

# Permanent Solvency for Social Security

Donald L. Nordeen

Gaylord, Michigan

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## **Introduction**

Social Security was established as the national retirement system. It is different from personal retirement plans in that the benefits are paid only to those who retire under the qualifications for benefits at retirement. Social Security is an insurance as indicated by its formal name, Old Age and Survivors Insurance (OASI). It provides an insurance benefit in the form of retirement income. There is no OASI benefit for those who do not live to retirement age. Originally, life expectancy was lower than it is today resulting in less benefit obligation.

(added 2010 Nov 16) Available at the Social Security Administration website is a comprehensive [History of SSA 1993-2000](#). Internet links to the chapters and other references are included. [Chapter 3](#) is devoted to program solvency. All pages include the advisory, "This is an archival or historical document and may not reflect current policies or procedures."

Disability Insurance is the second part of Social Security. Much of the published financial information is for combined OASI and DI.

(added 2010 Nov 13) I have approached Social Security OASI Solvency from a different perspective. I began with the question, "How can Social Security be preserved and made permanently solvent with the smallest possible change?" This leads to several key factors: (1) involve the largest possible number of participants, which means all; (2) make the change over the longest possible period of time, which means 75 years for the actuarial projection; (3) use the power of compounding to produce favorable results; and (4) make annual adjustments to ensure ongoing projected solvency over 75 years.

The results are a unique and provide the smallest possible reduction in benefits to make Social Security permanently solvent. The changes in benefits are gradual and predictable. The reduction in benefits for a 20-year retirement span is 9% which is less than the adjustments in other proposals for some groups. The approach also preserves The Nine Guiding Principles of Social Security discussed by Mr. Robert M. Ball, who was Commissioner of the Social Security Administration from 1962 to 1973 with other positions in the SSA back to 1952. Mr. Ball's Nine Guiding Principles are copied into Appendix A.

This working paper discusses many aspects of OASI to provide a perspective for considering changes to ensure long-term solvency. It is certainly not complete but may provide a framework for others to add their analyses and recommendations. Conclusions are stated in the sections in which the topic is discussed, and are repeated at the end of this paper.

As a result of the downturn in the economy, the changes in the Trust Fund Balances have been widely published. The changes have both short- and long-term effects. For the next ten years, the effect of these changes on results from data supplied by the Congressional Budget Office are shown graphically in Figure 1.

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<sup>1</sup> This working paper is work in progress and will be updated from time to time as new thoughts and information become available. The significant changes are noted with dates for the most changes at the beginning of the paragraphs affected and are listed in the summary of changes at the end of the working paper on page 26.

The projections in Figure 1 only show the funding surplus/deficit, not when the Social Security Trust fund will be exhausted. The Trust Fund balances for OASI and DI from "[The 2010 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and](#)

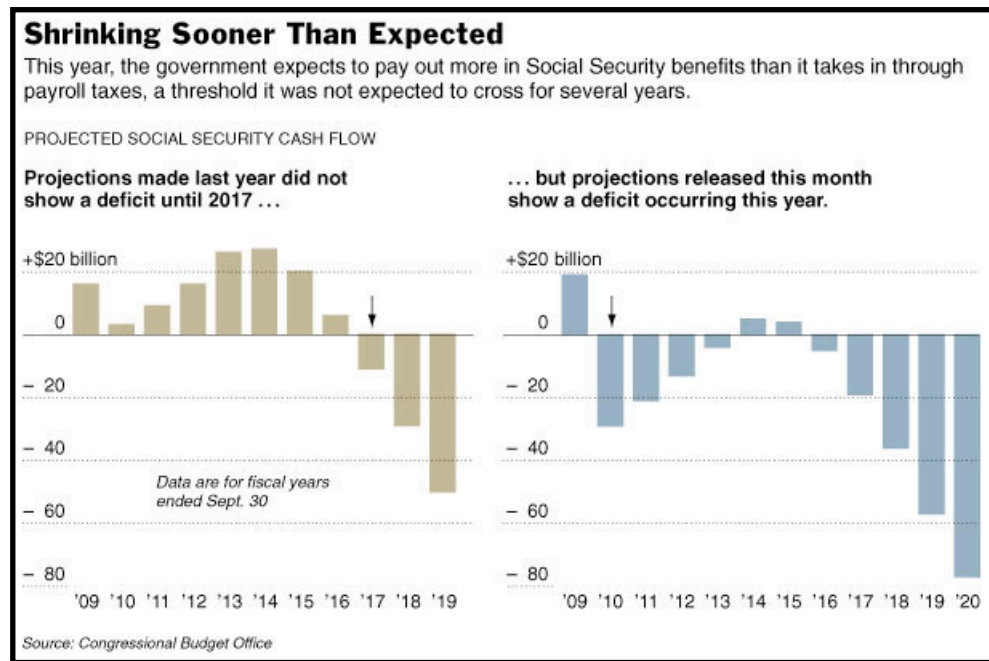


Figure 1 — Changes in Social Security Ten-Year Projections

[Federal Disability Insurance Trust Funds](#)" are shown in Figure 2. Both OASI and DI projections are plotted separately in Figure 2, but this paper focuses only on OASI. For each, projections are made for three assumptions: Low-Cost, Intermediate, and High-Cost. Usually, the intermediate cost assumption is used for understanding the trends and obligations. With this assumption, the OASI Trust Fund is projected to be exhausted in year 2040. After the 2040 date, the OASI benefits would be greatly reduced (by about 25%) which is stated on the web page on the Social Security website devoted to [Proposals](#):

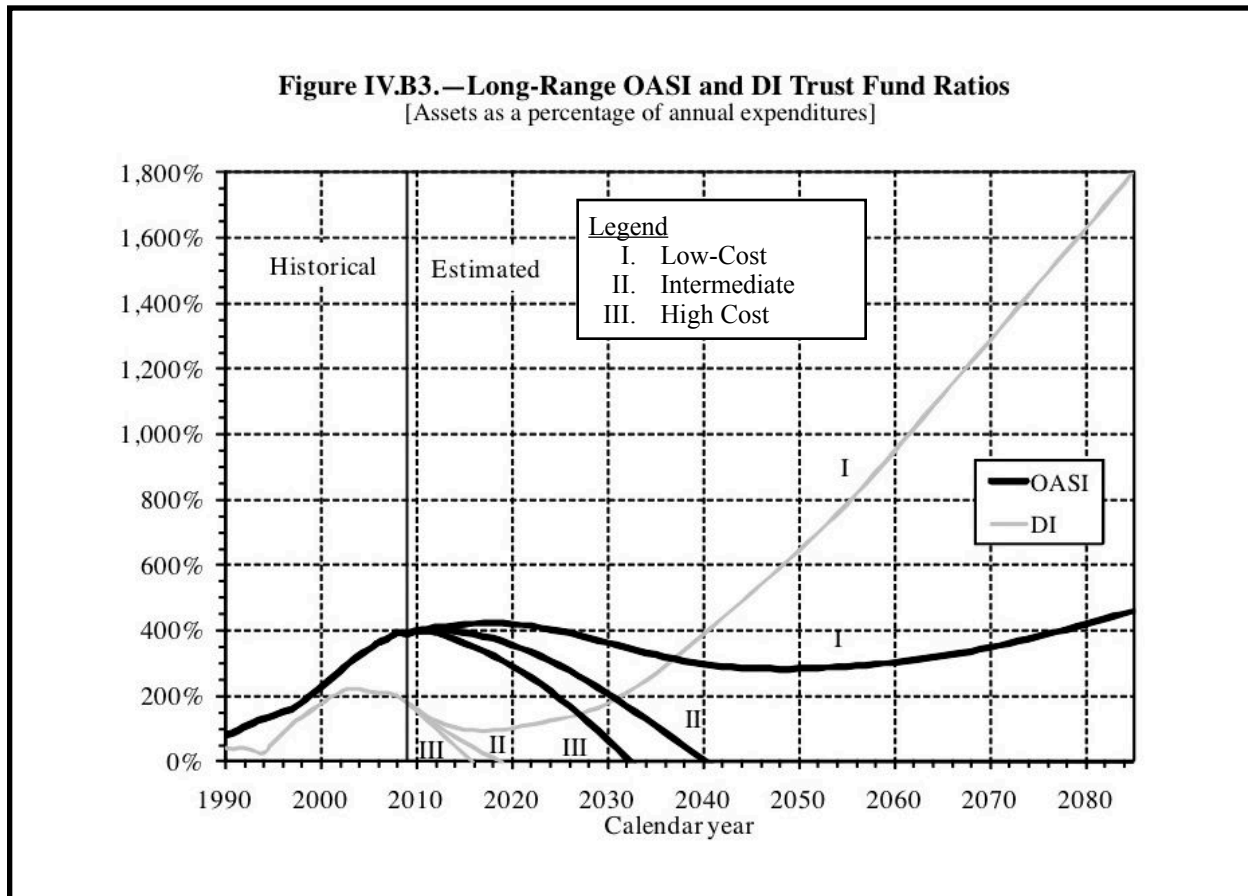
The last 5 [Trustees Reports](#) have indicated that Social Security's **Old-Age, Survivors, and Disability Insurance** (OASDI) Trust Funds would become exhausted between 2037 and 2041 under the intermediate set of economic and demographic assumptions provided in each report. If no legislative change is enacted, scheduled tax revenues will be sufficient to pay only about three fourths of the scheduled benefits after trust fund exhaustion. Many policymakers have developed proposals and options to address this long-range solvency problem.

This paper uses a 25% nominal reduction based on “pay only about three fourths of the scheduled benefits after trust fund exhaustion”. The percentage might be slightly different if based only OASI, and it varies over time as is developed in this paper. It is also different for the Low-Cost and High-Cost assumptions.

For the high-cost assumption and projection, the Trust Fund would be exhausted sooner with larger reductions in benefits. For the low-cost assumption and projection, The Trust Fund would always have a positive balance as shown in Figure 2.

Note that these are projections, not predictions. Just as a hurricane forecast fans out in the future, so do the actuarial projections for OASI and DI.

(added 2010 Nov 07) For a perspective on the Social Security OASI issues and consequences please read, "[2010 Social Security Trustees Report: Reform Needed Now](#)",



**Figure 2 — Long-Range OASI and DI Trust Fund Ratios.** From "[The 2010 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds](#)"

published on *August 11, 2010* by [David C. John](#) of the Heritage Foundation. This working paper considers and addresses all of the points in “**What It All Means**” section of the Heritage report.

**First Major Conclusion** — Since the longer-range requirements cannot be accurately predicted, a self-correcting method is needed to ensure permanent solvency of the Social Security Trust Fund.

**Second Major Conclusion** — A simple and fair self-correcting adjustment to ensure projected long-term solvency is an annual adjustment factor updated annually applied to all benefits.

Implementing a self-correcting adjustment in Social Security benefits would avoid the political difficulty of periodically having to adjust either taxes (income) or benefits (costs) in an impossible attempt to ensure longer-range solvency with fixed taxes and fixed benefits. In effect, OASI is both defined contribution and defined benefit — impossible to balance. OASI differs from a retirement plan because it uses current income to pay current benefits without

developing the assets needed for the long-term obligations. Development of a self-adjusting method to ensure predicted long-term solvency is the subject of this paper.

(added 2010 Oct 27) The analysis and proposal in this working paper are unique in that they use the power of compounding to produce the desired result of bringing OASI benefits permanently in line with OASI income. The four key points are:

1. The OASI annual revenues on the long term are only about 75% of the OASI benefits according to the current law and formulas for calculation of benefits.
2. Mathematically, a reduction of 25% in overall benefits can be achieved with an annual adjustment of 0.4% per year in OASI benefits, which becomes an on overall reduction of 26% when compounded annually over 75 years.
3. The third point is a question: Is the current OASI Trust Fund balance sufficient to allow for the gradual reduction in OASI benefits? My analysis indicates that the answer is yes and that solvency with a Trust Fund Ratio of 100% can be maintained throughout the 75-year actuarial period.
4. Since no formula for benefits can ever be made to exactly balance OASI revenues and OASI benefits (costs), a refinement of the annual adjustment should be made annually to maintain a projected solvency of 100% Trust Fund Ratio.

An important overall result is that, for a retirement span of 20 years, the reduction in benefits would be on 8%, which should be compared to the 7% reduction in benefits associated with increasing the retirement age for full benefits by one year. An increase of 2 years in the retirement age for full benefits — a 14% reduction in benefits — has already be adopted in the law. The annual adjustment from the analysis in this paper is 0.474%, which results in a reduction of 9% over a 20-year retirement span. The larger annual adjustment is in part due to the larger reduction required over the 75-year period (27% vs. 25% for the 0.4% per year adjustment).

An observation made concerning several aspects of the factors discussed in this working paper is that there may be a structural benefit increase (annual cost increase) with later dates of birth. It may be on the order of magnitude of 1% per year. It is not surprising that the complex formulas used to define the benefits might include some unintended consequences. The magnitude of the structural increase in costs may well exceed the downward annual adjustments necessary to achieve projected solvency over the long term. Understanding the reasons for this observation is needed, but is beyond the scope of this working paper.

These inherent difficulties are described in *SSA'S FY 2009 PERFORMANCE AND ACCOUNTABILITY REPORT* at <http://www.ssa.gov/finance/2009/Full%20FY%202009%20PAR.pdf> (2010 Report not yet available) states at page 87:

“The *Social Security Act* requires the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds to report annually to Congress on the financial and actuarial status of the two Social Security Trust Funds – OASI and DI. The *2009 OASDI Trustees Report*, issued in May 2009, showed a worsening of the projected long-term financial status of the Social Security program compared to the Trustees’ 2008 report. The primary reasons for this worsening were lower assumed levels of economic activity that reflect the recent economic recession and faster reductions in death rates assumed in the long term. Other report highlights included:

- The projected point at which tax revenues will fall below program costs is 2016 - one year sooner than the estimate in last year’s report;

- The projected point at which the Trust Funds will be exhausted is 2037 - four years sooner than the estimate in last year's report;
- The projected actuarial deficit over the 75-year long-range period is 2.00 percent of taxable payroll - up from 1.70 percent in last year's report; and
- Over the 75-year period, the Trust Funds would require additional revenue equivalent to \$5.3 trillion in present value as of January 1, 2009, to pay all scheduled benefits.

See <http://www.socialsecurity.gov/OACT/TR/2009/index.html> for the full *2009 OASDI Trustees Report to Congress*."

Currently, the Social Security taxes for OASI and DI together with the current balance in the Social Security trust fund are not sufficient to provide the scheduled payment of benefits based on actuary projections for the next 75 years. The [SSA'S FY 2009 PERFORMANCE AND ACCOUNTABILITY REPORT](#) states at page 132:

"... The combined payroll tax rate is 12.4 percent today [10.6% OASI plus 1.8% DI] and is currently scheduled to remain at that level. An increase of 2.01 percentage points in this rate for each year of the 75-year projection period (1.005 percentage points for employees and employers each, resulting in a total rate of 14.41 percent or a rate of 7.205 percent for each) is estimated to produce enough income to pay all benefits due under current law for that period. Alternatively, all benefits during this period could be reduced by about 13.3 percent on average (or there could be some combination of both tax increases and benefit reductions) to achieve the same effect."

