of Social Security Administration Office of the Actuary publications, including "Average Wages for Indexing Under the Social Security Act," Actuarial Note 103, May 1981, http://www.ssa.gov/oact/NOTES/note1980s/note103/introduction.html.

the durations of workers' taxpaying careers.[57] This proportionality, however, is not being maintained. Worker–beneficiary ratios are projected to become much more unfavorable going forward, as figure 10 shows.

The previous decline in Social Security's worker–beneficiary ratios during the 1960s reflected the gradual implementation of various program expansions. Worsening future ratios, however, reflect one phenomenon more than any other: the withdrawal of the Baby Boom generation from the labor force.

Though press attention rightly focuses on how the Boomers' Social Security and Medicare benefit claims will increase federal outlays, the other side of the coin is the corresponding reduction in labor force growth rates as the Boomers cease working. Whereas from 1963 through 1990 inclusive, annual labor force growth rates never once dropped below 1.2 percent despite periodic recessions, from 2019 onward labor force growth rates are projected never to exceed even half that rate (0.6 percent), as figure 11 shows.

Trends in labor force growth rates can readily be seen to correlate closely with rates of real GDP growth. Though a graph of past and projected real GDP growth exhibits more noise than labor force growth, the general correlation with labor force growth is nevertheless clearly visible, as figure 12 illustrates.

Thus, to the extent that Baby Boomers and subsequent generations perceive greater rewards for extending their working lives, the picture of our national economic future will brighten enormously.

It bears emphasis that workforce participation trends among those in their 60s are not driven primarily by issues of physical incapacity. As we have seen, labor force participation among males over 65 was much higher in the mid twentieth century than it is now despite substantial gains in national health and longevity since then. Incentives have played a much greater role. Beyond the fact that it is generally more attractive to enjoy additional years of leisure rather than to continue work, our federal entitlement policies have made the decision to retire virtually irresistible financially as well. Given these incentives, it is unsurprising that our future economic growth outlook is depressed by current projections for labor force participation, relative to what would be the case if more of our national gains in longevity and health were converted into longer periods of taxpaying work.

The financial gains of longer work careers for federal entitlement programs are straightforward: more years of worker tax contributions combined with fewer years of their withdrawing benefits. Labor force participation is sufficiently significant to Social Security finances that the 2011 Technical Panel of the Social Security Advisory Board recently recommended adding labor force participation rates to

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57. This scenario is complicated somewhat by the fact that benefits after initial claim are adjusted for growth in the Consumer Price Index, but it is nevertheless true as a zeroth-order approximation.
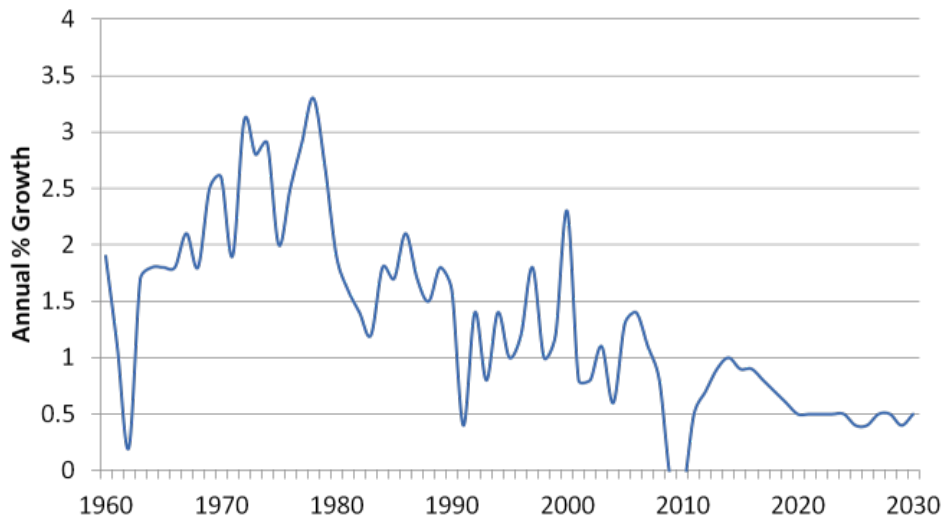
**FIGURE 10. SOCIAL SECURITY WORK-BENEFICIARY RATIOS, 1960–2030
(PAST AND PROJECTED)**
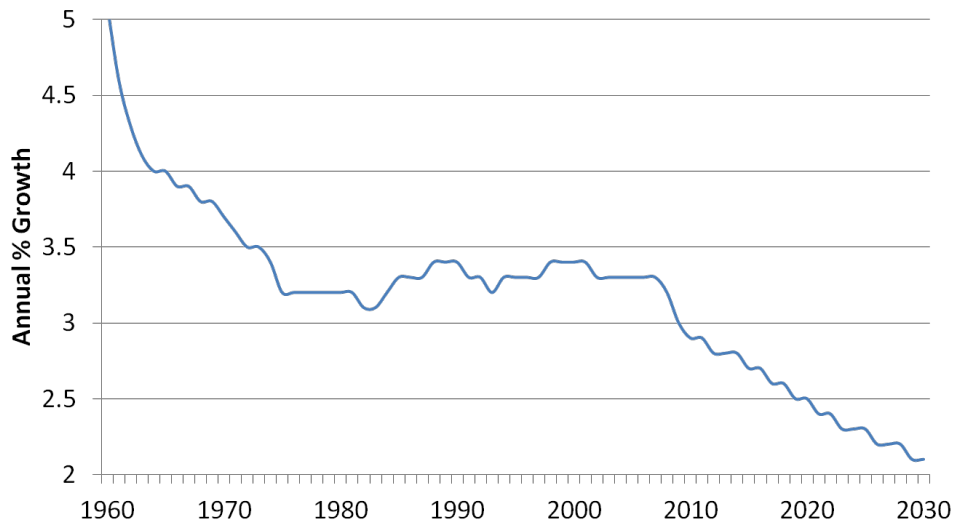
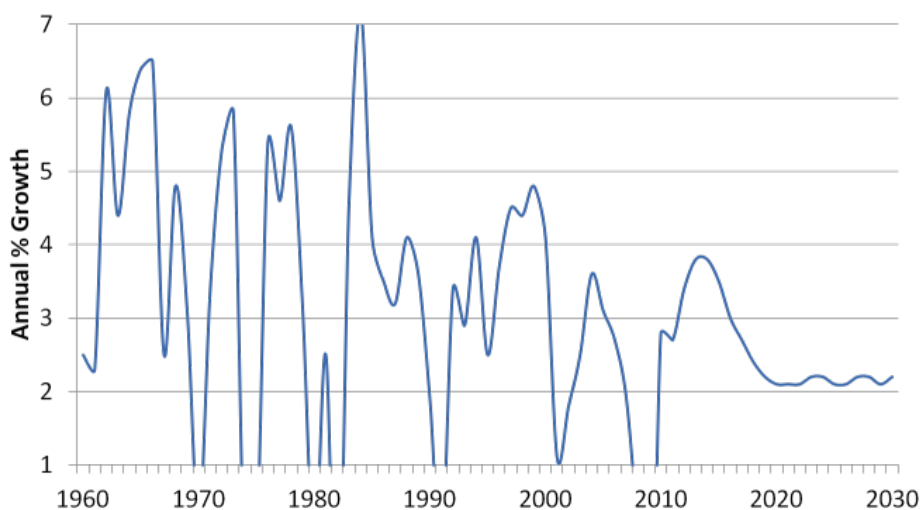*Source: 2011 Social Security Trustees' Report*

