

Have the Social Security Trustees Been Too Conservative?

by

Charles P. Blahous III
National Economic Council

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ABSTRACT

The annual projections of the Social Security and Medicare Trustees are appropriately subject to external scrutiny. Such scrutiny sometimes produces suggestions that the Trustees are too conservative in their projections, particularly with respect to economic growth. A “soft” version of this thesis is that the Trustees’ projections for the future are too conservative, while a “hard” version makes a factual case that they have been too conservative in the past.

To determine the accuracy of the latter criticism, the projections in the reports of the Social Security and Medicare Trustees from 1983-2004 are reviewed and compared with the actual state of the system in 2005. The accuracy of the previous projections is evaluated with respect to two variables: annual cash operations as reached by 2005, and the Trust Fund balance accumulated through that date.

The data contradict the “hard thesis” of excess conservatism in the Trustees’ past Intermediate projections. In predicting the accumulated value of Trust Fund surpluses, the Trustees’ Intermediate projections have generally been the most accurate. In predicting the state of annual cash operations by 2005, the path of greatest accuracy lay generally between the Trustees’ Intermediate and High-Cost scenarios. The High-Cost scenarios were the most accurate in the highest number of reports, while the Intermediate scenarios exhibited the smallest total errors by a wide margin. Generally, the Low-Cost projections from 1983-2004 have been the least accurate with respect to both measures in combination. Some previous Trustees’ reports have indeed erred on the side of excess conservatism, but these are a minority of the total number of reports, and employed some assumptions no longer in use. Application of several alternative tests only reinforces the finding that the Trustees’ Intermediate projections have been the most accurate by far in predicting Social Security’s future financial condition.

Economic assumptions, except over short periods, have not been the leading source of imprecision in the projections to date, which has instead arisen more from such factors as disability incidence and methodological issues.¹ Data publicly available in the Trustees' reports demonstrate that deviations from currently projected economic growth are unlikely to have a qualitative impact on Social Security's future imbalance. Among the reasons for this are the qualitative reasonableness of the components of the Trustees' economic projections, as well as the limited potential impact of future economic growth upon Social Security's structural imbalance, which arises primarily from an imbalance in the treatment of participants already in the system (the so-called "legacy debt").

Experts can and should debate the likely accuracy of the Trustees' current projections, but this debate should recognize the factors that bear upon that accuracy. To argue that the Trustees' future revenue projections are too conservative, one must argue either that the Trustees' labor force projections are inaccurate, or that future real wage growth will significantly exceed recent historical norms, or both. Such an argument must also recognize the limited effect of economic projections on the structural Social Security deficit. Most importantly, however, the argument cannot be predicated on the Trustees' supposed excess conservatism to date, a characterization that is contravened by the historical record.

The American public is not well served by the myth that the perceived Social Security shortfall arises only from projections that in the past have proved too conservative. This myth both mischaracterizes the Trustees' overall track record to date, as well as the factors that can significantly affect the fiscal picture going forward.

¹ Demographic assumptions are also important, though they tend more to affect predictions over the longer-term, and have also tended not to contribute to the net optimism of the past Trustees' reports.

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Introduction

The 2007 report of the Social Security and Medicare Trustees projects that the cost of Social Security benefit payments will rise dramatically after the first Baby Boomers hit the retirement rolls in 2008. The Trustees further project that in just ten years - by 2017 – the cost of paying benefits will exceed the program’s annual incoming tax revenue, and that by 2033, annual costs will have risen to exceed 17% of national taxable wages (up from roughly 11% today).² As a whole, the Trustees’ projections paint a grim picture of a Social Security system on a fiscally unsustainable trajectory.

The 2007 projections are similar to those that the Trustees have published for several years. Each year, the Trustees’ report prompts calls for legislative action to correct the Social Security imbalance. One such call appears annually in the Trustees’ report itself: (From the 2007 report: *“Social Security’s current annual surpluses of tax income over expenditures will soon begin to decline and then turn into rapidly growing deficits as the baby boom generation retires. . . The sooner these challenges are addressed, the more varied and less disruptive their solutions can be. We urge the public to engage in informed discussion and policymakers to think creatively about the changing needs and preferences of working and retired Americans. Such a national conversation and timely political action are essential to ensure that Social Security and Medicare continue to play a critical role in the lives of all Americans.”*)³