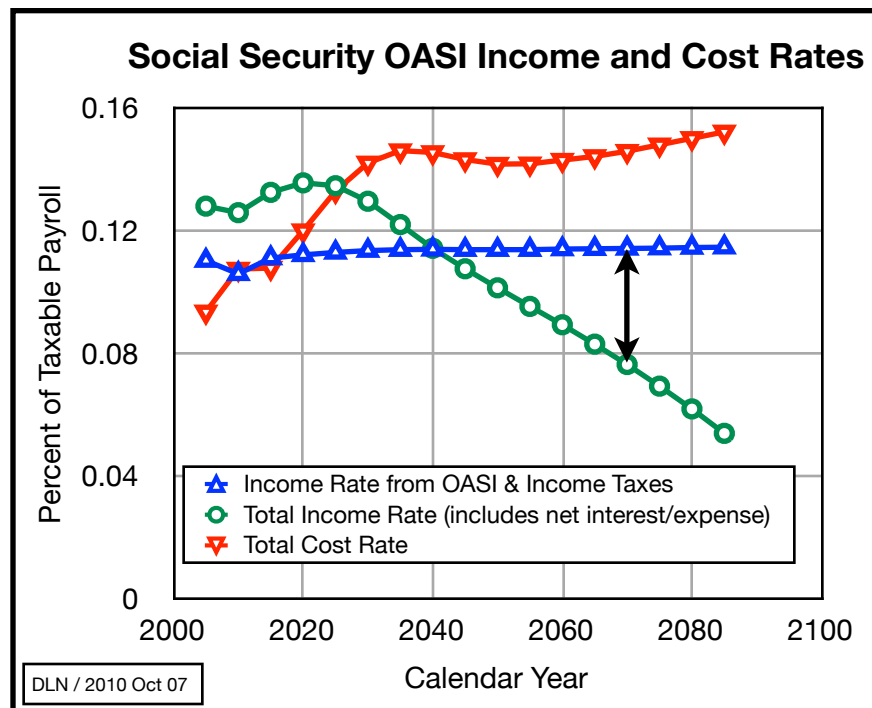
The above discusses only two proposals to address the projected insufficient funding: tax increase or reduction in benefits, or a combination of the two. However, there are many alternatives for tax increases and many other alternatives for benefit reductions.

The reform of Social Security in the 1980s adjusted both the taxes and some of the benefits. The benefits were adjusted primarily by increasing the age for full retirement benefits with a phase-in by date of birth. This placed all of the burden (unfairly) on the younger participants. The change in benefit is not small — on the order of 7% for each year increase in age for full retirement benefits. For the increase of two years, the total reduction in benefits is 14%. Raising the retirement age has the same effect as decreasing the benefits. For example, the current legislation which raised the full retirement benefit age from 65 to 67 results in a 14% reduction in benefits for those who retire at age 65. The reduction in benefits is seldom discussed to explain the consequences with raising the retirement age for full benefits. Raising the retirement age for full benefits places a disproportionate sacrifice on the younger (future retiree) participants. (added 2010 Nov 23) This would likely further erode the confidence by the younger participants that Social Security as it exists today will be available to them when they retire.

Given the magnitude of projected deficits and the mounting national debt, creative ways must be found to make adjustments in Social Security retirement benefits guaranteeing benefits to current and future retirees, avoiding disruptive changes for those already retired or planning for retirement on the near term, and without increasing taxes. This paper discusses one method for achieving these goals by using the current surplus in the Social Security Trust Fund to cushion the necessary changes by placing Social Security on a self-regulating policy to ensure short- and long-term solvency.

Baseline with Continuation of Full Benefits — The numbers used and plotted in this paper are taken and/or derived from the [2010 OASDI Trustees Report](#). The primary references in the Report are **Table IV.A1.—Operations of the OASI Trust Fund, Calendar Years 2005-19** and **Table IV.B1.—Annual Income Rates, Cost Rates, and Balances, Calendar Years 1990-2085**, which is copied into Appendix C. The information in the second table is incomplete and was “reverse engineered” from other data in the [2010 OASDI Trustees Report](#) to provide the information required for this analysis. The completed information was then checked against summary results in the 2010 OASDI Trustees Report to verify the correctness of the derived information. (2010 Nov 03) A description of the methodology and major assumptions in the analysis is provided in Appendix D (to be added).

To illustrate the magnitude of the long-term shortfall, the results shown in Figure 3 assume borrowing to maintain full benefits, even though borrowing is not an option under the law. Prior to year 2040, the OASI Trust Fund has a positive balance which adds Net Interest to the Income from OASI and Income Taxes on benefits paid. Beyond 2040, net interest becomes an expense. The size of the



**Figure 3 — Social Security OASI Income and Cost Rate Trends**

annual interest expense is indicated by the line with arrows. Obviously, without ongoing borrowing, the OASI Trust Fund would not be solvent after 2040.

The numbers plotted in Figure 3 are Percentages of Taxable Payroll which may disguise the magnitudes of the numbers. For 2010, the Total Tax for OASI and Income Tax on Benefits is \$577 billion. That is the amount transferred from those working to those retired — approximately 10.6% of Taxable Payroll.

Several major observations:

1. The cost rate is about 4 percentage points higher (\$164 billion higher in 2010) than the income rate, which is the major shortfall of funding to be addressed.
2. The cost rate is rising in the out years indicating that the benefit formula and actuarial parameters are resulting in an increasing cost rate. (added 2010 Nov 10) The magnitude of the increase in benefits is 0.28% per year. In addition, the Taxable Payroll is also

increasing at a rate that appears to be greater than the sum of the cost of living, productivity improvements, and total number of beneficiaries. This seems to be inconsistent with the principles on which OASI is founded. Investigation to understand the rising cost trend is needed.

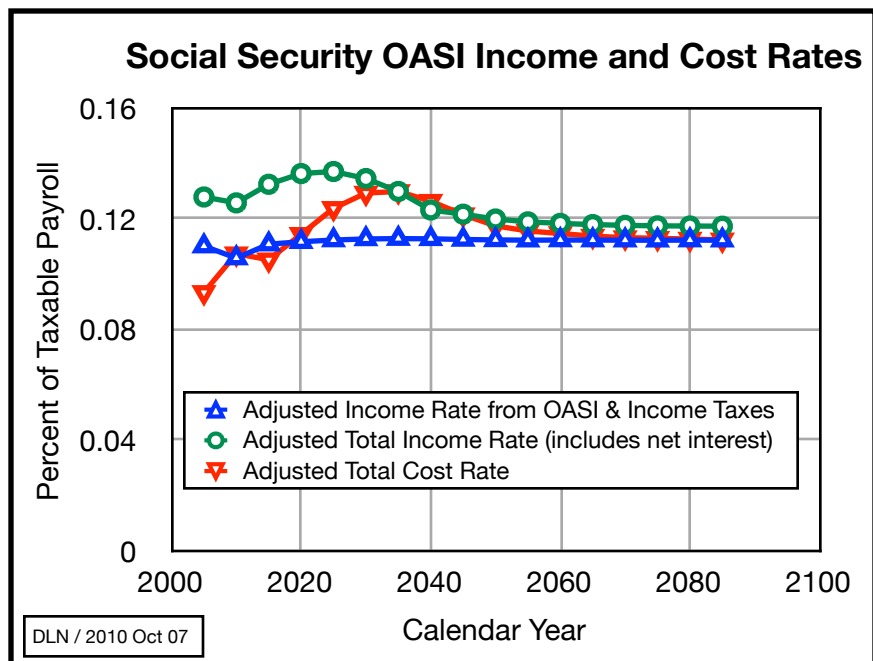
3. Since the rates are specified in the current law, the current law is fundamentally inconsistent with matching OASI benefits to the OASI tax and income tax on benefits.
4. The shortfall results in a large accumulated shortfall to maintain benefits and defined levels. The accumulated borrowing by 2050 or accumulated amount that would have to be provided by increased income and/or reduced benefits — the year used in the [I.O.U.S.A.](#) study — would be \$10.9 trillion.

**Third Major Conclusion** — Small annual adjustments, that have been accepted as appropriate and are in the current law, in Social Security OASI benefits can be made to bring OASI Income and Benefits in balance over the long term.

Smallest Change to Ensure 100% Solvency — To ensure solvency over the long term with the smallest possible reduction in benefits, the adjustments must apply to everyone and extend over the longest time, say 75 years. To bring income and benefits into balance, the benefits must be reduced from about 14.4% of taxable payroll to 10.6% — a reduction of 26%, which might be spread out over 75 years. Compounding over 75 years results in an annual reduction of 0.41% per year. This illustrates the power of compounding. The reduction over a 20-year retirement would be 7.9% over maintaining full current benefits. That is the same order of magnitude as the 7% reduction in full

benefits associated with an increase in retirement age of just one year. An increase of 2 years in retirement age for full benefits (14% reduction) is already part of the current law.

This scenario is possible because of the sizable Trust Fund balance which can be used to ease any transition. The results for this scenario are shown in Figure 4. The costs are gradually brought into line with the income (less that 0.5% per year). Moreover,



**Figure 4 — Social Security OASI Income and Cost Rate Results to Maintain Solvency = 100%**

this maintains a Solvency (Trust Fund Ratio) of 100%, meaning that the Trust Fund Balance at the beginning of the year is the projected cost for that year. Hence, there is a small Net Interest each year as reflected in the Adjusted Total Income. The adjustments also correct for the fundamental imbalance — both overall level and trend — between income and costs in the current law.

Since the adjustment to the scheduled benefits can and should be made annually, Social Security OASI would become permanently solvent. The income transfer from the working participants to the retired beneficiaries would be set at about 10.6% of Total Taxable Payroll, which is a very large number — \$577 billion for 2010.

**Fourth Major Conclusion** — The structural increase in benefits built into the current law (benefit formula) appears to be counter-productive to maintaining solvency. This appears to advantage those with later dates of birth — possibly at the expense of current retirees.

While the rates in Figure 4 indicate a level trend for income and cost rates in the out years, the benefits are still increasing at a rate of 4.5% since Taxable Payroll (**Table VI.F6.—Selected Economic Variables, Calendar Years 2009-85**) is increasing by 4.5%. However, this must be offset by the 1% annual increase in number of beneficiaries (**Table IV.B2.—Covered Workers and Beneficiaries, Calendar Years 1945-2085**). The net is an annual increase of 3.5% which would appear to more than keep pace with inflation and productivity improvements.

This high level of annual increase in total benefits may have major adverse consequences. Increases in benefits above the increase in number of participants, cost of living and productivity create a structural increase in benefits. Here, compounding works against maintain balance between OASI income and benefits. If the rate of increase in benefits is only 0.5% higher than the increase in number of participants, cost of living and productivity, the effect over 75 years is an overall increase in benefits (costs for OASI) of 45%.

**Fifth Major Conclusion** — Structural benefit increases based on the Social Security OASI law should be avoided to prevent a counter-productive — in effect, hidden — effect undermining the national policy to ensure that OASI remains solvent and available to all participants.

Other Results — Figures 3 and 4 show only part of the important results. Other aspects include how the benefits change over time and solvency changes over time. The changes in benefits over time are shown in Figure 5 for both the current law and the proposal for gradual change to maintain solvency (Trust Fund Ratio) of 100%.

For the current law, if the Trust Fund is exhausted, the benefits must be reduced to match the OASI and Income Taxes on Benefits. This would result in an abrupt change of more than 20% after 2040, the year the Trust Fund would be exhausted according to current projections.

Also shown in Figure 5 is the gradual change in benefits with annual adjustments required to create projected solvency of 100%. Both curves converge to the same level of full benefits

since both match benefits paid to taxes received.

The downward trend in the out years indicates that the benefit formula and assumptions in the actuarial projections create an increase in benefits relative to Taxable Payroll. See “Fourth Major Conclusion”. The benefit increase appears to be associated with date of birth, not to cost-of-living adjustments.

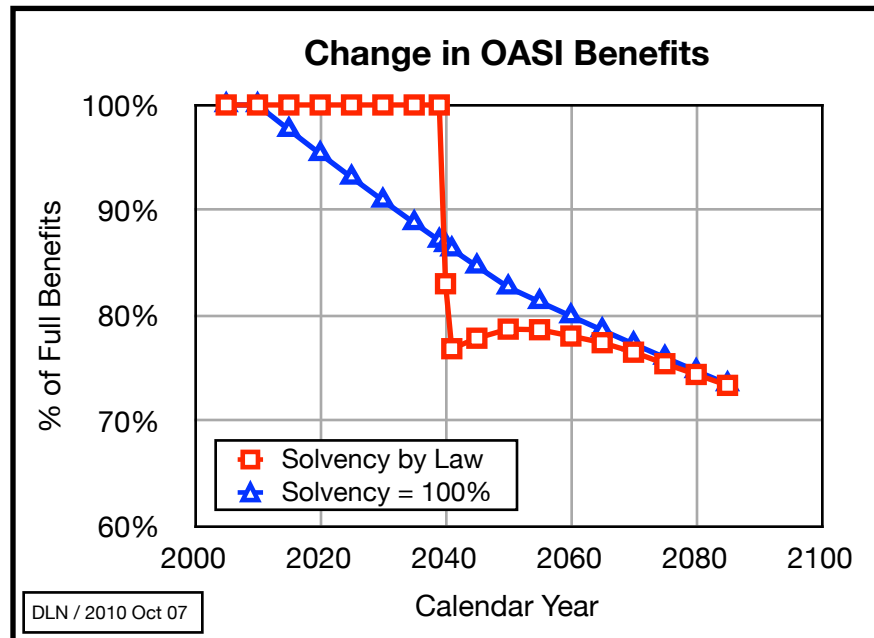
(revised 2010 Oct 31)

The magnitude of the decrease in benefits in Figure 5 for the out years is 0.336% per year, not the zero one might expect when the benefit payments are matched to the income. Is this an intended or unintended consequence in the benefit formula? Figure 5 suggests that the structural increase in benefits with date of birth, which may be only a part of the structural increase may be as large as 1%. As discussed above for a constant cost rate, the rate of increase in annual benefit payments would still be about 4.5% — the annual increase in Taxable Payroll, shown in Figure 4. However, this must be offset by the 1% annual increase in number of beneficiaries. The net is an annual increase of 3.5% which would appear to more than keep pace with inflation, but may have major adverse consequences as previously noted.

However, such an automatic increase in annual benefit payments, as reflected in the actuarial projections, is counterproductive to balancing taxes received and benefits paid for Social Security OASI. The increase in Taxable Payroll should be targeted to changes in number of beneficiaries, cost of living and productivity.

The second important result is to describe solvency, which is shown in Figure 6. Trust Fund Ratio is defined by Social Security as the ratio of costs for the year to the Trust Fund balance at the beginning of the year (or Assets as a Percentage of Annual Expenditures). For the current law, the solvency is rapidly reduced to zero and then remains at zero as benefits are limited to taxes received. For the gradual change in benefits with solvency of 100%, the solvency is gradually reduced from 400 to 100 as the current Trust Fund assets are used to ease the transition to benefits meeting taxes received.

Some Observations — The examples above are intended to bracket the alternatives that may be available. Clearly, taking no action now would result in a major disruption in 2040 or whenever the OASI Trust Fund balance is exhausted with benefits then being abruptly reduced by more than 20%.



**Figure 5 — Level of Change in Social Security OASI Benefits for Current Law and Solvency = 100%**

DLN / 2010 Oct 07

1. It is obvious from Figure 5 that, if some OASI beneficiaries are “grandfathered” to their current benefits, then a larger reduction in benefits would be imposed on other (later) beneficiaries. This is illustrated by the example of “Solvency by Law” curve in Figure 5.