FIGURE 11. LABOR FORCE GROWTH RATES, 1960–2030 (PAST AND PROJECTED)

Source: 2011 Social Security Trustees' Report

FIGURE 12. REAL GDP GROWTH RATES, 1960–2030 (PAST AND PROJECTED)

Source: 2011 Social Security Trustees' Report

the Trustees' Reports' annual summaries of the variables significantly affecting their projections.[58]

The economic benefits of longer work careers well exceed, however, what is shown in federal scorekeepers' analyses of program finances. Repeal of the Social Security earnings limitation, for example, is scored under current SSA methodology as actuarially neutral although it would almost certainly incent longer working careers, both generating additional government tax revenue and benefiting the economy as a whole. Similarly, proposals to raise Social Security's EEA of 62 are not scored by the Social Security actuaries as producing direct financial gains for the program, though the change would better incent taxpaying work by those in their early 60s.

A recent Congressional Budget Office (CBO) analysis of raising the EEA acknowledges this effect conceptually but does not attempt to quantify it: ". . . this option also would probably lead workers to remain employed longer, which would increase the size of the workforce and boost federal revenues from income and payroll taxes. Moreover, the additional work would result in higher future Social Security benefits, although the increase in benefits would be smaller than the increase in revenues." But: "The 10-year estimates for this option do not include those two

58.   2011 Technical Panel Report on Assumptions and Methods, "Report to the Social Security Advisory Board," September 2011, http://www.ssab.gov/Publications/Financing/2011_Technical_Panel_Report_prepublication.pdf.

effects."[59] Other CBO analyses, including those of the Diamond–Orszag and Bush commission proposals described in section 2, quantify some potential advantages of reforming Social Security benefits for promoting economic growth. The CBO found that the Bush commission plan to constrain the growth of benefits beyond price inflation would increase national GNP relative to the budget baseline whereas the Diamond–Orszag proposal to raise Social Security taxes would reduce it. These findings in turn reflected analyses that the Bush commission proposal "could cause some people to work longer or harder,"[60] whereas under the Diamond–Orszag proposal, "households would choose more leisure."[61]

Extended workforce participation would pay dividends for individual seniors as well as for the economy as a whole. As Butrica et al. noted in 2004, "Working longer increases the net output and productivity of the economy, generates additional payroll and income tax revenue, and reduces the number of years that individuals receive retirement benefits . . . [P]eople could increase their annual consumption at older ages by more than 25 percent simply by retiring at age 67 instead of age 62. The increased tax revenues generated by this work could be used to support a wide range of government services, including public support for the aged."[62]

For these and many other reasons, Social Security reform as well as broader entitlement reform should be undertaken with an eye toward rewarding those in late middle age who decide to extend their working careers.

V. SOCIAL SECURITY REFORMS TO IMPROVE WORK INCENTIVES

A NUMBER OF Social Security reforms could be implemented to better incent continued work by seniors. Some of these changes would produce net direct savings for the program, whereas others would benefit individual participants at some expense to program finances.