The annual release of the Trustees’ report is also an occasion for recurring criticism of the Trustees’ projections themselves. While it is unsurprising – and unobjectionable – that the Trustees’ projections should be subject to external scrutiny and criticism, it’s notable that the

² <http://www.ssa.gov/OACT/TR/TR07/lr4B1.html>

³ <http://www.ssa.gov/OACT/TRSUM/trsummary.html>

vast majority of this criticism comes from a consistent perspective: that is, that the Trustees are being unduly pessimistic, and that the future Social Security shortfall may be much smaller than now projected (or indeed may vanish altogether). By comparison, suggestions that the Trustees may be understating the likely shortfall appear to be comparatively rare in public discourse. Though there is no reliable way to precisely account for the totality of all such commentary, a cursory (and admittedly far from rigorous) *LexisNexis* search finds that assertions of the Trustees' pessimism are about 9-10 times more common than assertions that they are being too optimistic. Conservatively estimating, it's likely that there are at least five commentators asserting that the Trustees are too pessimistic for every one that declares them to be too optimistic about Social Security's future finances. Criticism of the Trustees' projections thus does not arise uniformly from all directions, but is reflective of a fairly pervasive belief, at least among those who comment on such matters, that the future Social Security problem may be significantly smaller than that now projected.

Much of such commentary originates, understandably, from opponents of significant changes to Social Security, because such changes might be deemed less necessary if the measured shortfall is less. For example, the left-leaning *Century Foundation* cites economist Robert Gordon to argue its own view that "even the Low Cost forecasts of the Social Security trustees are far too pessimistic. If he is right, our problem in twenty years will be how much to cut payroll taxes dedicated to Social Security, not how much to raise them."⁴ A 2004 *Slate* magazine article cites Gordon to similar effect.⁵ Another *Century Foundation* web publication refers to the Trustees' Intermediate projections of insolvency as "worst-case scenarios."⁶ Occasional *Newsday* articles have argued that Social Security reform may be unnecessary given

⁴ http://www.tcf.org/Publications/RetirementSecurity/socsec_rc.pdf

⁵ Daniel Gross, March 9, 2004, "*The Social Security Crisis – Solved!*", <http://www.slate.com/id/2096880/>

that the Trustees' report "deliberately uses the most conservative or pessimistic assumptions."⁷

In any given week, *Google: News* is likely to reveal a smattering of bloggers contending that the Trustees' unnecessarily bleak forecasts are fueling an exaggerated fear of Social Security insolvency.

This argument, however, has not been confined to policy advocates. Press reports about Social Security's finances frequently echo the charge of overly-pessimistic forecasts. A May 2006 *Christian Science Monitor* article carries the headline that projected Social Security shortfalls are "suspect" and cites David Langer to the effect that the Trustees' projections paint a picture that is "more dire than it is."⁸ In an April 2007 online discussion, a *Washington Post* reporter stated that the Trustees' projections are "remarkably pessimistic" and that the "situation is not nearly as dire as they say."⁹ Congressional legislators, too, sometimes express a similar view. One U.S. Senator stated in October 2005, "I do not believe this \$4 trillion of shortfall in Social Security. I think that is a very bad estimate. I think the shortfall in Social Security is much less. Why? . . . If the economy grows in the future as it has in the past, 80 percent of the Social Security projected shortfall would disappear."¹⁰

The claim that the Social Security Trustees are being unduly pessimistic about the future can be considered the "soft thesis" version of this line of argument. A "hard thesis" also in circulation takes a significant further step: it argues that the Trustees' current Intermediate projections for the future are suspect in part because their *past* projections have proved too dire.

⁶ <http://www.socsec.org/feature.asp?menuid=%7B613B9622-2EB5-4A8D-B174-71B1E342E9DE%7D>

⁷ Saul Friedman, *Newsday*, "Emboldening Social Security", May 12, 2007, <http://www.newsday.com/business/custom/retirement/ny-bzsaul5206856may12,0,2595239.column?coll=ny-retirement-headlines>

⁸ <http://www.csmonitor.com/2006/0508/p17s01-cogn.html>

⁹ Jonathan Weisman, *Post Politics Hour*, April 27, 2007, http://www.washingtonpost.com/wp-dyn/content/discussion/2007/04/23/DI2007042301225_pf.html

¹⁰ Floor statement by U.S. Senator Kent Conrad (D-ND), http://budget.senate.gov/democratic/statements/2005/fs_reconciliationfloorstmt102005.pdf

This “hard thesis” is not, like the soft thesis, primarily an argument about the unknowable future, but about the accuracy of the Trustees’ projections *to date*. Unlike the argument concerning the future, this version can already be tested against the evidence.