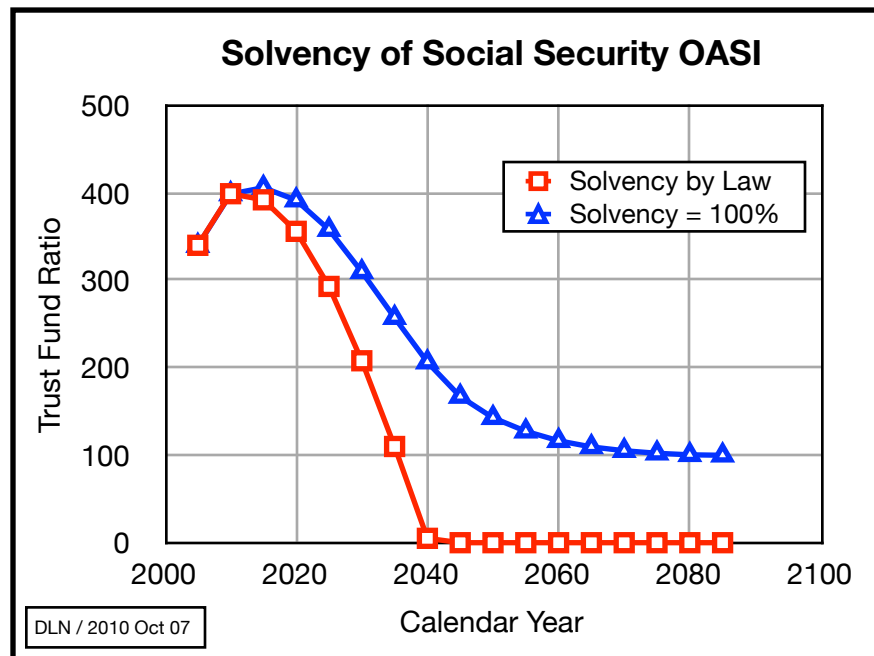


Figure 6 — Solvency of Social Security OASI for Current Law and Solvency = 100%

2. Since OASI taxes of 10.6% of Taxable Payroll are already a large cost to those currently paying the tax, increasing taxes does not seem to be a viable answer.

3. The existing Trust Fund balance can be used to ease the necessary changes in benefits necessary to ensure actuarial solvency.

4. With the gradual change in benefits through annual adjustment, future benefits are predictable and can be used by future beneficiaries in their retirement planning.

5. The magnitude of change in benefits over a retirement span of, say, 20 years is about 9%, significantly less than the change in benefits associated with raising the retirement age from 65 to 67 for full benefits of 14%. Cost-Of-Living adjustments would still apply.

6. Selling annual adjustments to all current and future beneficiaries can use several arguments and new information:

- Apply the rhetoric that the unfunded liabilities should not be passed on to our children and grandchildren. Politicians should walk the talk by applying adjustments to OASI fairly to both current and future beneficiaries.
- Use the same argument with current beneficiaries, namely that they should be willing to take a small annual adjustment to ensure that Social Security OASI is available for their children and grandchildren.
- Revise the annual statement of benefits to current beneficiaries to show the amount of their benefits provided with their contributions adjusted to net present value, and the amount provided by current working participants. This would likely show current beneficiaries that they are receiving much more than they contributed to the Social Security Security OASI Trust Fund.

(added 2010 Dec 28) Robert J. Samuelson discusses the unfairness of “grandfathering” benefits for current retirees and those nearing retirement in his article, [“On Medicare and Social Security, be unfair to the boomers”](#).

Additional Possibilities with Gradual Change in Benefits Yield Similar Results —

In the preceding discussion, the proposal for annual change in benefits to ensure long-term solvency was based on maintaining a solvency of 100% (Trust Fund Ratio = 100%). There are other possibilities, such as just ensuring solvency (Trust Fund Ratio = 0%) and ensuring solvency of 50% (Trust Fund Ratio = 50%). The Trust Fund Ratios over time for these three proposals plus the baseline of “solvency by law” are shown in Figure 7. Note that the three proposals approach 100%, 50% and 0% solvency over the long term.

The other important part of any proposal are the changes in OASI Benefits over time, which are shown in Figure 8 for the

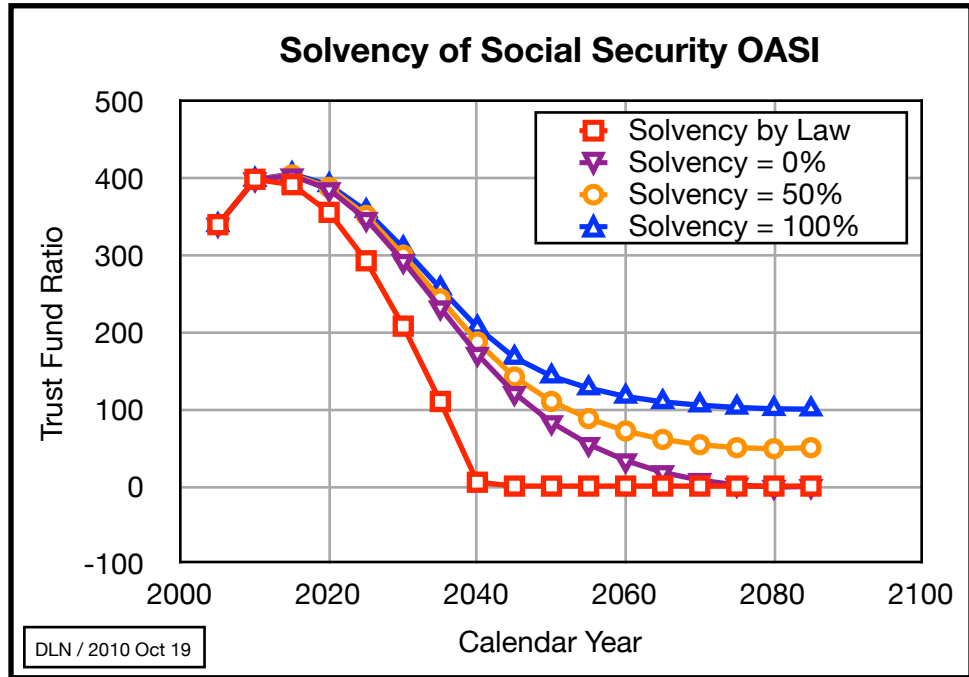


Figure 7 — Solvency of the Social Security Trust Fund over Time for Different Levels of Long-Term Solvency

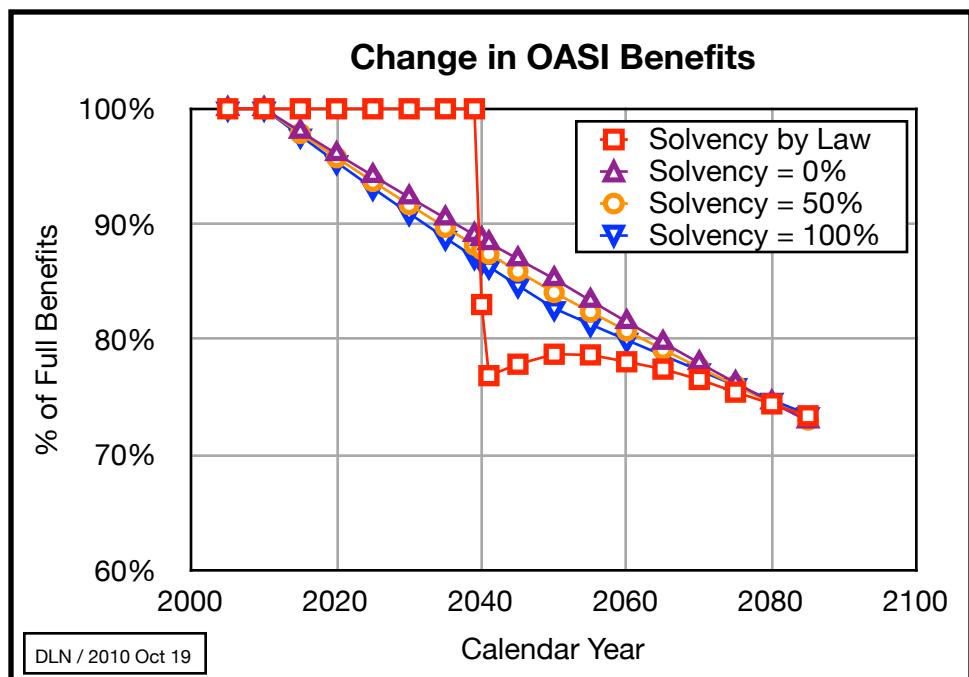


Figure 8 — Change in Social Security OASI Benefits over Time for Different Levels of Long-Term Solvency

various levels of solvency described in Figure 7. On the long term, all converge to the same change in OASI benefits since all make the costs equal to the income.

It is only in the intermediate years that there is some small difference in benefit level for the various levels of solvency. The reason for the small differences among the proposals is that differences among the proposals is small compared to the change required to adjust for the large insolvency with the current schedule of income and costs. The small differences among the proposals suggests that the solvency target can be based on actuarially-sound principles.

**Sixth Major Conclusion** — With annual adjustments in benefits, updated annually, the solvency target can be based on actuarially-sound principles without having a large effect on benefits.

**Seventh Major Conclusion** — With annual adjustments in benefits, the current retirement age for full benefits can be maintained. Participants can always elect to delay retirement which would result in higher annual benefits. See Figure 9.

**The Nine Guiding Principles of Social Security<sup>2</sup>**

(added and revised 2010 Nov 30) The Guiding Principles were apparently first published by the 1994-96 Advisory Council on Social Security. See [Membership](#). The Nine Basic Principles are described in a report by six the Council’s members who favored a *Maintain Benefits* plan, *Social Security for the 21st Century: A Strategy to Maintain Benefits and Strengthen America's Family Protection Plan* as part of Endnote 11 <<http://www.socialsecurity.gov/history/reports/adccouncil/report/ball1.htm#11>>, which states,

<sup>2</sup> The principles are not an official document of the Social Security Administration. However, they were written by Mr. Robert M. Ball, who was Commissioner of the SSA from 1962 to 1973 with other positions in the SSA back to 1952. The paper was published by Century Foundation Press in 1998.

The Social Security Administration references the document at [Oral History Collection, Robert M. Ball - Curriculum Vitae](#), but does not publish the document. The reference is “*Straight Talk About Social Security*, with Thomas N. Bethel, New York, NY, Century Foundation Press, 1998. ( Note: The Nine Guiding Principles of Social Security, pp. 59-64 reprinted in *Insuring the Essentials: Bob Ball on Social Security*. Also reprinted in *Insuring the Essentials* are pp. 1-5, 33-39 and 41-58 clearing up misunderstandings about financing and the disadvantages of privatization schemes.”

The Nine Guiding Principles of Social Security, reproduced in Appendix A, were copied on 2010 Sep 25 from <<http://www.socsec.org/feature.asp?issueid={3710AA73-A340-4380-8B60-2FFD70FD74C0}>>. The owner of the website with URL, <<http://www.socsec.org/>> was Century Foundation. Recently, Century Foundation reorganized their website and combined, <<http://www.socsec.org/>> into The Century Foundation website, <<http://tcf.org/retirement>>. However, the download for Mr. Ball’s paper, *Straight Talk about Social Security*, at <<http://tcf.org/publications/1998/7/pb273/?searchterm=%22robert%20M.%20ball>> currently does not work. The link will be updated to the Century Foundation when it is functional.

Consequently, I have used another source for Mr. Ball’s paper. The text is Mr. Ball’s paper and can be downloaded in the paper, *Social Insurance and Social Justice: Social Security, Medicare, and the Campaign Against Entitlements*, at <[http://www.springerpub.com/samples/9780826116147\\_chapter.pdf](http://www.springerpub.com/samples/9780826116147_chapter.pdf)>. The paper is reproduced in Part 1, Chapter; 1 in the paper beginning at PDF page 39.

Because of the importance of this paper, I have copied it into Appendix A.

Our *Maintain Benefits* plan follows the same guiding principles that have made Social Security by far the nation's most successful social program.

The remainder of Endnote 11 is the description and explanation of the Nine Basic Principles which become The Nine Guiding Principles of Social Security in later publications.

The *Maintain Benefits* plan is described in detail in the report, and is important because it describes what is required to maintain Social Security as it has existed for then 60 years.

Search for “Nine Basic Principles” for beginning of the description, which is near the end of the report. Mr. Robert M. Ball, a prior Commissioner of the Social Security Administration, was a member of this Advisory Council.

In 1998, the Century Foundation Press published

“Straight Talk About Social Security, with Thomas N. Bethel, New York, NY, Century Foundation Press, 1998. (Note: The Nine Guiding Principles of Social Security, pp. 59-64 reprinted in *Insuring the Essentials: Bob Ball on Social Security*. Also reprinted in *Insuring the Essentials* are pp. 1-5, 33-39 and 41-58 clearing up misunderstandings about financing and the disadvantages of privatization schemes.”

which includes Mr Ball’s discussion of The Nine Guiding Principles of Social Security. Explanation of each of The Nine Guiding Principles of Social Security is provided in Mr. Ball’s paper is copied into Appendix A. See [The Nine Guiding Principles of Social Security](#) for a more comprehensive discussion.

The Nine Guiding Principles are basically from the 1994-96 Advisory Council’s report. The 1994-96 Advisory Council records the principles that have been maintained and preserved in the legislation. The legislation since 1998 has also maintained and preserved the principles. The list of principles begins with the introductory paragraph:

“These and many other accomplishments and adjustments have taken place within a framework consisting of nine major principles. **Social Security is universal; an earned right; wage related; contributory and self financed; redistributive; not means tested; wage indexed; inflation protected; and compulsory.**

As with any framework, the stability of the entire structure depends on the contribution made by each part, so it is useful to review these principles and see how they work together.”

- |                                   |                        |
|-----------------------------------|------------------------|
| 1. Universal                      | 5. Redistributive      |
| 2. Earned right                   | 6. Not means tested    |
| 3. Wage related                   | 7. Wage indexed        |
| 4. Contributory and self-financed | 8. Inflation protected |
|                                   | 9. Compulsory          |

The Principles document, copied into Appendix A, provides an explanation for each of these principles.

(added 2010 Nov 13 & 2010 Nov 30) While these principles are not defined in the law, they reflect the observations by the 1994-96 Advisory Council of what principles are embodied in the law by its requirements for taxes and its defined benefits, and how these have changed

over the years. Obviously, the definition of the tax requirements and benefits are at the discretion of the Congress, and could be changed, extended, repealed. (added 2010 Nov 22) Clearly, the nine principles are consistent with Social Security as we know it today and the legislative changes since its inception. See [Social Security: A Program and Policy History](#).

(revised 2010 Nov 13) However, what has been established in the law are commitments and promises to the American citizens, or are interpreted that way by participants. These implied commitments have been made by Congress as defined in the laws governing Social Security. Full debate and disclosure are appropriate before Congress makes any changes in the law that are in conflict with these nine guiding principles.

(revised 2010 Nov 13) This paper is based on maintaining and preserving these nine principles. Any adjustments to ensure long-term solvency should be consistent with these principles. Basic fairness also requires that all participants — those currently working and contributing to the fund, those nearing retirement who are still contributing, and those already retired and receiving benefits — be treated alike and fairly (equal treatment under the law), and that any changes in taxes and benefits be gradual and predictable. With basic fairness, the principles are not substantively changed for any participant.

**Eighth Major Conclusion** — The Nine Guiding Principles of Social Security should be debated by Congress with the principles as may be revised incorporated into the Social Security law. Incorporation into the SS law would provide the clear commitment to participants.

### **Comparison of Various Proposals to The Nine Principles for Social Security**

The most-frequent proposals for addressing the shortfall of funding include increasing in the Social Security tax rate, increasing the maximum taxable earnings subject to Social Security tax, increasing the retirement age for full benefits, changes in benefits, and personal savings accounts. A larger list is available at [Proposals Addressing Trust Fund Solvency](#). In addition, there are numerous proposals for detail changes — many of which may be incomprehensible to the lay person. A comparison of some of these proposals to the nine principles follows:

1. Increasing in the Social Security tax rate — This disproportionately places the burden on those still working — particularly the young workers — who would pay more to get the same as current retirees. This proposal violates the principles of Earned Right and Wage Related as well as basic fairness.
2. Increasing the maximum taxable earnings subject to Social Security tax — This would fundamentally change the principles concerning Earned Right, Wage Related, Redistributive, and Not Means Tested if different maximum taxable earnings are used to determine OASI taxes and OASI benefits. The cap on maximum Social Security Benefits is related to the cap on wages and salaries subject to Social Security tax — the principle of Wage Related. It could also produce unintended consequences regarding any associated benefit increases. After-tax income must be considered since 85% of the OASI benefits are subject to income tax with the income tax returned to the OASI Trust

Fund. This proposal is fundamentally unfair because it singles out only high-income participants for OASI tax increases without providing any increased benefits — similar to singling out future beneficiaries for increases in the retirement age for full benefits.