The often-discussed proposals to raise Social Security eligibility ages would likely have a positive effect on worker output and economic growth. With age 62 now being the most popular age of benefit claim, raising the EEA would necessarily delay many claims and would likely be correlated with continued work.[63] Biggs has estimated that raising the EEA to 65 would increase long-run GDP by 3–4 percent.[64]

59. *Reducing the Deficit: Spending and Revenue Options* (Washington, DC: CBO, March 2011), 63, http://www.cbo.gov/ftpdocs/120xx/doc12085/03-10-ReducingTheDeficit.pdf.
60. Holtz-Eakin to Craig, "Long-Term Analysis of Plan 2."
61. Holtz-Eakin to Craig, "Diamond-Orszag Social Security Plan."
62. Butrica et al., "Does Work Pay at Older Ages?"
63. American Academy of Actuaries, "Raising the Retirement Age for Social Security," Issue Brief, October 2010, http://www.actuary.org/pdf/socialsecurity/Social_Sec_Retirement_Age_IB_FINAL_10_7_10_2.pdf; Andrew G. Biggs, "The Case for Raising Social Security's Early Retirement Age," *Retirement Policy Outlook*, October 27, 2010, http://www.aei.org/outlook/100999; Richard W. Johnson, "Raise the Retirement Age, but Protect Those Who Can't Work," Urban Institute, February 28, 2011, http://www.urban.org/publications/901411.html.
64. Biggs, "Raising Social Security's Early Retirement Age."

Though raising eligibility ages is politically controversial, certain key points should be borne in mind about this option. One is that an EEA increase of even three years would merely bring the age of earliest claim again to what it was at the program's inception, without beginning to adjust for substantial health and longevity gains since then. Period life expectancy at birth, meanwhile, has grown by over 14 years since 1940, while life expectancy at 65 has grown by more than six years.[65] A second critical point is that raising the EEA to bring it closer to the NRA would likely *reduce* poverty among seniors, as they would be subject to less of an early retirement penalty. As previously noted, annual benefits under Social Security law are adjusted downward from full benefit levels in proportion to how early one claims before reaching the NRA in order to keep expected lifetime benefits constant regardless of the age of claim; some of the risk of old-age poverty resides with seniors who myopically retire early, have "too low" an annual benefit, and then later outlive their other savings.

Another positive work incentive could be created by increasing the program's actuarial penalty for early retirement as well as its delayed retirement credit (DRC). The current actuarial penalty for early retirement is a 25 percent reduction in annual benefits for those who retire at 62, four years before the current NRA of 66, or about a 6 percent reduction for each year; the delayed retirement credit is an 8 percent increase in annual benefits for each year (up to age 70) that claims are delayed beyond the NRA. For someone delaying claiming until age 70, this credit amounts to a 32 percent increase in the monthly benefit.[66] These current-law adjustments hold expected lifetime benefits constant for a typical retiree, and thus do not account for the value of additional payroll taxes likely contributed if an individual delays benefit claiming and continues working. Increasing these adjustments may better reflect the value of additional payroll taxes contributed by working seniors.

The various reforms mentioned above would likely be useful if enacted separately but would work best in tandem. Steepening the actuarial penalty for early benefit claims could, despite its other policy benefits, potentially worsen some early claimants' subsequent risk of poverty if enacted as a standalone measure, but would not do so if accompanied by an increase in the EEA.

Offering the DRC as a lump sum option could potentially provide an additional incentive to continued work without creating a financial cost to the system. The current DRC offers an increase in one's monthly Social Security benefit, proportional to the time over which the benefit claim is delayed. However, only a minority (approximately 5 percent in 2010) take advantage of this option.[67] It is also worth noting that almost 72 percent of those claiming retirement benefits in 2010 did so

65. Social Security Online, "Period Life Expectancy," Actuarial Publications, 2011 Trustees Report, http://www.ssa.gov/OACT/TR/2011/lr5a3.html.

66. SSA, "When to Start Receiving Retirement Benefits."

67. SSA, "Old-Age, Survivors, and Disability Insurance: Benefits Awarded."

before their normal retirement age, thus receiving reduced monthly benefits.[68] An option potentially more attractive to workers would be to allow an individual to receive the entire DRC as a lump sum when claimed, while also receiving the basic monthly benefit as it would have been calculated at NRA. This option could potentially allow claimants to receive a lump sum of tens of thousands of dollars on the date of their delayed claim.

The precise amount of a lump-sum DRC could be calculated to be the actuarial equivalent of the standard monthly DRC, thus creating no additional system costs but potentially spurring longer taxpaying work. But even if the lump sum were designed to be slightly smaller in present value than the DRC would have provided as a monthly benefit stream—thus producing a net improvement in system finances—many individuals might still find the lump sum option more attractive because they would have immediate access to and control over the funds.

Another potentially important work incentive repair would be to redesign the basic benefit formula so that it operates on each separate year of work rather than on one's career average earnings. As we discussed earlier, the current formula causes one's returns from Social Security to drop with extended work, as one's career average earnings rise and the system's progressive benefit formula thus delivers lower returns.

An alternative would be to apply the current formula, divided for example by 38 or 40, to each of one's earnings years separately, so that one continues to accrue benefits at the same rate no matter how long one works.[69] In addition to greatly improving work incentives for seniors, this reform would have other advantages. For example, the current formula often mistakes intermittent high-wage earners for low-wage earners because their career "average earnings" look the same. This confusion causes problems in the treatment of those who move in and out of Social Security coverage—for example, higher-wage state/local employees and immigrants, whom the formula mistakes for needy low-wage workers—necessitating complex fixes such as the Government Pension Offset. Such controversial complexities would become unnecessary if Social Security simply accrued proportional benefits with each additional year of taxpaying work, more in the fashion of a traditional private-sector pension.

Another work-incentive reform would be to gradually restrain the growth over inflation of nonworking spouse benefits associated with higher earners. The nonworking spouse benefit does play a useful role within Social Security by recognizing the value of stay-at-home work and of raising the next generation of wage earners. It is, however, inefficiently designed in that it is both regressive and a significant disincentive to paid employment. A two-earner couple both with low wages, for

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68. See Testimony of Charles Blahous before the Subcommittee on Social Security of the U.S. House of Representatives Committee on Ways and Means, July 8, 2011.
69. Testimony of Charles Blahous before the House Subcommittee on Social Security.

example, receives lower returns from Social Security than a *high*-wage one-earner couple,[70] despite the intended progressivity of the basic benefit formula.[71] And, as noted earlier, someone married to a high-earning spouse might well receive a higher nonworking spouse benefit than another individual might earn based on a full career of paying payroll taxes on modest annual earnings.

It is not necessary to eliminate the nonworking spouse benefit to address the inequities described above. One option is simply to constrain its growth so that no future nonworking spouse can receive a benefit exceeding the inflation-adjusted value of the benefits that today's low-wage workers receive based on a full career of payroll tax contributions.

Others have suggested that payroll tax relief be offered to seniors who extend their working lives. There are policy downsides to this approach: it would reduce much-needed Social Security tax revenues and embody age discrimination if enacted in the wrong way. Versions that avoid the age-discrimination pitfall, however, have been put forward by Mark Warshawsky as well as John Shoven.[72] The basic idea would be to establish a status of being "paid up" under Social Security after a given number of years of contributions (45 in the Warshawsky formulation), after which no further payroll taxes would be collected. Notably, this change would offer a work incentive to individuals on the way to paid-up status, and not only upon reaching a given age.

One policy challenge associated with improving Social Security's work incentives is that doing so will likely shift the distribution of Social Security income somewhat from women (who are more likely to have work interruptions to bear and raise children) to men (who are more likely to have longer working careers). This income shift is indeed a likely effect of enacting work-incentive repairs in isolation, and it is a concern if one wishes to preserve the full amount of income redistribution from men to women that occurs under current-law Social Security. The concern can be addressed, however, by making the basic benefit formula incrementally more progressive at the same time that work incentive improvements are enacted.[73]

There is no way to know for certain how much Americans in late middle age

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70. For these purposes a "low-wage" worker has wages equal to 45 percent of the Average Wage Index and a "high-wage" worker has wages equal to 160 percent of the average wage index, per the conventions of the Social Security Administration Actuary. Two low-wage workers thus have combined earnings that are considerably less than those of a high-wage worker. See various actuarial notes published at http://www.ssa.gov/OACT/NOTES/ran3/index.html.

71. Social Security Online, "Moneys Worth Ratios."

72. Memorandum from Stephen C. Goss, Alice H. Wade, and Christopher J. Chaplain to Mark Warshawsky, "Estimated Financial Effects of 'A Reform Proposal to Make Social Security Financially Sound, Fairer, and More Progressive,'" September 17, 2008, http://www.ssa.gov/OACT/solvency/Warshawsky_20080917.pdf; Goda, Shoven, and Slavov, "Removing the Disincentives."

73. For details on provisions that would both increase system progressivity while preserving work incentives, see Charles Blahous, "Seizing the Common Ground," in Blahous, *Social Security: The Unfinished Work* (Stanford: Hoover Institution Press, 2010).

would respond to reforms to render Social Security friendlier to those who extend their working careers. Evidence from Liebman, Luttner, and Self suggests that there *would* be a positive labor supply effect and thus a positive effect on federal revenues, retirement income security, and broader economic growth.[74] At a time when America desperately needs the labor productivity of our skilled, healthiest younger seniors to foster economic growth, we would do well to have a Social Security system that sides with those who provide us with the benefits of their continued work.

VI. THE IMPORTANCE OF FERTILITY RATES TO ECONOMIC GROWTH AND PROGRAM FINANCING

THE RELATIONSHIP BETWEEN fertility levels and broader economic growth is an issue that one must approach with delicacy. Few of life's decisions are more personal than those pertaining to whether to bear and care for a child. Americans have historically, and rightly, taken a dim view of governments that have attempted to control, manage, or even influence these family decisions too closely.

As an analytical matter, however, the issue cannot be entirely avoided for the simple reason that future economic growth depends greatly on the growth in the working-age population, which in turn depends enormously on fertility rates. Nations that fail to maintain population-sustaining birth rates are nations that must anticipate slower economic growth and uncertain financing support for government social insurance programs. Throughout much of the developing world, of course, the opposite problem exists: birth rates are too *high* to be economically manageable. There is no avoiding the reality that fertility rates bear an important relationship to a nation's future economic strength.

In various inexact and somewhat haphazard ways, U.S. economic policy recognizes and implicitly places value on caring for a dependent child. The U.S. income tax code contains various exemptions and credits that reflect the burdens assumed with child-rearing. There has also long been bipartisan rhetorical support for various efforts to create "family friendliness" in policy areas ranging from the income tax code to the private-sector work environment. Proposals for new "family-friendly" policies proliferate from time to time. For example, there have been suggestions in recent years for a new "KidSave" entitlement, in which the federal government would provide startup funds for savings accounts for newborn children.[75] Such initiatives reflect a broader societal recognition of the importance of child-rearing.