3. Increasing the retirement age for full benefits — This disproportionately places the burden on those still working — particularly the young workers — who would receive lower benefits as compared to current retirees. Increasing the full-benefit retirement age is a decrease in benefits only for those still working. For those retiring at the same age, there is a decrease in benefits for each year increase in the age for full-retirement benefits. The Redistributive principle is related to different incomes not ages of participants. The reduction in retirement benefits with raising the retirement age for full benefits is seldom explained as an inherent consequence. It violates the principles of Earned Right and Wage Related as well as basic fairness.

(added 2010 Nov 23) Memo: Increasing the retirement age for full benefits is different from increasing the earliest early retirement age at which benefits are paid. Currently, the earliest early retirement age is 62. See [The Case for Raising Social Security's Early Retirement Age](#) by Andrew G. Biggs, [AEI Online](#), Wednesday, October 27, 2010 for discussion of effects of raising the minimum early retirement age. The Conclusion states,

“Increasing the EEA [Earliest Eligibility Age] for Social Security benefits could encourage Americans to remain in the workforce longer, significantly increasing their retirement income, boosting economic output, and increasing tax revenues. Extended work lives are possible for most Americans and would generate significant benefits to the economy, the federal budget, and, most importantly, individuals' own retirement security.”

4. Uniform changes in benefits — Changes in benefits if applied to all participants — both working and retired — can meet a fairness test and would be consistent with the nine principles.
5. Personal savings accounts — This violates a number of the nine principles. Moreover, converting tax payments into the Trust Fund to private accounts would exacerbate the shortfall in funding. Without a plan and comprehensive analysis of how Social Security OASI would be affected, this is not viable. Personal savings account are readily available to the higher-income participants through IrA and 401(k) plans and other investments for retirements. Lower-income participants already receive a favorable benefit through the redistributive principle. Personal savings accounts already exist in the form of IRAs and 401(k)s, etc.

Only Uniform changes in benefits place the burdens and benefits on both current and future participants alike. Since no combination of defined adjustments in Social Security taxes and benefits can possibly guarantee solvency over the long term because of variations in projections vs. actual, small annual adjustments in the benefits are required to ensure solvency. The small annual adjustments take advantage of the compounding effect from small numbers. This the only proposal in those listed above that satisfies all of the criteria, and is the subject of the proposal in this paper.

Appendix B provides a discussion of more proposals including the ones above as related to the Nine Principles.

**Important Trends and Policies Embedded in Social Security OASI**

A few calculations and graphs are provided to show the general trends in Social Security Benefits and on before- and after-tax income. The maximum Social Security benefit is limited regardless of very large pre-retirement income. The maximum income subject to Social Security tax is also limited by a defined “maximum taxable earnings”. In addition to the limit on maximum Social Security benefit, the progressive income tax further reduces the limit because more of the Social Security income becomes subject to income tax for recipients with larger other retirement incomes.

The current law defining Social Security taxes and benefits has now existed for over 25 years, and without major criticism except for (1) insufficient projected funding for the long term, and (2) decreased benefits for younger participants. Many of the younger participants — certainly those born after 1965 — believe that Social Security will not be available to them in retirement, or if they are, the benefits will be at a much reduced level. The current law clearly treats the younger participants less well because of the reduced benefits combined with higher Social Security taxes — both as compared to those born in the 1930s and early 1940s. There is an obvious unfairness and consequence of placing a disproportionate burden on one group of participants. [\(added 2010 Nov 23\) This would likely further erode the confidence by the younger participants that Social Security as it exists today will be available to them when they retire.](#)

**Benefit Calculations**

Basic Benefits in Percentages — The Social Security Online Calculator can be used to create the graphics that show the benefit trends built into the calculator. These trends are defined in the law and regulations. Table 1 was generated from the [Effect of Early or Delayed Retirement on Retirement Benefits](#) at Social Security Online. The values in the table are plotted in Figure 9.

<b>Social Security Retirement Calculator</b>						
Year of Birth	-----1937 and Earlier-----		-----1943 to 1954-----		-----1960 and Later-----	
Age at Retirement	Age at Retirement	% of Full Retirement Benefits	Age at Retirement	% of Full Retirement Benefits	Age at Retirement	% of Full Retirement Benefits
Year of Birth	1937&-		1943-1954		1955&+	
62	62	80%	62	75.00%	62	70.00%
63	63	86.67%	63	80.00%	63	75.00%
64	64	93.33%	64	86.67%	64	80.00%
65	65	100.00%	65	93.33%	65	86.67%
66	66	106.50%	66	100.00%	66	93.30%
67	67	113.00%	67	108.00%	67	100.00%

**Table 1 — Social Security Retirement Benefits based on Retirement Age and Year of Birth**

Table 1 and Figure 9 show the effects of both year of birth and age at retirement. For example, for a retirement age of 65, the retirement benefits decrease from 100% to 86.7% as the year of birth changes from 1937 to 1960. There are additional benefits with delayed retirement as shown by the benefit percentages greater than 100%.

While the schedule is based on increasing the retirement age, the effect is a reduction in benefits — both applied only to new retirees. Social Security Online states that, *“As a general rule, early retirement will give you about the same total Social Security benefits as full retirement over your lifetime, but in smaller amounts to take into account the longer period you will receive them.”* Consequently, when the age for full retirement benefits is increased, the effect is a decrease in benefits for all retirement ages since the remaining years of retirement are less.

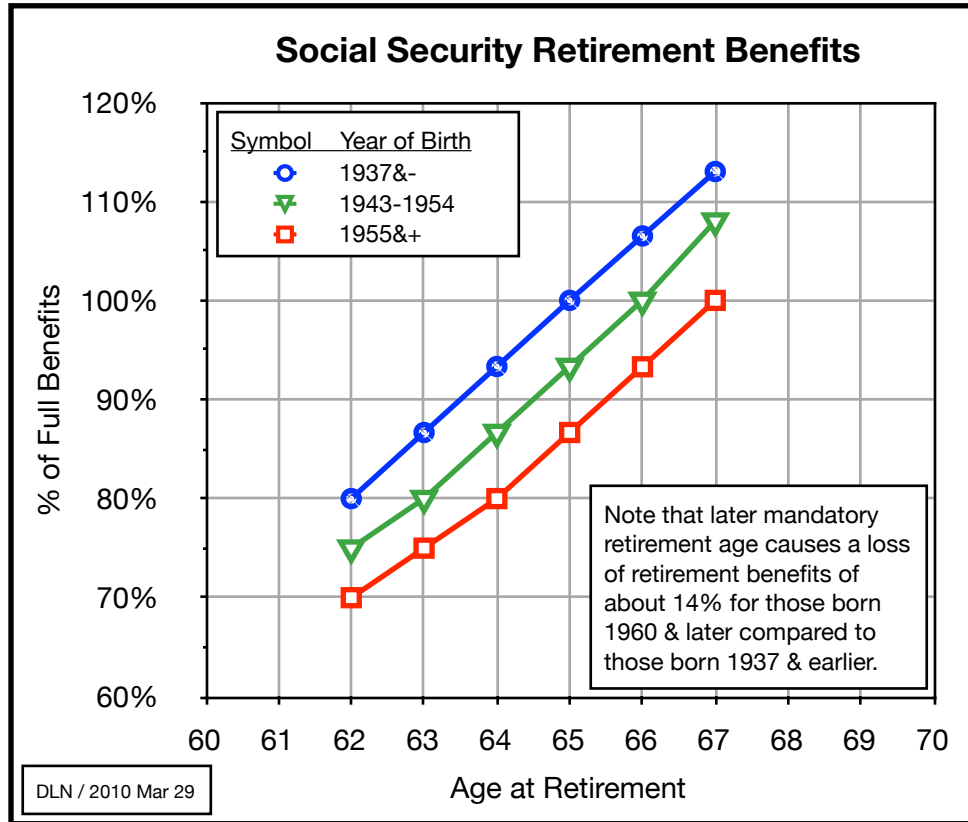


Figure 9 — Effect of Retirement Age and Year of Birth on Social Security Retirement Benefits

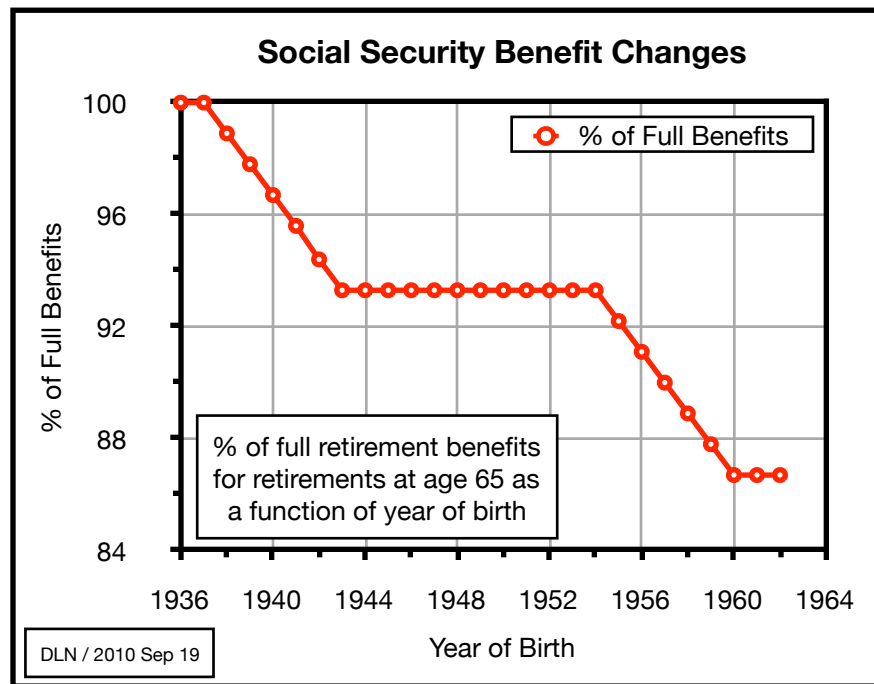


Figure 10 — Effect of Year of Birth on Social Security Retirement Benefits

Figure 9 shows the general trend but not the annual changes. A “vertical slice” from Figure 9 for Age of Retirement = 65 is shown in Figure 10. The data for Figure 10 were provided the [Effect of Early or Delayed Retirement on Retirement Benefits](#) at Social Security Online which provides a complete table. The graph in Figure 10 is a plot of the numbers in the age 65 column.

There are two year-of-birth segments that have adjustments. Both have changes of about 1 percentage point per calendar year. There is no adjustment for the birth range from 1943 through 1954 which has a retirement age of 66 for full benefits.

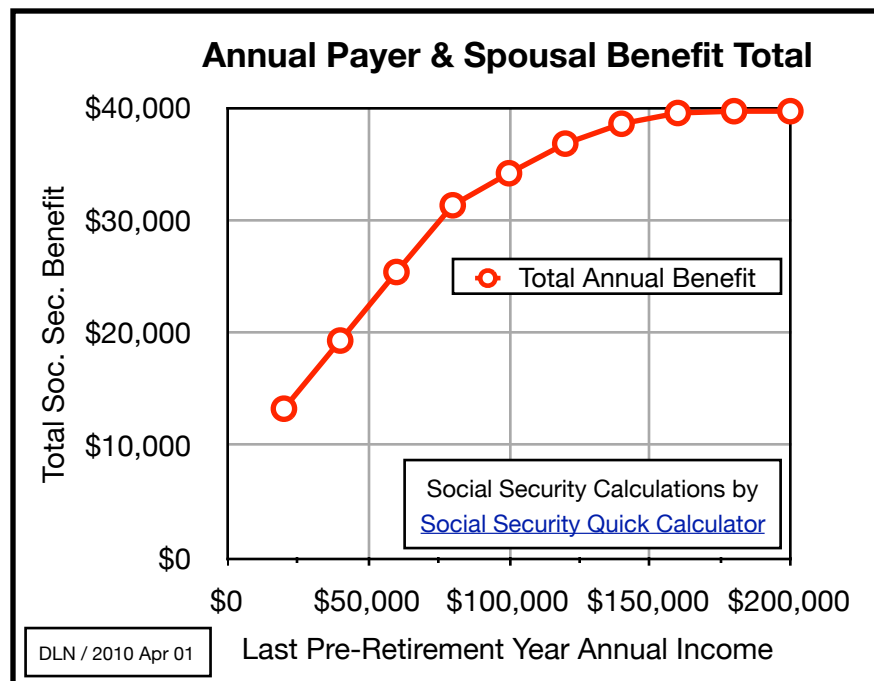
The significance of Figures 9 and 10 is that changes in benefits of approximately 1% per year have created reduced benefits **only** for younger participants. The progressively reduced benefits are borne only by the younger participants with increasing reduction in benefits for later dates of birth. However, even with the current reduced benefits for the younger participants, further reductions of some type or increased taxes are required to ensure solvency of the Social Security Trust Fund.

Further increases in the retirement age for full benefits will only disadvantage younger participants further. While such further increases in retirement age for full benefits might help the solvency of the Social Security Trust Fund, they would also increase the unfairness to younger and future participants. (added 2010 Nov 23) [This would likely further erode the confidence by the younger participants that Social Security as it exists today will be available to them when they retire.](#)

The gradual change process is clearly required to avoid disruptive decreases for current participants and to maintain stability and predictability for the retirement planning for future participants. However, any reduced benefits must be distributed equally. Everyone shares in the underfunding issue.

**Basic Benefits in Dollars**

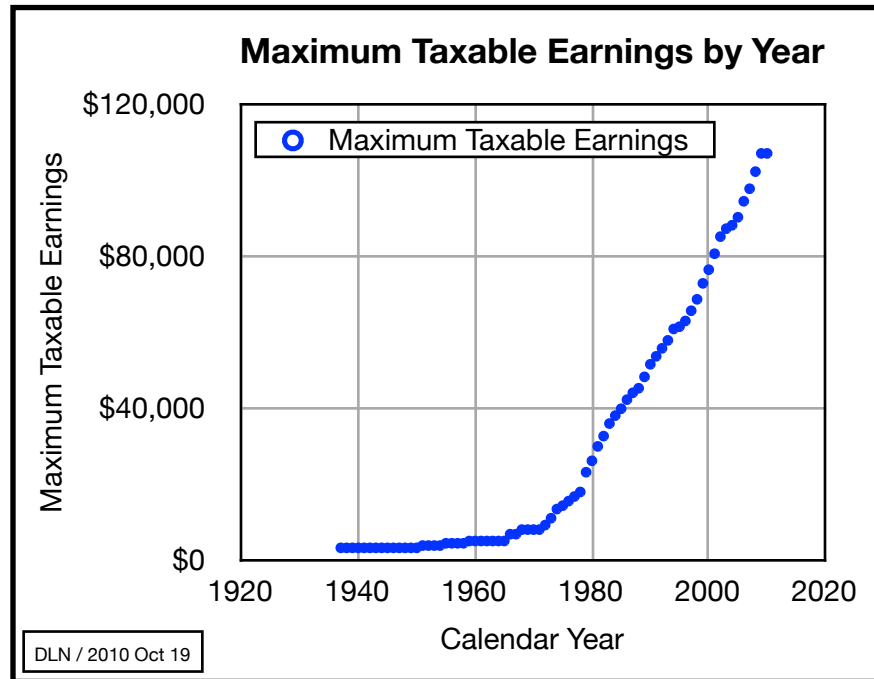
Before-Tax Income — The [Social Security Quick Calculator](#) is an excellent tool to define the basic benefits for Social Security recipients. The Quick Calculator uses the last year annual income as the only parameter. The Calculator assumes annual incomes for all of the working years, and calculates the Social Security Benefits from



**Figure 11 — Annual Payer and Spousal Retirement Benefit as a Function of Last Pre-Retirement Year Annual Income**

those annual incomes. In a sense it is a default calculator of benefits. The calculated results are shown in Figure 11 as a function of the Last Pre-Retirement Year Annual Income.