Whenever such policies are enacted, government officials are effectively choosing to redistribute income from the childless toward those who are assuming the burden of raising children, based in part on the rationale of recognizing a burden

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74. Liebman, Luttner, and Self, "Labor Supply Responses."
75. See, for example, *Social Security KidSave Accounts Act*, HR 242, 107th Cong., 1st sess. (January 5, 2007), http://www.opencongress.org/bill/110-h242/text.

that child-raisers have assumed to the gain of society at large. Many Americans would take offense at the suggestion that the government is, in effect, assigning a dollar value to the raising of children with each such policy adopted. The notion has increased resistance to proposals such as KidSave, which strike many observers as "paying people to have kids." But that is already what is implicitly happening through the income tax code and elsewhere (for example, via the child tax credit).

Although the broader benefits of child raising elude quantification, there is at least one area of federal policy where they are comparatively easy to calculate: Social Security financing. Social Security's pay-as-you-go financing structure, in which benefits for previous generations are paid from the taxes of subsequent generations, depends directly on the growth of the working-age population, and thus to a great extent upon fertility rates. It is this relationship that determines the tax rates that must be imposed to fund a given level of benefits:

$$\frac{\text{Per capita benefits as a percent of worker wages}}{\text{Ratio of workers to beneficiaries}} = \text{Worker tax burden as a percent of wages}$$

This mathematical relationship points to an irony underlying federal economic policy: although the broader federal tax code is riddled with provisions to recognize the impossible-to-quantify value of raising children, the Social Security tax applies equally to every wage earner. The irony here is that each individual's contribution to Social Security's future stability is a fairly direct function of the number of future wage earners that he or she bears and raises. This financing reality raises the policy question of whether the benefits of child rearing would be more sensibly recognized in Social Security law than through the general income tax code.

Trends in fertility rates are the single biggest reason that Social Security costs, as a fraction of the underlying tax base, are projected to soar over the next quarter century, as figure 13 shows.

Although Social Security cost rates surged immediately as a result of the 2008 recession, the broader increase in program cost rates from 2008 through 2035 predominantly reflects the rise in American birth rates after 1946 (producing those who first claimed retirement benefits in 2008) followed by the decline in birth rates after 1964 (thereby slowing the growth of the program's tax base), as figure 14 shows.

Over the long run, Social Security finances are more sensitive to fertility projections than to any other demographic or economic variable.[76] Under current projections, the gap in 2085 between annual program costs and income is estimated at 4.24 percent of the payroll tax base. This estimate assumes a long-term fertility rate of 2.0 children per woman. If instead the fertility rate decreased to 1.7, the long-term gap

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76. It is worth noting that other variables affecting the future number of workers, such as immigration, have a comparatively smaller effect.
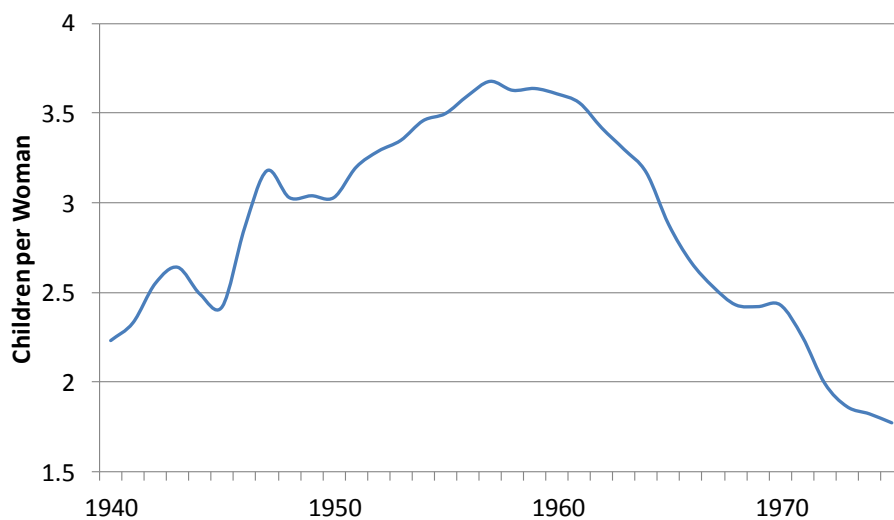
**FIGURE 13. SOCIAL SECURITY COST RATES AS A PERCENTAGE
OF THE TAX BASE, 2000–2035**
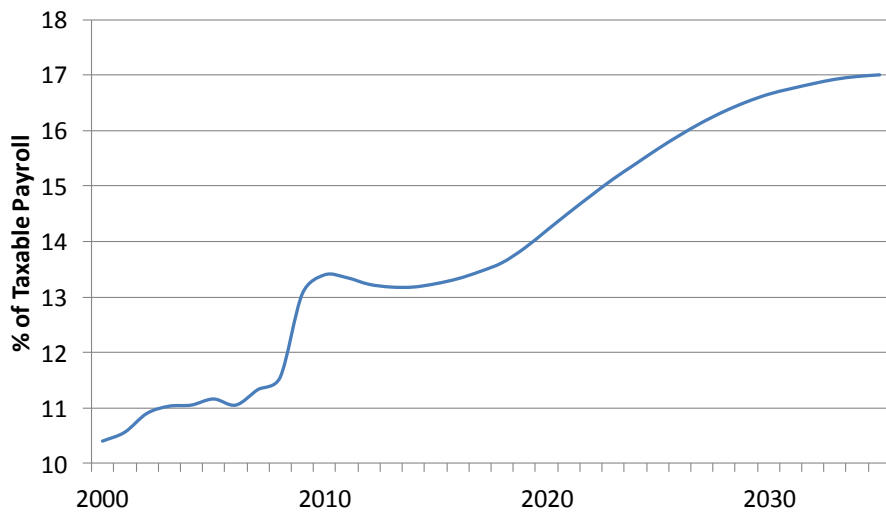
Source: 2011 Social Security Trustees' Report

FIGURE 14. U.S. FERTILITY RATES, 1940–1975

Source: 2011 Social Security Trustees' Report

would swell by over 50 percent to 6.50 percent of the payroll tax base. If by contrast the fertility rate increased to 2.3, the long-term shortfall would be cut by over 40 percent, to 2.43 percent of the payroll tax base.[77]

For further perspective, consider this: If American birth rates were to return immediately and permanently to peak Baby Boom levels, under current law there would not be *any* long-term Social Security shortfall as now projected. It is therefore appropriate to ask whether current Social Security policy appropriately treats those who support the program by raising the taxpaying wage earners of the future.

VII. EVIDENCE OF SOCIAL SECURITY POLICY EFFECTS UPON FERTILITY LEVELS

IT HAS LONG been understood anecdotally that nations with expansive social welfare systems tend to have lower birth rates. The prototypical examples exist within Europe, where government pension systems are comparatively generous and where fertility rates are lower than most everywhere else in the world.

There is something of a vicious cycle connecting low birth rates and rising tax burdens. On the one hand, lower fertility rates lead intrinsically to higher tax burdens, because whenever there are fewer workers each must bear an individually higher tax burden to finance a given level of aggregate government benefits. But it is beginning to be better understood that the effects flow the other way as well; rising social insurance cost burdens in turn lead to lower birth rates, as individuals of reproductive age have fewer economic resources to devote to raising the next generation, owing to the increasing amount of their resources being transferred to older generations.

This combination of factors is economically toxic: on the one hand, these social welfare systems depend upon sufficient numbers of new workers to provide their financing support, while on the other, rising system costs themselves place downward pressure on the numbers of incoming young workers. This self-contradiction at the heart of existing social insurance programs has caused European population growth to wither at precisely the historical moment when the productivity of younger workers is most needed to support the benefit promises made to older ones.

Boldrin, de Nardi, and Jones found that "an increase in government old-age pensions is strongly correlated with a reduction in fertility."[78] Ehrlich and Kim also found that declining fertility rates are "partly influenced by the scale of defined-benefits, pay-as-you-go (PAYGO) social security systems operating in most

77. *The 2011 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*, House Document 112-23, 112th Cong., 1st sess. (Washington, DC, May 13, 2011), http://www.ssa.gov/OACT/TR/2011/tr2011.pdf (hereafter *2011 Social Security Trustees Report*).
78. Michele Boldrin, Mariacristina DeNardi, and Larry E. Jones, "Fertility and Social Security" (NBER Working Paper No. 11146, Cambridge, MA, February 2005).

countries."[79] The paper goes on to suggest that 48 percent of the reduction in fertility rates in OECD countries between 1965 and 1989 may be due to the rise in tax rates caused by growing pay-as-you-go social security benefits. This suggests that if the U.S. government increases Social Security taxes as a means of alleviating the program's financing shortfall, U.S. fertility might decline and further exacerbate the demographic shifts that are already buffeting program finances.

The qualification of "pay-as-you-go" benefits here is an important one. If, alternatively, each generation funded its own future Social Security benefits in advance, constraining its own consumption by the amount required for doing so, this would directly finance future economic growth such that these adverse results would not obtain. It is the rise in *pay-as-you-go* benefit obligations, not in benefits themselves, that causes tax burdens on younger generations to rise. A number of reformers, most notably President George W. Bush, have attempted to convert Social Security into a partially prefunded system to limit these intergenerational inequities, but thus far such reform efforts have been unsuccessful within the United States. Failing such a conversion to a partially funded system, the only alternative to rising pay-as-you-go benefit obligations is simply to constrain the growth of benefit promises—if, that is, the growth of family tax burdens is also to be limited.

The work of these various academics suggests that if U.S. Social Security benefit costs rise as projected to exceed 6 percent of GDP, fertility rates are likely to decline from their current long-term projections of 2.0 per woman.[80] The share of parents who are married would also be expected to decline.[81]

To sustain Social Security finances and to optimize our national potential for future economic growth, national birth rates need to be adequate to produce sufficiently large future generations of American workers. This outcome is made less likely by the projected future growth in Social Security cost burdens, raising the question of whether the program's design can be improved in some way to avoid these adverse effects. If the projected growth in costs cannot be avoided altogether, perhaps its worst effects on families with children—the inevitable pillars of future program finances—can be mitigated.

VIII. A FERTILITY-NEUTRAL PAYROLL TAX?

IN THIS SECTION, we explore how the Social Security payroll tax structure could theoretically be redesigned to more equitably treat those shouldering the responsibility of raising the payroll taxpayers of the future. We take as a fundamental philosophical starting point for this inquiry that the objective is *not* to replicate

79. Isaac Ehrlich and Jinyoung Kim, "Has Social Security Influenced Family Formation and Fertility in OECD Countries?" (NBER Working Paper No. 12869, Cambridge, MA, January 2007).

80. SSA, Table VI.F4, "OASDI and HI Annual Income, Cost, and Balance as a Percentage of GDP, Calendar Years 2012–90," http://www.ssa.gov/OACT/TR/2012/lr6f4.html.

81. Ibid.

the vagaries of other federal economic policies in compensating for child bearing via arbitrarily negotiated subsidies. The purpose is instead to determine whether a simple policy adjustment could recognize the quantifiable financing responsibilities that families with children assume on behalf of Social Security—burdens that have been shown to put downward pressure on fertility rates internationally.