For pre-retirement annual income of \$100,000, all of the incomes in working years are less than the maximum taxable earnings, because income increases at a faster rate than COLA and the maximum taxable earnings. For \$140,000, most of the incomes in the working years were at the “[maximum taxable earnings](#)” — a Social Security term. The history “maximum taxable earnings” shown in Figure 12. The “maximum taxable earnings” have greatly increased over the years with a large increase (about



**Figure 12 — Maximum Taxable Earnings for Years 1937 through 2010**

6% per year) beginning in the middle 1970s as shown in Figure 12. This is well in excess of increases in cost of living plus increases from productivity improvements. The “maximum taxable earnings” affect both the income subject to OASI tax and the basic benefits.

**Ninth Major Conclusion** — The large increases in Maximum Taxable Earnings may be counterproductive to maintaining balance between OASI income and benefits since benefits increase with increases in maximum taxable earnings.

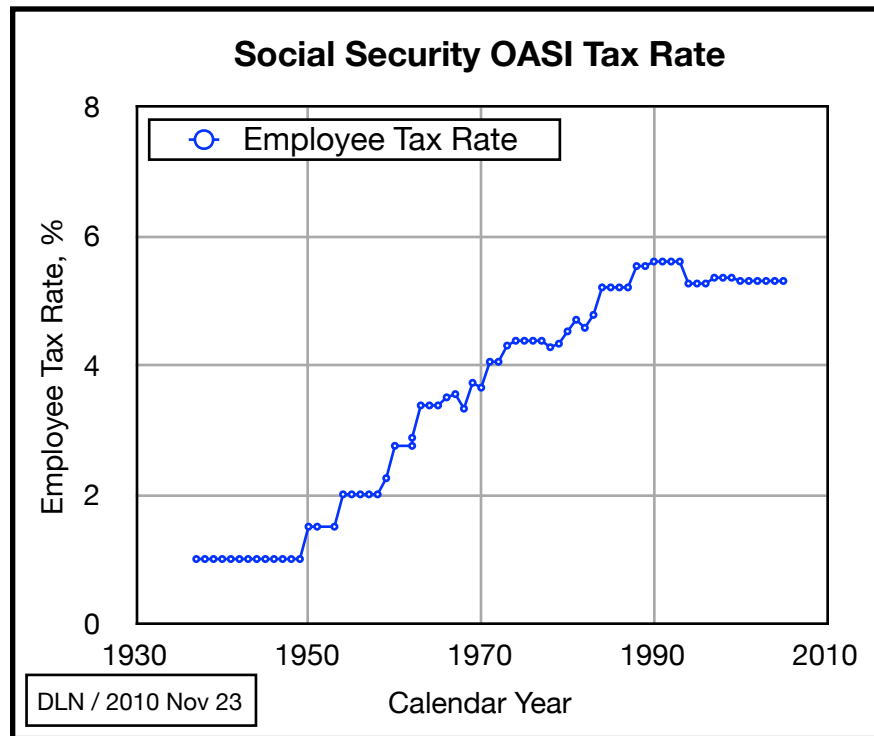
The large increase of about 6% per year in Maximum Taxable Earnings far exceeds the combined increase in cost of living and productivity, and affects both the OASI tax collected and future benefits (costs). However, the costs for the future benefits are delayed. As previously noted, the compounding effect of a structural increase of only 0.5% results in an increase of 45% over the 75-year actuarial period. Changes in the basic parameters in the OASI formulas built into the law can have large unintended consequences.

As the national retirement system based on an insurance model, the maximum benefits were limited. Accordingly, an upper limit of taxable income (maximum taxable earnings) was matched to the limited maximum benefits.

This principle is illustrated in Figure 11. For incomes up to \$80,000, the retirement benefits increase proportionately with pre-retirement income. Above \$80,000, the benefits level off and reach a maximum as shown in Figure 11. The gradual, rather than abrupt termination of increased benefits may be an artifact of the assumptions in the Quick Calculator. The maximum taxable earnings for all of the years do not occur at the same last pre-retirement year annual income.

Regardless, the trend illustrates the principle: there is a maximum income subject to Social Security tax because there is a maximum Social Security benefit. Figure 11 illustrates the fifth of **The Nine Guiding Principles of Social Security** (See Appendix A.): *Wage Related*.

(added 2010 Nov 23)  
[History of OASI Tax Rate](#)  
 — The large increase in taxable earnings is related to the number of participants paying into OASI, their earnings and the tax rate. The tax rate has increased substantially since the inception of Social Security as shown in Figure 13. The rate plotted is the rate paid by the employee. The employer pays the same amount resulting in the total tax being twice the amount shown in Figure 13. Self-employed persons currently pay twice the employee rate. In earlier years, the amount was somewhat less.



**Figure 13 — OASI Employee Tax Rate from 1937 through 2005**

The current tax rate is a five-fold increase from the original rate in 1937.

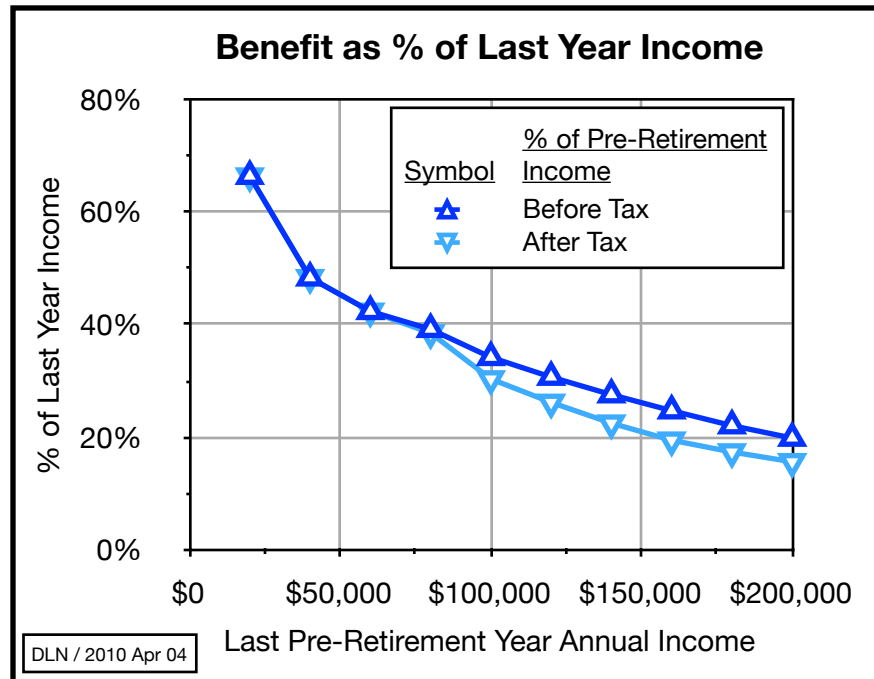
Many people quote the number of workers per retiree as an indicator of the insufficiency of funds in OASI. But that is a misleading index since tax rate and benefit rate are also factors. The important question is whether OASI has sufficient funds with small adjustments to be permanently solvent. This analysis indicates that the answer is yes.

**Chart 1. Overview of changes in the Social Security program, demographic events, and milestones** in [Social Security: A Program and Policy History](#) (Scroll down to Chart 1.) provides a summary of the legislative changes and provides a few graphs, two of which are similar to Figures 11 and 13, above. The information, however, is for combined OASI and DI. The webpage includes an extensive discussion of the history of Social Security and its legislative changes.

Progressive Benefits — Another question concerns the degree to which Social Security retirement is progressive or regressive. As previously stated, the maximum Social Security benefit is limited as income increases, but so is income on which the Social Security tax is paid. However, the two are not proportional as indicated in Figure 11. This creates the beneficial effect to those with lesser incomes shown in Figure 14, which shows the Social Security benefit as a percentage of of the

Last Pre-Retirement Year Annual Income. The retirement insurance benefits are skewed in favor of low-income recipients as indicated in Figure 14. In a sense, the Social Security insurance benefits provide a substantial safety net for participants with low incomes. Figure 14 illustrates the fifth of **The Nine Guiding Principles of Social Security** (See Appendix A.):

**Redistributive.** The redistributive factor increases with after-tax income as shown in Figure 14.



**Figure 14 — Social Security Benefit as a Percentage of the Last Pre-Retirement Year Annual Income**

(added 2010 Nov 04) While the benefits for the lower-income retirees are relatively small (See Figure 11) even with the redistributive factor, increases in benefits for lower-income retirees would seem to be counter to **The Nine Guiding Principles of Social Security** (See Appendix A.) and good public policy. The needs for the lower-income retirees can and should be met with the various safety nets which are already available: income tax credit, food stamps, heating assistance, etc.

**Tenth Major Conclusion** — Social Security OASI should not become a safety net for lower income retirees. Any safety net should be provided separately from funding from Social Security.

Benefit Trends for New Retirees — Social Security benefits also appear to increase slightly over time — over and above COLA increases. This is illustrated in Figure 15 which shows benefit trends over time as indicated by Year of Birth, expressed in constant Year-2010 dollars. The results are shown for a single beneficiary with maximum Social Security benefits (based on maximum monthly contributions or Maximum Taxable Earnings) and 50

percentile (median) income — approximately \$40,000. Constant Year-2010 Dollars were calculated using the [Social Security Quick Calculator](#). Both curves show the same trend with the rate being 0.9 and 1.4 % per year, respectively.

As previously noted, a structural increase of 0.5% per year in benefits (costs) compounded over 75 years results in a 46% increase in benefits. For a structural increase of 1% per year, the overall increase over 75 years is 110%. The curves in Figure 15 shown annual increases of 0.9 and 1.4%.

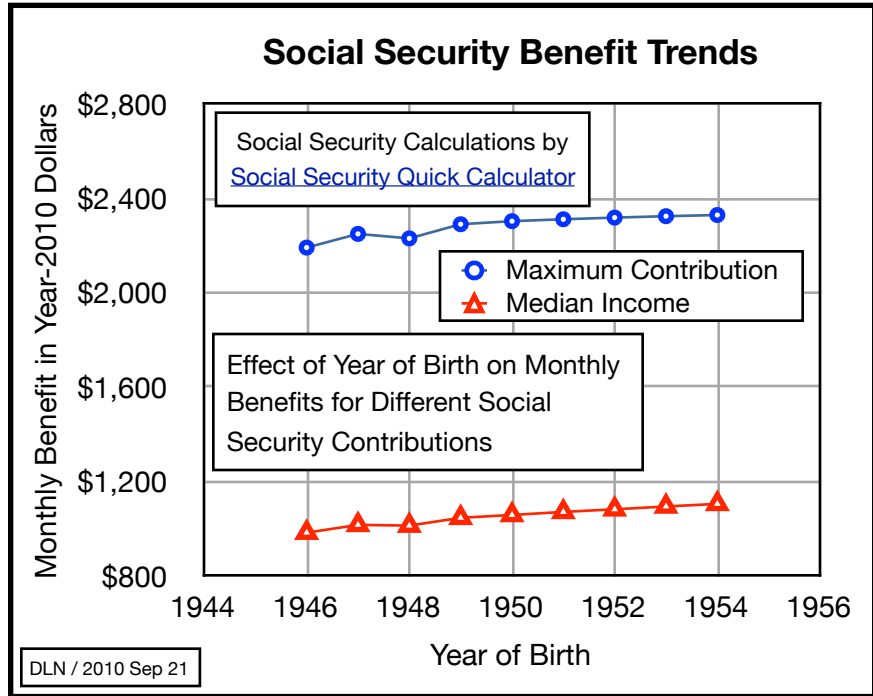


Figure 15 — Effect of Year of Birth on Monthly Retirement Benefit

This is a large effect and is likely counterproductive to maintaining balance between income and benefits. See “Fourth and Seventh Major Conclusions”. The increases do not apply to existing beneficiaries who only receive COLA increases, but is the increased benefit for younger beneficiaries.

This significant observation needs to be verified. The large increase in maximum taxable earnings (6% per year, which is well beyond any effects of cost-of-living and productivity improvements) is likely a factor. The reason for the increase needs to be verified and considered in any Social Security reform.

After-Tax Income — In estimating the after-tax income, other income in retirement must be considered. Those with higher incomes before

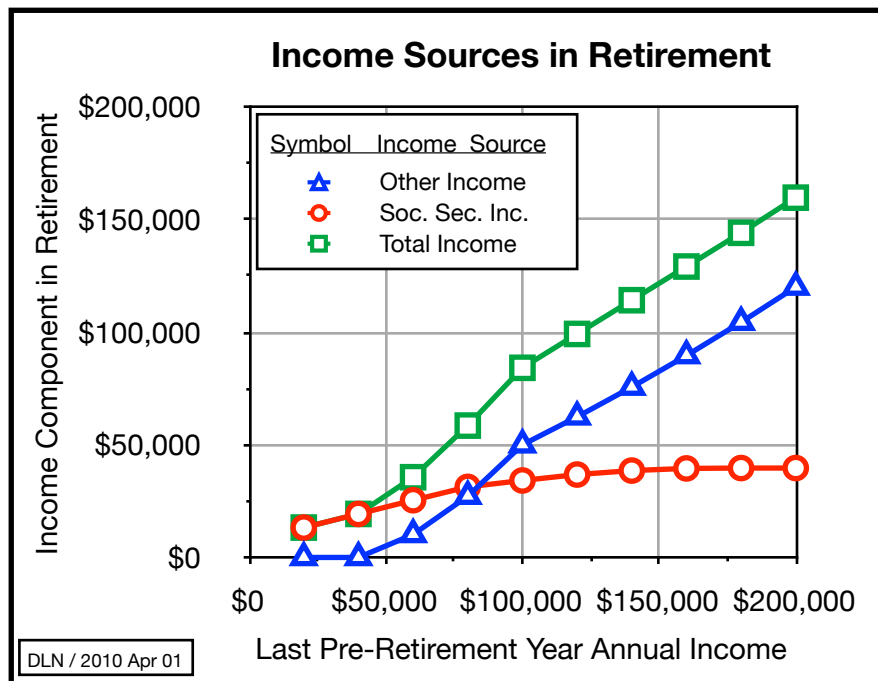


Figure 16 — Income Sources in Retirement used in the Analysis

retirement will likely have retirement incomes from retirement plans and investments and will likely have set more aside for retirement income. The assumptions are shown in Figure 16 which shows the income sources in retirement used in the calculations of before-tax and after-tax income. Other sources of retirement income must be known to estimate the before-tax and after-tax income.

The estimate of other retirement income in these calculations is based on the following assumptions:

1. those with \$200,000 last pre-retirement year income will have other income of \$120,000 over and above Social Security benefits (60% of last pre-retirement year income),
2. those with \$100,000 last pre-retirement year income will have other income of \$50,000 over and above Social Security benefits (50% of last pre-retirement year income),
3. those with last pre-retirement year income less than \$100,000 have progressively decreasing other retirement income as shown in Figure 16.

These assumptions are shown in Figure 16 in the curve labeled “Other Income”. The Social Security Income is the income shown in Figure 11. The Total Income is the sum of the two. As in the previous charts, the abscissa is the “Last Pre-Retirement Year Annual Income” which is an important determiner of the income in retirement.