In sum, we explore whether Social Security's tax revenue stream could be adjusted in a simple way to become more "fertility neutral" (while still falling somewhat short of being truly "family friendly"). We focus on the tax side rather than the benefit side of Social Security for a number of reasons, but mainly owing to considerations of potential complexity. The benefit side of Social Security already attempts to recognize some of the value of parenting, both through its nonworking spouse benefit and through specific benefits for dependent children, among other features. None of these features, however, attempts to recognize the ultimate financing contributions made and current burdens borne by parents during the time of their parenting.

Social Security's current nonworking spouse benefit, for example, is provided to the childless just as it is to those who raise several children. It is designed as a social insurance provision to compensate such dependent spouses for income loss when the household's primary earner leaves the workforce. It is not designed to represent an after-the-fact payment for child-rearing done decades before, a payment that, even if it could be fairly decided upon, would be subject to constant political renegotiation. Other auxiliary benefits, such as those for surviving spouses and dependent children, are similarly ill suited to our task. To expand or to alter Social Security's auxiliary benefit structure to directly recognize the value of child rearing would risk creating undesirable complexity in benefit formulas and eligibility requirements while also contorting the historical social insurance purposes of these benefits.[82]

Social Security's payroll tax structure, by contrast, provides an obvious and simple way to pursue more equitable treatment of those who nurture Social Security's future supporters. Under current Social Security law, benefits are directly tied to the total *amount* of wages subject to the payroll tax. The payroll tax *rate* can thus be readily altered without unintended spillover effects upon program outlays.

This in turn suggests that the most straightforward method of creating a "fertility-neutral" payroll tax would be to increase the basic payroll tax *rate* while creating exemptions or deductions for each dependent child. Such deductions, of course, are already present in the federal income tax system. But whereas in the federal income tax structure the current exemptions reflect the results of a political negotiation, it is at least theoretically possible to base adjustments to create a fertility-neutral payroll tax structure solely on what is actuarially fair.

82. For some ideas on how this could be done, see James Capretta, "The Demographics of Social Security," Ethics and Public Policy Center, May 31, 2011, http://www.eppc.org/publications/pubID.4476/pub_detail.asp.

In approaching this policy problem, we note the following principles and observations:

Revenue-neutrality. The purpose of this thought experiment is not to suggest closing Social Security's actuarial shortfall by raising taxes, but rather to determine whether the *currently projected amount* of aggregate payroll tax burdens could be more equitably distributed. Though in theory such reform could lower financial barriers to having more children and thereby contribute positively both to Social Security finances and to broader economic growth, no such effects are assumed or targeted in this exercise. The policies explored here would leave system finances unchanged if fertility rates remained unchanged.

The relationship between fertility rates and Social Security finances is nonlinear. The Trustees' current long-term estimate for U.S. fertility rates is 2.0. If fertility rates ultimately increase to 2.3, Social Security's 75-year actuarial balance would improve by 0.36 percent of taxable payroll, whereas if they decrease to 1.7, it would worsen the 75-year actuarial imbalance by 0.38 percent of payroll. Effects on long-term annual cash flows are still more asymmetric: a 2.3 fertility rate would decrease long-term cash flow imbalances by 1.79 percent of taxable payroll, whereas a 1.7 fertility rate would worsen them by 2.26 percentage points.[83] In sum, a decline in fertility rates to 0.0 would be more disastrous for Social Security finances than an increase to 4.0 would be beneficial.

Fertility has a much greater effect on Social Security finances in the distant future than in the near future. In other Social Security analyses we favor giving equal attention to the program's long-term annual cash flows as to the positive balance in its trust funds. Specifically with fertility, however, it must be understood that bearing more children over the next few decades will only create its full positive effects on program finances still more decades from now. Thus, it's possible that an increase in fertility rates that would lead to positive annual Social Security balances in 2085 would still allow the trust funds to be depleted well before then. For our purposes, therefore, we base our calculations on what is required to maintain the program's annual balance *and* to keep its trust funds from being depleted along the way.

Despite actuarial nonlinearity, the illustrative policy should treat all children equally. Even though the first child born per woman may have a greater

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83. *2011 Social Security Trustees Report,* 163.

actuarial value on average than, for example, the fifth child, our illustrative policy would treat all children equally. To do otherwise would smack of undesirable social engineering. If a policy were to provide a smaller deduction for the fifth child than for the first one, that policy would convey the offensive message that the fifth child in a family is of lesser value. Similar problems would be associated with the alternative of providing equal deductions per child but only up to a limited number; this limit would convey the equally offensive notion that the government is prescribing an optimal family size. As with the income tax code, deductions or exemptions for dependent children should be equal for each child and not limited in number.

Establish per-child deductions as a percentage of wages rather than a dollar amount. Social Security finances are ultimately dependent on the growth of wages in several respects. Payroll tax revenue intrinsically grows with national wage growth, while the program's benefit formula is also designed to grow with the Average Wage Index. To be sustainable under varied economic conditions, therefore, any per-child deductions from the payroll tax should be determined as a percentage of wages rather than as a dollar amount per child. Even if a dollar amount per child were indexed to grow with future wage growth, projection errors could still require subsequent revisions to the amount, and political renegotiations almost certainly would. Determining per-child deductions as a percentage of wages would ensure that families of the same sizes pay the same payroll tax rates, supporting a historical concept of Social Security tax fairness.

The illustrative formulation will undershoot the long-term actuarial value of fertility for various reasons. First, by basing the tax rates and deductions on the effect of fertility on the 75-year balance, we understate the effect of fertility on program finances over the longer term. But more directly, the decision to have an equal deduction for each child essentially forces this result: at one extreme, we could choose to have the per-child deduction fully reflect the actuarial value of the first child per family (and thus be overstated for all other children); at the other, we could choose to have the deduction be set roughly at the point to which the actuarial values of additional children within large families converge. This second option makes for greater practical and political sense, because to overshoot per the first method would require enormous payroll tax rates for the childless while totally eliminating payroll tax burdens for large families. It is likely impracticable to impose upon the childless the high payroll tax rates that would be required if American fertility suddenly declined to zero.

Application of these principles while first making the simplistic (but erroneous) assumption that per-child deductions would be claimed throughout the entirety of one's adult working life results in a quite straightforward "fertility-neutral" payroll tax structure with the following features: a basic payroll tax rate of 14.4 percent for workers with no children, and a reduction of 1 percent in the effective payroll tax rate for each dependent child. In other words, our thought experiment leads to a target payroll tax rate of 14.4 percent for the childless, and of 12.4 percent for those with two children (averaged over their working careers).

In practice, of course, the per-child deduction could not be permitted *before* a dependent child is born, nor would it likely be permitted after the dependent child reaches a defined age (such as 18). Accordingly, even workers with children would be subject to the higher "childless" payroll tax rate for much of their working lives. Incorporating these factors, we arrive at the following modified payroll tax structure: a basic payroll tax rate of 14.4 percent for workers with no children, and a deduction of 2.5 percentage points for each dependent child.

In this simplified system, a worker with two children would pay a 14.4 percent payroll tax rate in years with no dependent children in the household, 11.9 percent during years that one is at home, and 9.4 percent during years when both are present. This system would lead us back roughly to an average rate equal to the current-law 12.4 percent tax rate for parents of two children. More precise rate schedules could be determined by rigorous actuarial analysis, but this schedule reasonably approximates how such a policy might operate.

A few further notes on this formulation may be useful. First, if fertility rates remained consistent with current projections of 2.0, then the average payroll tax rate would remain roughly 12.4 percent and program finances would be mostly unaffected. If instead fertility rates rose to 3.0, then the average payroll tax rate would decline to roughly 11.4 percent. This scenario would produce a net improvement in Social Security's long-term finances, consistent with our policy principle of undershooting the actuarial benefits of fertility improvements.

Such a policy would also protect Social Security finances from downside risk. Under current law, a decline in fertility rates from 2.0 to 1.5 would be truly disastrous for program finances. Under this alternative policy, such a demographic change would be automatically accompanied by an effective increase in average payroll tax rates from roughly 12.4 percent to 12.9 percent, somewhat cushioning the financing blow of lower fertility. This feature would thus perform a partial automatic stabilizer function as various experts have proposed be incorporated into Social Security,[84] though via different means.

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84. As one example, see Jason Furman, "Coping with Demographic Uncertainty," New York University's John Brademas Center for the Study of Congress and the Organizational Performance Initiative, September 2007.

It should also be noted that by allowing a 2.5 percent deduction for the wages of *each* worker caring for a dependent child, this policy would provide for improved equity for two-earner couples. (See the earlier sections of this paper on how current law redistributes income from two-earner couples to one-earner couples, often in a regressive fashion.)

The simple formulation here arises from our having followed the policy principles outlined above. The Trustees' latest published sensitivity analysis suggests that a change of 0.3 in fertility rates would affect 75-year actuarial balances by roughly 0.37 percent of payroll, and long-term program finances by much more. By illustrating the effects of a 1.0 percent change in the average payroll tax for every change of 1.0 in the fertility rate, we produce a system that is simple, easy to understand, and which also approximates (while somewhat understating) the actuarial benefits of larger families.[85]

Clearly, enacting such a policy within Social Security as a standalone measure would shift program financing burdens from those workers with children to those without. In all likelihood, this policy could only be enacted if compensating changes were made in other areas of federal policy, such as the federal income tax. An example of a compensating revenue-neutral change to federal income taxes would be to reduce or eliminate the personal income tax exemption for dependent children, using the savings to lower marginal income tax rates for all income taxpayers. Taken together, this combination of payroll tax and income tax policies could be seen as both a progressive and pro-family reform, changing the current per-child income tax exemption from which only those filing income tax returns benefit into a deduction from payroll taxes from which all workers with children would benefit.

To change our broader tax system's recognition of the benefits of parenting in such a way would be a fundamental change from historical practices. There are reasons, however, why such a policy may make greater sense than current law. It would somewhat broaden the base of federal income taxpayers while at the same time helping the poorest working parents through payroll tax relief. Also, it would more directly tie the benefits of (and incentives for) parenting to what such parenting explicitly does for Social Security finances, in contrast with the more nebulous justifications for various "pro-family" exemptions and deductions in current federal income tax law.

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85. Administrative details are beyond the scope of this paper, but the most direct means of claiming the deductions would probably be through the payroll tax withholding process, with the 2.5 percent deduction per child split equally between employer and employee. Parents with six or more children under age 18, all living at home, would owe no OASDI payroll tax, befitting their ample future contributions to Social Security finances, though this credit would not be refundable.

IX. CONCLUSION

Social Security reform, as well as broader entitlement reforms that encompass Medicare and Medicaid, should be undertaken with a focus on reining in program costs, encouraging personal saving and investment, and rewarding those in middle and early retirement age who make the decision to extend their working careers. Only by approaching reform in this manner can we ensure that the operation of federal entitlement programs is compatible with facilitating the levels of economic growth that we hope for America throughout the 21st century and beyond.