The incomes in Figure 16 can then be used to determine the income taxes and after-tax incomes for the various possibilities. The simplest of tax returns was assumed and the taxes were determined by the [Federal Tax Estimator](#) — a tax estimator referenced at the Social

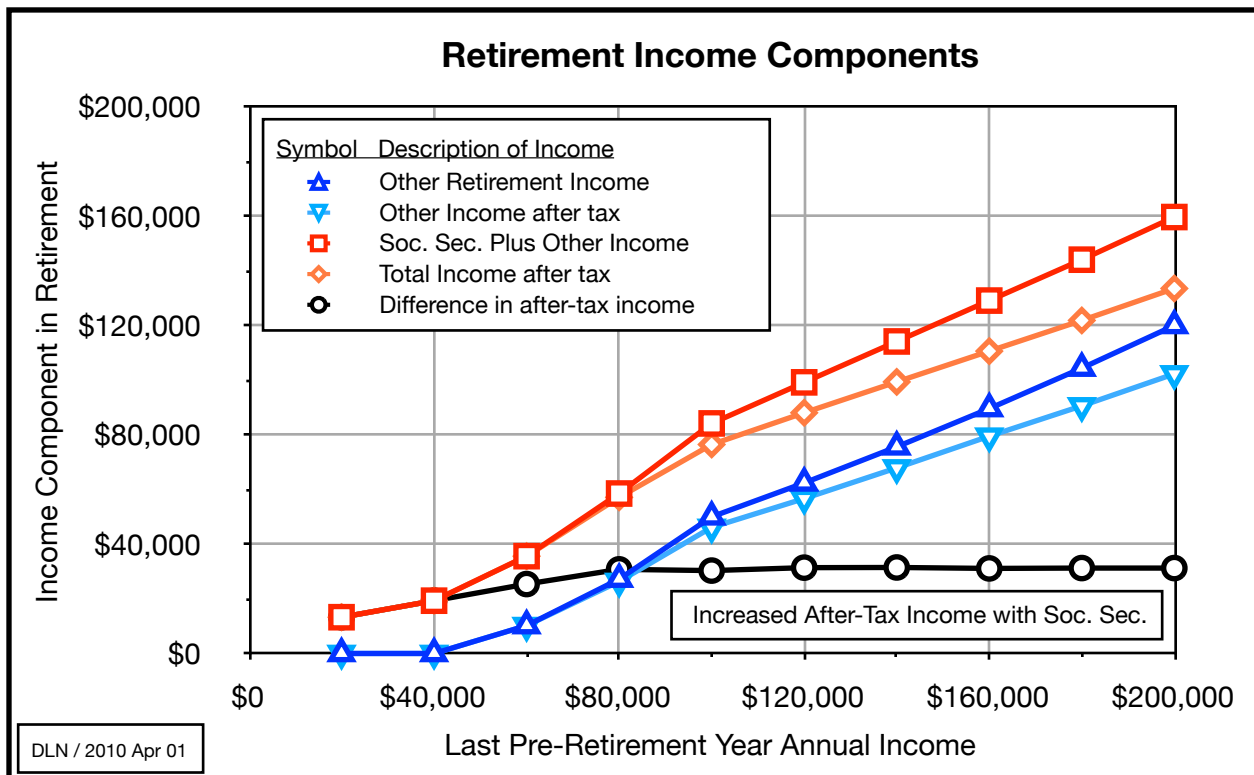


Figure 17 — Before- and After-Tax Incomes for Other Retirement Income and Social Security Income

Security Administration website that requires only basic information. The results are shown in Figure 17.

As shown in the legend for Figure 17, the income taxes are calculated first for the Other Retirement Income as the only income. Then the income tax for the total income (combined Other Retirement Income and Social Security Income) was determined. The upper two curves show the before- and after-tax total income. The central two curves are the before- and after-tax income from Other Retirement Income.

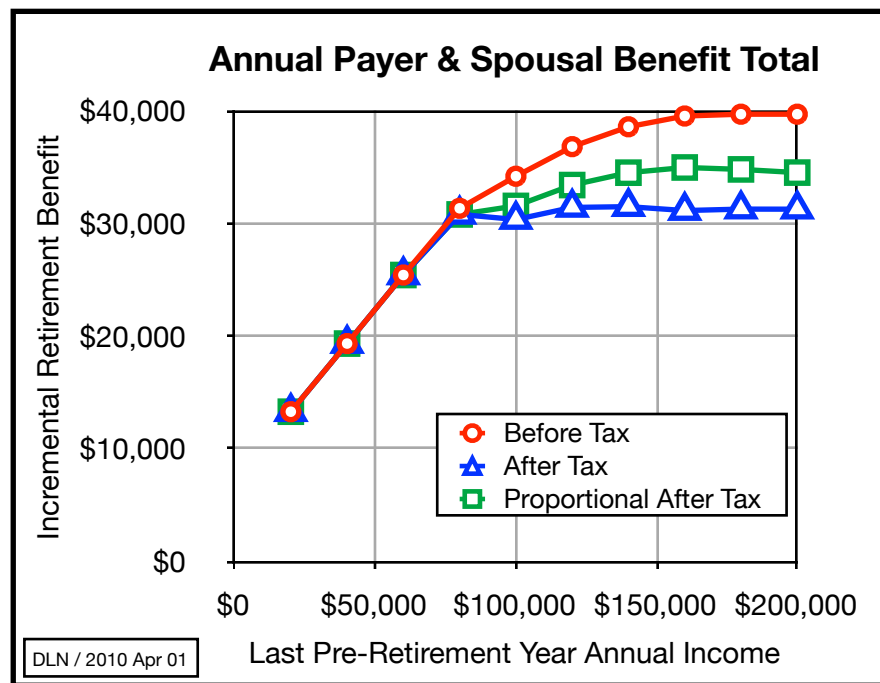
The bottom curve is the difference in after-tax income with the addition of Social Security Income. This is an important result for the higher-income tax payers who are subject to progressively higher marginal tax rates. This curve shows an increase in after-tax total income for pre-retirement incomes up to \$80,000, but no increase for pre-retirement incomes greater than \$80,000. As shown in the bottom curve, participants with pre-retirement incomes above \$80,000 receive no increase in after-tax income from any (diminishing) increases in Social Security benefits. The reasons are threefold:

1. the Social Security benefits level off for the higher-incomes as shown in Figure 11;
2. more of the Social Security income is subject to income tax with larger retirement incomes; and
3. other income in retirement also increases which also increases the income tax.

A better perspective of the threefold effects is shown in Figure 18. Figure 18 shows more precisely the increase in Incremental Retirement Income from Social Security Income with increases in pre-retirement income up to \$80,000. Very little is subject to income tax.

Two different trends for after-tax income are shown in Figure 18 for Pre-

Retirement Incomes above \$80,000. In the first with the legend “After Tax”, the income tax is calculated as the additional income tax with Social Security benefits over and above the income tax on the Other Retirement Income taken alone. Note that there is no increase in after-tax benefits for pre-retirement incomes of more than \$80,000. In effect, the marginal tax rate is



**Figure 18 — Before- and After-Tax Income from the Addition of Social Security Income to Other Retirement Income**

essentially 100%. Not only is the marginal tax rate essentially 100%, the participants paid additional Social Security tax on their incomes above \$80,000.

(revised 2010 Nov 23) Since the income tax on Social Security income is returned to the Social Security trust fund, **the after-tax income is the net benefit to the participant and is the net cost to OASI. Consequently, after-tax benefit is the appropriate measure of benefits to participants.**

Other methods could be used to determine before- and after-tax income from the Social Security benefits. All will be subject to the trend shown in Figure 18, but with possible different degrees. Regardless, the combination of the twofold effects will be large. The limit on pre-retirement income that provides after-tax benefits is \$80,000. The current limit on income subject to Social Security tax is \$106,800. Consequently, there is little additional after-tax benefit from the additional Social Security tax paid on the \$26,800.

In the second after-tax curve in Figure 18 with the legend “Proportional After Tax”, the total income tax is estimated for Social Security and Other Retirement Income in proportion to the amounts for these two types of income. This shows the leveling off of income after taxes at pre-retirement incomes above \$140,000. It shows a marginal tax rate of about 60% not counting the additional Social Security tax on their incomes above \$80,000. The trends for before- and after-tax income shown in Figure 18 are fundamental. These trends are expected in all reasonable calculations of Incremental Retirement Income from Social Security Income as a function of Pre-Retirement Income.

Figure 18 further illustrates the fifth of **The Nine Guiding Principles of Social Security** (See Appendix A.): ***Redistributive***.

## **Conclusions**

1. Since the longer-range requirements cannot be accurately predicted, a self-correcting method is needed to ensure permanent solvency of the Social Security Trust Fund.
2. A simple and fair self-correcting adjustment to ensure projected long-term solvency is an annual adjustment factor updated annually applied to all benefits.
3. Small annual adjustments, that have been accepted as appropriate and are in the current law, in Social Security OASI benefits can be made to bring OASI Income and Benefits in balance over the long term.
4. The structural increase in benefits built into the current law (benefit formula) appears to be counterproductive to maintaining solvency. This appears to advantage those with later dates of birth — possibly at the expense of current retirees.
5. Structural benefit increases based on the Social Security OASI law should be avoided to prevent a counterproductive — in effect, hidden — effect undermining the national policy to ensure that OASI remains solvent and available to all participants.
6. With annual adjustments in benefits, updated annually, the solvency target can be based on actuarially-sound principles without having a large effect on benefits.

7. With annual adjustments in benefits, the current retirement age for full benefits can be maintained. Participants can always elect to delay retirement which would result in higher annual benefits.
8. (revised 2010 Nov 16) The Nine Guiding Principles of Social Security should be debated by Congress with the principles as may be revised incorporated into the Social Security law. Incorporation into the SS law would provide the clear commitment to participants.
9. (revised 2010 Oct 31) The large increases in Maximum Taxable Earnings may be counterproductive to maintaining balance between OASI income and benefits since benefits increase with increases in maximum taxable earnings. Limiting increases in Maximum Taxable Earnings to the cost of living plus productivity improvements would seem to be good public policy.
10. (added 2010 Nov 05) Social Security OASI should not become a safety net for lower income retirees. Any safety net should be provided separately from funding from Social Security.
11. Since the income tax collected on OASI income is returned to the OASI Trust Fund, after-tax income should be the basis for evaluating the effects of any proposal on OASI benefits.
12. Some detail adjustments in the incomes subject to Social Security tax and benefits may be appropriate to ensure sharing of benefits and burdens among current and future recipients. Those, however, are beyond the scope of this paper.
13. The cost-of-living formula in OASI calculations should be studied and refined to ensure that it reflects the cost-of-living changes meaningful for retirees. More consistent year-to-year adjustments would be helpful. See <<http://www.socialsecurity.gov/policy/docs/ssb/v67n3/v67n3p73.html>>.

### **Summary and Recommendations**

Much effort has been placed on ensuring that the algorithms and calculations in this working paper are correct. They have been verified for some of the specific parameters in the [2010 OASDI Trustees Report](#). Moreover, the fundamental finding that Social Security OASI can be made permanently solvent with annual adjustments in benefits, updated annually, to ensure predicted solvency over the long term (75 years). The magnitude of the annual adjustment required is about 0.4% per year. Compounding of 0.4% per year over 75 years produces an overall reduction of 26%, which is the reduction required as reported in the [2010 OASDI Trustees Report](#).

An ongoing process that creates a change of 0.5% per year or less to permanently ensure solvency could be implemented beginning in 2016 (last date for the phase in the the prior legislation). The change could be phased in beginning in 2011 for participants born 1955 and earlier, 2012 for those born in 1956, ... 2016 for those born in 1960 to avoid a “double-reduction” in benefits for those ages. Those with decreasing benefits (those born in 1954 through 1960) as

shown in Figure 10 would not have the further adjustment until the second year of their retirements.

An observation made concerning several aspects of the factors discussed in this working paper is that there may be a structural benefit increase (annual cost increase) with later dates of birth. It may be on the order of magnitude of 1% per year. It is not surprising that the complex formulas used to define the benefits might include some unintended consequences. The magnitude of the structural increase in costs may well exceed the downward annual adjustments necessary to achieve projected solvency over the long term. Are these structural increases intended or unintended? Understanding the reasons for this observation is very important, but is beyond the scope of this working paper.

### **List of Significant Changes**

1. 2010 Oct 26 — Initial publication and posting.
2. 2010 Oct 27 — Paragraph added on page 3 describing the unique ideas in this working paper and proposal.
3. 2010 Oct 31 — Changed title to “**Permanent Solvency for Social Security**”. Was “**On the Solvency of Social Security**”. Revised paragraph concerning apparent structural increase in benefits embedded in the formulas and related Conclusion 8.
4. 2010 Nov 03 — Added sentence providing reference to Appendix D — Methodology for Calculations.
5. 2010 Nov 04 — Added paragraph and Conclusion 9 concerning whether or not Social Security OASI should be expanded to provide a safety net.
6. 2010 Nov 07 — Added reference and link to Heritage Foundation Report.
7. 2010 Nov 10 — Added the quantitative magnitude of the structural increase in benefits is 0.28% per year that appears to be in the benefit formula.
8. 2010 Nov 16 — Added paragraph on a comprehensive [History of SSA 1993-2000](#). Internet links to the chapters and other references are included. Also added new Eighth Major Conclusion and renumbered the subsequent conclusions. Internet links checked and updated as required.
9. 2010 Nov 22 — Added OASI tax rate chart (new Figure 13) and renumbered the subsequent figures.
10. 2010 Nov 23 — Added memo re difference between increasing the retirement age for full benefits increasing the early (minimum) retirement age at which benefits are paid. Also added in multiple places a statement concerning erosion of confidence by younger participants that OASI as it exists today will be available to them when they retire. Revised paragraph to state that after-tax income is the net benefit to the participant and the net cost to OASI.
11. 2010 Nov 30 — Added content and revised the basis for The Nine Guiding Principles of Social Security.
12. 2010 Dec 28 — Added reference to Robert Samuelson’s article.

## **The Nine Guiding Principles of Social Security**

Former SSA Commissioner [Robert Ball](#) discusses the guiding principles that have made Social Security the most durable, successful and popular government program of the last 70 years. These nine principles have made Social Security unique in its ability to survive short-sighted political calculations, balance public opinion, and maintain promises across generations:

In the midst of the Great Depression, the founders of today's Social Security system took the bold step of establishing a new institution which they expected to be slow-growing but permanent. They wanted to make a decent retirement attainable for millions of Americans who would otherwise become dependent on their families or on public assistance when they grew too old to work or could no longer find employment. They wanted to protect workers' dependents by providing insurance to make the death of a breadwinner more financially manageable. They wanted to put an end to the poorhouse by distributing program income so as to provide at least a minimally adequate benefit for everyone regularly contributing. And, foreseeing the inevitability of change—including the eventual need to insure against other major risks such as disability and illness—they sought to design an institution based on sustainable principles.

Accordingly, they took the long view. They gave major emphasis to estimating program income and expenses over a much longer period than was customarily done in other countries, and this is still true today. The time frame of 75 years that is now used for Social security estimates is much longer than that used in almost all other contexts, from foreign social insurance programs to federal budgeting. The point, then and now, was not to try to pretend that anyone could really know precisely what would be happening in 75 or 25 years; the point was that the planners of Social Security in making exceptionally long-term commitments, wanted always to be looking far enough ahead to anticipate necessary improvements and make needed changes in ample time to preserve the integrity of the program.

That approach has served well. The legislation of 1935 and 1939 created the basic design of Social Security, and all major legislation since then can be seen as building on that design: extending coverage to more and more workers, improving the level of protection, adding protection against loss of income from long-term and total disability, providing protection for the elderly and disabled against the increasingly unmanageable cost of medical care, protecting against the erosion of income by inflation, and abolishing all statutory differences in the treatment of men and women.

These and many other accomplishments and adjustments have taken place within a framework consisting of nine major principles. **Social Security is universal; an earned right; wage related; contributory and self financed; redistributive; not means tested; wage indexed; inflation protected; and compulsory.**

As with any framework, the stability of the entire structure depends on the contribution made by each part, so it is useful to review these principles and see how they work together.

1. **Universal:** Social Security coverage has been gradually extended over the years to the point where 96 out of 100 jobs in paid employment are now covered, with more than 142 million working Americans making contributions in 1997 [154 million in 2003]. And the goal of complete universality can be reached by gradually covering those remaining state and local government positions that are not now covered.
2. **Earned right:** Social Security is more than a statutory right; it is an *earned* right, with eligibility for benefits and the benefit rate based on an individual's past earnings. This principle sharply distinguishes Social Security from welfare and links the program appropriately, to other earned rights such as wages, fringe benefits, and private pensions.
3. **Wage related:** Social Security benefits are related to earnings, thus reinforcing the concept of benefits as an earned rights and recognizing that there is a relationship between one's standard of living while working and the benefits level needed to achieve income security in retirement. Under Social Security, higher-paid earners get higher benefits, but the lower-paid get more for what they pay in.
4. **Contributory and self-financed:** The fact that workers pay ear-marked contributions from their wages into the system also reinforces the concept of an earned right and gives contributors a

## Appendix A — The Nine Guiding Principles of Social Security

moral claim on future benefits above and beyond statutory obligations. And, unlike many foreign plans, Social Security is entirely financed by dedicated taxes, principally those deducted from workers' earnings matched by employers, with the self-employed paying comparable amounts. The entire cost of benefits plus administrative expenses (which amount to less than 1 percent of income) is met without support from general government revenues.

The self-financing approach has several advantages. It helps protect the program against having to compete against other programs in the annual general federal budget—which is appropriate, because this is a uniquely long-term program. It imposes fiscal discipline, because the total earmarked income for Social Security must be sufficient to cover the entire cost of the program. And it guards against excessive liberalization: contributors oppose major benefit cuts because they have a right to benefits and are paying for them, but they also oppose excessive increases in benefits because they understand that every increase must be paid for by increased contributions. Thus a semi-automatic balance is achieved between wanting more protection versus not wanting to pay more for it.

5. **Redistributive:** One of Social Security's most important goals is to pay at least a minimally adequate benefit to workers who are regularly covered and contributing, regardless of how low-paid they may be. This is accomplished through a redistributive formula that pays comparatively higher benefits to lower-paid earners. The formula makes good sense. If the system paid back to low-wage workers only the benefit that they could be expected to pay for from their own wages, millions of retirees would end up impoverished and on welfare even though they had been paying into Social Security throughout their working lives. This would make the years of contributing to Social Security worse than pointless, since the earnings paid into Social Security would have reduced the income available for other needs throughout their working years without providing in retirement any income greater than what would be available from welfare. The redistributive formula solves this dilemma.
6. **Not means tested:** In contrast to welfare, eligibility for Social Security is not determined by the beneficiary's current income and assets, nor is the amount of the benefit. This is a key principle. It is the absence of a means test that makes it possible for people to add to their savings and to establish private pension plans, secure in the knowledge that they will not then be penalized by having their Social Security benefits cut back as a result of having arranged for additional retirement income. The absence of a means test makes it possible for Social Security to provide a stable role in anchoring a multi-tier retirement system in which private pensions and personal savings can be built on top of Social Security's basic, defined protection.
7. **Wage indexed:** Social Security is portable, following the worker from job to job, and the protection provided before retirement increases as wages rise in general. Benefits at the time of initial receipt are brought up to date with current wage levels, reflecting improvements in productivity and thus in the general standard of living. Without this principle, Social Security would soon provide benefits that did not reflect previously attained living standards.
8. **Inflation protected:** Once they begin, Social Security benefits are protected against inflation by periodic cost-of-living adjustments (COLAs) linked to the Consumer Price Index. Inflation protection is one of Social Security's greatest strengths, and one that distinguishes it from other (except federal) retirement plans. No private pension plan provides guaranteed protection against inflation, and inflation protection under state and local plans, where it exists at all, is capped. Without COLAs, the real value of Social Security benefits would steadily erode over time, as is the case with unadjusted private pension benefits. Although a provision for automatic adjustment was not part of the original legislation, the importance of protecting benefits against inflation was recognized, and over the years the system was financed to allow for periodic adjustments to bring benefits up to date. But this updating was done only after a lag. Provision for automatic adjustment was added in 1972.
9. **Compulsory:** Social Security compels all of us to contribute to our own future security. A voluntary system simply wouldn't work. Some of us would save scrupulously, some would save sporadically, and some would postpone the day of reckoning forever, leaving the community as a whole to pay through a much less desirable safety-net system. With a compulsory program, the

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problem of adverse selection—individuals deciding when and to what extent they want to participate, depending on whether their individual circumstances seem favorable—is avoided (as is the problem of obtaining adequate funding for a large safety-net program serving a constituency with limited political influence).

\* \* \*

In the middle of the Depression it took courage to enact a system based on these principles. The depression was a time of enormous and immediate needs, but Social Security was designed to be a slow-growing tree, one that could not provide much shelter in the near term. The point, however, was that, once grown, it would be strong enough to weather bad times as well as good.

A contributory retirement system takes a long time to develop, since by definition those who are already retired are not eligible for benefits. Fifteen years after the program was set up, only 16 percent of the elderly were receiving benefits, and it was not until the 1950s that politicians began to see much advantage in championing Social Security improvements. And it was only in the 1960s, three decades after enactment, that Social Security began having a major impact, paying benefits that were high enough and universal enough to significantly reduce poverty among the elderly, the disabled, and the survivors of beneficiaries. After the amendments of 1972 further increased benefits substantially and provided for automatic inflation protection, Social Security fully assumed the role planned for it as the all-important base of a multi-tier retirement system in which private pensions and individual savings are added to Social Security's defined protection.

The importance of that role would be difficult to exaggerate. Today Social Security is the only organized retirement plan—the only assured source of retirement income—for fully half of the total workforce. And it is the base upon which all who are able to do so can build the supplementary protection of pensions and individual savings.

Social Security continues to be the most popular and successful program in America's history because its guiding principles enable it to work exactly as intended: as America's family protection plan.

—From [Straight Talk about Social Security](#) (URL no longer exists with referral to Century Foundation), by Robert Ball with Thomas N. Bethell (Century Foundation, 1998). Also available as Part 1, Chapter 1 in [The Nine Guiding Principles of Social Security](#) (See Part 1, Chapter 1.) at [http://www.springerpub.com/samples/9780826116147\\_chapter.pdf](http://www.springerpub.com/samples/9780826116147_chapter.pdf) beginning at PDF page 39.

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\* Copied on 2010 Sep 25 from

<http://www.socsec.org/feature.asp?issueid={3710AA73-A340-4380-8B60-2FFD70FD74C0}>>. Also available at [The Nine Guiding Principles of Social Security](#) (See Part 1, Chapter 1.) beginning at PDF page 39.

**Appendix B — Analysis of Various Proposals for “Fixing” Social Security Compared to  
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**Proposals, Criteria and Discussion**

A web page on the Social Security website is devoted to [Proposals](#). The introductory paragraph states:

The last 5 [Trustees Reports](#) have indicated that Social Security's **Old-Age, Survivors, and Disability Insurance** (OASDI) Trust Funds would become exhausted between 2037 and 2041 under the intermediate set of economic and demographic assumptions provided in each report. If no legislative change in enacted, scheduled tax revenues will be sufficient to pay only about three fourths of the scheduled benefits after trust fund exhaustion. Many policymakers have developed proposals and options to address this long-range solvency problem.

The web page includes a list of proposals for addressing the funding issue dating back to 1995. All involve burdens and benefits for current and future recipients.

Clearly-defined criteria are needed to evaluate the various proposals. The criteria used in this analysis are:

- preserve Social Security as the national retirement system,
- create solutions that are “outside the box”,
- sharing of the benefits and burdens,
- gradually correct any benefits and burdens that are not shared among present and future participants,
- make the benefits self-matching to the revenues over the long term (75 years) with annual adjustments in benefits so that no further legislation is needed to ensure solvency.

Various proposals are informally on the table for addressing the shortfall of funding. Below are some of them with observations added.

1. Increase the Social Security tax rate. — This disproportionately places the burden on those still working — particularly the young workers — who would pay more to get the same as current retirees. This proposal violates the principles of Earned Right and Wage Related as well as basic fairness.
2. Increase the taxable maximum earnings subject to Social Security tax. — This would fundamentally change the principles concerning Earned Right, Wage Related, Redistributive, and Not Means Tested if different maximum taxable earnings are used to determine OASI taxes and OASI benefits. The cap on maximum Social Security Benefits is related to the cap on wages and salaries subject to Social Security tax — the principle of Wage Related. It could also produce unintended consequences regarding any associated benefit increases. After-tax income must be considered since 85% of the OASI benefits are subject to income tax with the income tax returned to the OASI Trust Fund. The charts for after-tax income show that increasing the maximum taxable earnings subject to Social Security tax would single out the higher-income participants to pay more but receive nothing in return — clearly contrary to Social Security being the “Wage Related” principle in Social Security OASI.
3. Increase the retirement age at which full benefits are available. — This disproportionately places the burden on those still working — particularly the young workers — who would

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receive lower benefits as compared to current retirees. Increasing the full-benefit retirement age is a decrease in benefits only for those still working. For those retiring at the same age, there is a decrease in benefits for each year increase in the age for full-retirement benefits. The Redistributive principle is related to different incomes not ages of participants. The reduction in retirement benefits with raising the retirement age for full benefits is seldom explained as an inherent consequence. It violates the principles of Earned Right and Wage Related as well as basic fairness. This would apply only to the younger participants and would unfairly apply only to them. Raising the retirement age by one year is equivalent to reducing benefits by 7%. (added 2010 Nov 23) This would likely further erode the confidence by the younger participants that Social Security as it exists today will be available to them when they retire.

(added 2010 Nov 23) Memo: Increasing the retirement age for full benefits is different from increasing the earliest early retirement age at which benefits are paid. Currently, the earliest early retirement age is 62. See [The Case for Raising Social Security's Early Retirement Age](#) by Andrew G. Biggs, [AEI Online](#), Wednesday, October 27, 2010 for discussion of effects of raising the minimum early retirement age. The Conclusion states,

“Increasing the EEA [Earliest Eligibility Age] for Social Security benefits could encourage Americans to remain in the workforce longer, significantly increasing their retirement income, boosting economic output, and increasing tax revenues. Extended work lives are possible for most Americans and would generate significant benefits to the economy, the federal budget, and, most importantly, individuals' own retirement security.”

4. Uniform changes in benefits — Changes in benefits if applied to all participants — both working and retired — can meet a fairness test and would be consistent with the nine principles. This would apply to all current and future participants, and would preserve Social Security as the National Retirement system.
5. Changes in the inflation adjustment — This would affect current workers and retirees alike. The Inflation-Protected principle refers to COLA. There are different COLA indicators. Since the COLA adjustment in Social Security affects both benefits and taxes, the overall effect appears to be small. The Social Security Administration report, [Social Security Cost-of-Living Adjustments and the Consumer Price Index](#), states, “A projection by SSA’s Office of the Chief Actuary estimated that annual COLAs based on the Chained C-CPI-U beginning in 2006 would delay the date of OASDI insolvency by 4 years.”
6. Create personal savings accounts. — This violates a number of the nine principles. Moreover, converting tax payments into the Trust Fund to private accounts would exacerbate the shortfall in funding. Without a plan and comprehensive analysis of how Social Security OASI would be affected, this is not viable. This would apply only to those who currently have many working years remaining before retirement. It would provide a benefit to them and increase the shortfall in the Trust Fund, unless benefits were reduced for participants. Personal savings account are readily available through IRAs and 401(k)

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plans and other investments for retirements. Lower-income participants already receive a favorable benefit through the redistributive principle.

7. Create a combination of the above. — Any combination would likely not share burdens and benefits, except for Item 4.

In addition, there are numerous proposals for detail changes — many of which may be incomprehensible to the lay person.

Only variations of Item 4. satisfy all of the Nine Guiding Principles of Social Security. Since no combination of defined adjustments in Social Security taxes and benefits can possibly guarantee solvency over the long term, small incremental adjustment in the benefits is required annually to ensure solvency. Item 4 the only proposal in those listed above that satisfies all of the criteria. In addition, some detail adjustments in the incomes subject to Social Security tax and benefits may be appropriate to ensure sharing of benefits and burdens among current and future recipients. Those, however, are beyond the scope of this paper.

Discussion — The preceding calculations and graphs show the general trends in Social Security Benefits and on before- and after-tax income. The maximum Social Security benefit is limited regardless of very large pre-retirement income. The maximum income subject to Social Security tax is also limited by a defined “maximum taxable earnings”. In addition to the limit on maximum Social Security benefit, the progressive income tax further reduces the limit because more of the Social Security income becomes subject to income tax for recipients with larger other retirement income.

The current law defining Social Security taxes and benefits has now existed for over 25 years, and without major criticism except for (1) insufficient funding for the long term, and (2) decreased benefits for younger participants. Many of the younger participants — certainly those born after 1965 — believe that Social Security will not be available to them in retirement, or if they are, the benefits will be at a much reduced level. The current law clearly treats the younger participants less well because of the reduced benefits combined with higher Social Security taxes — both as compared to those born in the 1930s and early 1940s. There is a consequence of placing a disproportionate burden on one group of participants. [\(added 2010 Nov 23\) This would likely further erode the confidence by the younger participants that Social Security as it exists today will be available to them when they retire.](#)

Social Security benefits have a cushion against price inflation by currently calculating cost-of-living adjustments based on wages and salaries which are typically about 1 percentage point higher than the inflation based on the consumer price index. It should be feasible to make annual adjustments in benefits based on ensuring long-term solvency with benefits annual adjustments that are still higher than the changes in the consumer price index.

The analysis in this paper shows that the Social Security OASI — the national retirement system — can be made permanently solvent by annually adjusting the benefits to make the fund solvent over a 75-year time period. The calculations in this paper indicate the annual adjustment would be less than 0.5%, thus making the annual adjustment between the cost of living based on wages and the one based on prices. This would be a very small adjustment for everyone and

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would guarantee retirement predictable benefits for current retirees and all future retirees — our children and grandchildren.

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**Table IV.B1.—Annual Income Rates, Cost Rates, and Balances, Calendar Years 1990-2085**

at <[http://www.ssa.gov/OACT/TR/2010/IV\\_LRest.html#375339](http://www.ssa.gov/OACT/TR/2010/IV_LRest.html#375339)>

[As a percentage of taxable payroll]

Calendar year	OASI			DI			OASDI		
	Income rate <sup>a</sup>	Cost rate	Balance	Income rate <sup>a</sup>	Cost rate	Balance	Income rate <sup>a</sup>	Cost rate	Balance
<b>Historical data:</b>									
1990	11.47	9.66	1.82	1.18	1.09	0.10	12.66	10.74	1.91
1991	11.51	10.15	1.36	1.21	1.18	0.03	12.72	11.33	1.39
1992	11.34	10.27	1.07	1.20	1.27	-0.06	12.54	11.54	1.00
1993	11.25	10.37	0.88	1.20	1.35	-0.16	12.45	11.73	0.72
1994	10.73	10.22	0.51	1.86	1.40	0.46	12.59	11.62	0.97
1995	10.64	10.22	0.42	1.87	1.44	0.43	12.51	11.67	0.85
1996	10.70	10.06	0.65	1.88	1.48	0.40	12.58	11.53	1.05
1997	10.91	9.83	1.08	1.73	1.44	0.29	12.63	11.27	1.37
1998	10.82	9.45	1.37	1.69	1.42	0.27	12.51	10.87	1.64
1999	10.90	9.09	1.80	1.71	1.42	0.29	12.61	10.51	2.09
2000	10.84	8.97	1.87	1.78	1.42	0.36	12.62	10.40	2.23
2001	10.90	9.08	1.82	1.82	1.48	0.35	12.73	10.56	2.17
2002	11.06	9.29	1.76	1.85	1.60	0.24	12.90	10.90	2.01
2003	10.79	9.35	1.44	1.81	1.68	0.12	12.60	11.03	1.56
2004	10.74	9.27	1.46	1.79	1.78	0.02	12.53	11.05	1.48
2005	10.96	9.31	1.65	1.84	1.85	-0.02	12.79	11.16	1.63
2006	10.96	9.18	1.78	1.83	1.88	-0.05	12.79	11.06	1.73
2007	11.03	9.46	1.57	1.84	1.88	-0.04	12.87	11.34	1.53
2008	10.90	9.53	1.37	1.83	2.01	-0.19	12.73	11.55	1.18
2009	11.19	10.70	0.49	1.87	2.30	-0.43	13.07	13.00	0.06
<b>Intermediate:</b>									
2010	10.57	10.74	-0.16	1.76	2.35	-0.60	12.33	13.09	-0.76
2011	11.07	10.68	0.39	1.84	2.36	-0.52	12.91	13.04	-0.12
2012	11.03	10.52	0.52	1.84	2.32	-0.49	12.87	12.84	0.03
2013	11.06	10.54	0.52	1.84	2.28	-0.44	12.90	12.82	0.08
2014	11.08	10.63	0.45	1.84	2.24	-0.39	12.92	12.86	0.06
2015	11.10	10.77	0.33	1.84	2.21	-0.37	12.94	12.98	-0.04
2016	11.12	10.92	0.20	1.84	2.18	-0.34	12.96	13.10	-0.14
2017	11.14	11.14	0.01	1.85	2.17	-0.32	12.99	13.30	-0.32
2018	11.17	11.39	-0.22	1.85	2.16	-0.31	13.01	13.55	-0.53
2019	11.18	11.68	-0.50	1.85	2.15	-0.31	13.03	13.84	-0.81
2020	11.20	11.99	-0.79	1.85	2.16	-0.31	13.05	14.15	-1.10
2025	11.28	13.28	-2.00	1.85	2.25	-0.40	13.13	15.54	-2.40
2030	11.34	14.20	-2.86	1.85	2.20	-0.35	13.19	16.41	-3.21
2035	11.37	14.60	-3.23	1.85	2.13	-0.28	13.22	16.73	-3.50
2040	11.38	14.54	-3.17	1.85	2.10	-0.25	13.23	16.64	-3.41
2045	11.37	14.31	-2.94	1.85	2.13	-0.28	13.23	16.44	-3.22
2050	11.37	14.16	-2.80	1.86	2.17	-0.31	13.23	16.33	-3.11
2055	11.37	14.17	-2.80	1.86	2.20	-0.34	13.23	16.37	-3.14
2060	11.39	14.29	-2.90	1.86	2.19	-0.34	13.24	16.48	-3.24
2065	11.40	14.41	-3.02	1.86	2.20	-0.35	13.25	16.62	-3.36

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	2070	11.41	14.58	-3.17		1.86	2.23	-0.37		13.27	16.81	-3.54
	2075	11.42	14.79	-3.36		1.86	2.24	-0.38		13.28	17.03	-3.75
	2080	11.44	15.00	-3.56		1.86	2.25	-0.39		13.30	17.25	-3.95
	2085	11.45	15.21	-3.76		1.86	2.26	-0.40		13.31	17.47	-4.16
First year balance becomes negative and remains negative through 2085					2018				2005			2015
<b>Low-cost:</b>												
	2010	10.54	10.65	-0.11		1.75	2.30	-0.55		12.29	12.95	-0.66
	2011	11.09	10.54	0.56		1.85	2.26	-0.41		12.94	12.79	0.14
	2012	11.02	10.26	0.76		1.83	2.17	-0.34		12.86	12.44	0.42
	2013	11.05	10.23	0.82		1.84	2.09	-0.25		12.88	12.31	0.57
	2014	11.06	10.23	0.83		1.84	2.01	-0.17		12.90	12.24	0.66
	2015	11.07	10.29	0.78		1.84	1.95	-0.11		12.91	12.24	0.67
	2016	11.09	10.37	0.72		1.84	1.89	-0.05		12.93	12.26	0.67
	2017	11.11	10.53	0.59		1.84	1.85	-0.01		12.95	12.38	0.57
	2018	11.14	10.71	0.42		1.84	1.82	0.02		12.98	12.54	0.44
	2019	11.14	10.93	0.21		1.84	1.80	0.04		12.98	12.73	0.25
	2020	11.16	11.15	b		1.84	1.78	0.06		13.00	12.93	0.06
	2025	11.22	12.06	-0.84		1.84	1.76	0.08		13.06	13.82	-0.76
	2030	11.25	12.62	-1.36		1.84	1.67	0.17		13.09	14.28	-1.19
	2035	11.27	12.70	-1.43		1.84	1.57	0.26		13.10	14.28	-1.17
	2040	11.26	12.40	-1.14		1.84	1.52	0.31		13.09	13.92	-0.83
	2045	11.24	11.95	-0.71		1.84	1.52	0.31		13.08	13.48	-0.40
	2050	11.22	11.62	-0.40		1.84	1.52	0.31		13.06	13.15	-0.09
	2055	11.22	11.42	-0.20		1.84	1.52	0.32		13.06	12.94	0.12
	2060	11.21	11.30	-0.09		1.84	1.50	0.34		13.05	12.80	0.25
	2065	11.21	11.15	0.06		1.84	1.49	0.35		13.05	12.64	0.41
	2070	11.20	11.00	0.20		1.84	1.49	0.35		13.04	12.49	0.55
	2075	11.20	10.88	0.32		1.84	1.50	0.34		13.04	12.38	0.66
	2080	11.19	10.80	0.39		1.84	1.51	0.33		13.03	12.31	0.72
	2085	11.20	10.80	0.40		1.84	1.52	0.32		13.03	12.32	0.72
First year balance becomes negative and remains negative through 2085					c				c			c
<b>High-cost:</b>												
	2010	10.61	10.82	-0.21		1.76	2.41	-0.65		12.37	13.23	-0.85
	2011	11.04	10.78	0.27		1.84	2.45	-0.61		12.88	13.23	-0.35
	2012	11.04	10.68	0.36		1.84	2.46	-0.62		12.88	13.14	-0.26
	2013	11.08	10.91	0.17		1.84	2.48	-0.64		12.92	13.39	-0.47
	2014	11.10	11.13	-0.03		1.85	2.49	-0.64		12.95	13.62	-0.67
	2015	11.12	11.33	-0.21		1.85	2.49	-0.65		12.97	13.83	-0.86
	2016	11.15	11.56	-0.41		1.85	2.49	-0.64		13.00	14.05	-1.05
	2017	11.18	11.86	-0.69		1.85	2.51	-0.65		13.03	14.37	-1.34
	2018	11.21	12.19	-0.99		1.86	2.52	-0.67		13.06	14.71	-1.65
	2019	11.22	12.55	-1.33		1.86	2.54	-0.68		13.08	15.09	-2.01
	2020	11.25	12.94	-1.69		1.86	2.57	-0.71		13.11	15.50	-2.40
	2025	11.35	14.67	-3.32		1.87	2.79	-0.92		13.22	17.47	-4.25

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	2030	11.44	16.05	-4.61		1.87	2.81	-0.94		13.31	18.85	-5.54
	2035	11.50	16.90	-5.40		1.87	2.77	-0.90		13.37	19.67	-6.30
	2040	11.53	17.27	-5.74		1.87	2.76	-0.89		13.40	20.03	-6.62
	2045	11.55	17.42	-5.87		1.87	2.84	-0.97		13.42	20.26	-6.84
	2050	11.57	17.63	-6.06		1.88	2.94	-1.06		13.44	20.57	-7.12
	2055	11.60	18.02	-6.42		1.88	3.02	-1.14		13.48	21.04	-7.57
	2060	11.63	18.56	-6.93		1.88	3.06	-1.18		13.51	21.62	-8.11
	2065	11.67	19.17	-7.50		1.88	3.11	-1.23		13.55	22.28	-8.72
	2070	11.72	19.91	-8.20		1.89	3.17	-1.28		13.60	23.08	-9.48
	2075	11.77	20.78	-9.01		1.89	3.19	-1.30		13.66	23.97	-10.31
	2080	11.82	21.60	-9.78		1.89	3.19	-1.30		13.71	24.79	-11.08
	2085	11.86	22.31	-10.45		1.89	3.17	-1.29		13.75	25.49	-11.74
	First year balance becomes negative and remains negative through 2085			2014				2005				2010

**a** Income rates are modified to include certain transfers from the General Fund of the Treasury.

**b** Between -0.005 and 0.005 percent of taxable payroll.

**c** The annual balance is projected to be negative for a temporary period, returning to positive levels before the end of the projection period.

Notes:

1. The income rate excludes interest income.
2. Some historical values are subject to change due to revisions of taxable payroll.
3. Totals do not necessarily equal the sums of rounded components.

Under the intermediate assumptions, the cost rate for DI, which rose substantially from 2.01 percent of taxable payroll in 2008 to 2.35 percent for 2010 due to the economic recession, generally declines to 2.10 percent for 2039, and increases gradually thereafter to 2.26 percent for 2084. The income rate increases only very slightly from 1.84 percent of taxable payroll for 2011 to 1.86 percent for 2084. The annual deficit is 0.52 percent in 2011 and reaches 0.40 percent for 2084.

Under the low-cost assumptions, the DI cost rate generally declines from 2.30 percent of payroll for 2010 to 1.52 percent for 2084. The annual balance is negative for the first 8 years and is positive throughout the remainder of the long-range period. For the high-cost assumptions, the DI cost rate rises much more, reaching 3.18 percent for 2084. The annual deficit is 0.65 percent in 2010 and reaches 1.29 percent for 2084.

Figure [IV.B1](#) shows the patterns of the OASI and DI annual income rates and cost rates. The income rates shown here are only for alternative II in order to simplify the graphical presentation because, as shown in table [IV.B1](#), the variation in the income rates by alternative is very small. Income rates increase generally, but at a slow rate for each of the alternatives over the long-range period. Both increases in the income rate and variation among the alternatives result primarily from the relatively small component of income from taxation of benefits. Increases in income from taxation of benefits reflect increases in the total amount of benefits paid and the increasing share of individual benefits that will be subject to taxation because benefit taxation threshold amounts are not indexed.

The patterns of the annual balances for OASI and DI can be inferred from figure [IV.B1](#). For each alternative, the magnitude of each of the positive balances, as a percentage of taxable payroll, is represented by the distance between the appropriate cost-rate curve and the income-rate curve above it. The magnitude of each of the deficits is represented by the distance between the appropriate cost-rate curve and the income-rate curve below it.

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In the future, the cost of OASI, DI, and the combined OASDI programs as a percentage of taxable payroll will not necessarily be within the range encompassed by alternatives I and III. Nonetheless, because alternatives I and III define a reasonably wide range of demographic and economic conditions, the resulting estimates delineate a reasonable range for consideration of potential future program costs.

**Table VI.C4.—Operations of the OASI Trust Fund, Fiscal Years 2005-19**

at <[http://www.ssa.gov/OACT/TR/2010/VI\\_SRFyproj.html#250391](http://www.ssa.gov/OACT/TR/2010/VI_SRFyproj.html#250391)>

[Dollar amounts in billions]

Fiscal year	Income				Cost				Assets		
	Total [FN <sub>a</sub> ]	Net contributions	Taxation of benefits	Net interest	Total	Benefit payments	Administrative costs	RRB interchange	Net increase during year	Amount at end of year	Trust fund ratio [FN <sub>b</sub> ]
Historical data:											
2005	\$600.0	\$503.0	\$15.3	\$81.7	\$436.9	\$430.4	\$2.9	\$3.6	\$163.1	\$1,615.6	332
2006	632.2	530.0	15.2	87.3	455.6	449.2	2.9	3.5	176.6	1,792.2	355
2007	663.4	553.4	16.7	93.3	488.6	481.8	3.2	3.6	174.8	1,967.0	367
2008	692.9	573.8	16.4	102.7	509.9	503.0	3.3	3.6	183.0	2,150.1	386
2009	697.3	571.2	19.0	107.1	551.5	544.5	3.4	3.7	145.8	2,295.8	390
Intermediate:											
2010	684.6	553.5	22.4	108.6	580.7	573.1	3.7	3.9	103.9	2,399.7	395
2011	729.4	594.8	24.7	110.0	602.1	594.3	3.9	3.9	127.3	2,527.0	399
2012	774.8	631.9	27.2	115.7	630.3	622.3	4.0	4.0	144.5	2,671.5	401
2013	829.7	673.5	30.6	125.5	669.6	661.4	4.2	4.0	160.1	2,831.6	399
2014	885.0	714.0	34.0	137.0	716.0	707.6	4.3	4.1	168.9	3,000.5	395
2015	940.7	753.6	37.3	149.8	766.9	758.2	4.4	4.3	173.8	3,174.3	391
2016	1,005.6	803.4	40.9	161.3	821.9	813.0	4.5	4.4	183.7	3,358.0	386
2017	1,061.1	842.4	44.8	173.9	881.6	872.2	4.7	4.7	179.5	3,537.6	381
2018	1,120.7	884.5	48.6	187.7	945.5	935.8	4.8	4.9	175.2	3,712.8	374
2019	1,176.5	925.1	52.3	199.1	1,014.3	1,004.1	5.0	5.1	162.3	3,875.0	366
Low-cost:											
2010	685.7	554.7	22.4	108.6	580.6	572.9	3.7	3.9	105.2	2,401.0	395
2011	738.9	603.5	24.7	110.8	601.7	593.8	3.9	3.9	137.3	2,538.3	399
2012	784.5	640.9	27.0	116.7	625.8	617.8	4.0	4.0	158.8	2,697.1	406
2013	839.0	683.2	30.1	125.7	659.7	651.6	4.1	3.9	179.3	2,876.4	409
2014	893.1	722.6	33.2	137.3	699.2	690.9	4.2	4.0	193.9	3,070.4	411
2015	945.9	761.1	36.1	148.7	741.3	732.9	4.3	4.1	204.6	3,274.9	414
2016	1,008.6	808.6	39.2	160.8	786.4	777.8	4.4	4.1	222.2	3,497.2	416
2017	1,059.2	843.3	42.5	173.4	835.1	826.1	4.6	4.4	224.1	3,721.3	419
2018	1,114.9	881.3	45.5	188.1	886.9	877.7	4.7	4.6	228.0	3,949.3	420
2019	1,167.9	917.5	48.6	201.8	942.3	932.8	4.8	4.7	225.6	4,175.0	419

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High-cost:

2010	683.5	552.5	22.4	108.5	580.9	573.2	3.7	3.9	102.6	2,398.5	395
2011	722.2	588.0	24.8	109.5	602.6	594.8	3.9	3.9	119.5	2,518.0	398
2012	773.0	629.1	27.4	116.6	636.0	628.0	4.0	4.0	137.1	2,655.0	396
2013	835.4	672.6	31.5	131.3	688.8	680.5	4.2	4.1	146.6	2,801.6	385
2014	895.8	715.9	35.6	144.3	749.7	741.1	4.4	4.3	146.1	2,947.7	374
2015	954.5	759.4	39.6	155.5	812.7	803.6	4.5	4.6	141.8	3,089.5	363
2016	1,024.5	814.1	43.9	166.6	880.2	870.8	4.7	4.7	144.3	3,233.8	351
2017	1,082.8	856.9	48.5	177.4	953.9	943.8	4.9	5.2	128.9	3,362.7	339
2018	1,144.7	903.6	53.1	188.0	1,033.4	1,022.9	5.1	5.5	111.3	3,474.0	325
2019	1,205.3	951.4	57.8	196.1	1,119.5	1,108.5	5.3	5.8	85.7	3,559.7	310

[FNa] “Total Income” column includes transfers made between the OASI Trust Fund and the General Fund of the Treasury that are not included in the separate components of income shown. These transfers consist of payments for (1) the cost of noncontributory wage credits for military service before 1957 and (2) the cost of benefits to certain uninsured persons who attained age 72 before 1968. In December 2005, \$350 million was transferred from the OASI Trust Fund to the General Fund of the Treasury for the cost of pre-1957 military service wage credits, and a similar transfer of \$90 million is projected to occur in December 2010. After December 2010 such transfers are estimated to be less than \$500,000 in each year.

[FNb] The “Trust fund ratio” column represents assets at the beginning of a year (which are identical to assets at the end of the prior year shown in the “Amount at end of year” column) as a percentage of cost for the year.

Note: Totals do not necessarily equal the sums of rounded components.

To be added.