Among the examples of the hard thesis of Trustee pessimism is another *Christian Science Monitor* article, wherein Langer is again cited to the effect that the Trustees’ Low-Cost estimates have generally proved more accurate, thus far, than their Intermediate estimates. The *CSM* article treats this greater inaccuracy of the Intermediate estimates as a fact, even when citing an expert who prefers them: “Richard Kogan agrees Social Security doesn't face a crisis. . . . he suspects growing income inequality in the United States, stimulating payroll tax revenues, may account for the greater accuracy of the optimistic (“Low-Cost”) 75-year projection. Nonetheless, Mr. Kogan prefers the intermediate projection. . . .”¹¹ A similar claim is made in a March 2005 *Century Foundation* piece, stating that “The Trustees’ predictions have been consistently too pessimistic.”¹² Robert Kuttner, in the *Boston Globe*, wrote in December 2004, “. . . (A) careful look at the numbers suggests that the financial crisis is largely a myth. For years, the Social Security Trustees have used very conservative assumptions . . . Five years ago, in the late 1990s, they estimated the long-term economic growth rate at just 1.7 percent. The reality has been well over 3 percent.” Legislators have joined in disputing not only the accuracy of future projections, but have also alleged inaccurate pessimism in the past: “They have been wrong. They have been wrong because they have consistently underestimated economic growth. I believe, in all likelihood, they are wrong again.”¹³ One of the most common themes of this argument is that

¹¹ <http://www.csmonitor.com/2007/0226/p17s01-cogn.html>

¹² Wasow, Bernard, “*The Social Security ‘Crisis’ – Still a Molehill*”, <http://www.socsec.org/commentary.asp?opedid=942>

¹³ Transcript of remarks by Senator Kent Conrad (D-ND), Senate Finance Committee Hearing, April 26, 2005, http://www.senate.gov/~budget/democratic/statements/2005/hrngstmt_socsecfinankc042605.pdf

the Trustees' prior Intermediate projections have overestimated Social Security shortfalls because of excess conservatism in their economic projections.

Though this argument is widespread, a few have argued the opposite case: that the Trustees have instead leaned towards optimism. At a 2003 hearing of the Senate Aging Committee, GAO Comptroller General David Walker (and former Social Security Trustee) observed that, "historically they've (the Trustees) been a little bit optimistic."¹⁴ Andrew Biggs, now Deputy Commissioner of the Social Security Administration, asserted in a 1999 letter to the Albany Times Union that a recent Technical Panel had concluded that the Trustees' assumptions were, "if anything, optimistic."¹⁵

Indeed, the technical panels that have examined the Social Security Trustees' assumptions are conspicuously absent from the roster of those who declare the Trustees to be too pessimistic. The 2003 Technical Panel on Assumptions and Methods of the Social Security Advisory Board recommended only slight changes to the Trustees' projections, changes that would slightly increase the estimated 75-year deficit in dollar terms, though slightly decrease it as a percentage of taxable payroll.¹⁶ The analogous 1999 Technical Panel actually reached a conclusion diametrically opposite the trend of popular argument, finding that the Trustees' assumptions likely *understated* the Social Security shortfall.¹⁷ Moreover, there is the annually expressed view of the Social Security Chief Actuary, that the "assumptions used and the resulting actuarial estimates are, individually and in the aggregate, reasonable for the purpose of

¹⁴ Federal News Service, January 15, 2003 Wednesday, HEARING OF THE SENATE SELECT COMMITTEE ON AGING

¹⁵ The Times Union (Albany, NY), July 25, 2000

¹⁶ http://www.ssab.gov/documents/2003TechnicalPanelRept_000.pdf, p.10

¹⁷ <http://www.ssab.gov/Publications/Financing/tech99.pdf>, p.8. The Tech Panel based this finding largely on a view that the Trustees were underprojecting future gains in life expectancy.

evaluating the financial and actuarial status of the trust funds, taking into consideration the past experience and future expectations for the population, the economy, and the program.”¹⁸

Who is right? Certainly the argument regarding Social Security’s future finances is beyond our capacity to conclusively resolve today: only future events can do so, though we can (and will) examine the Trustees’ future projections in greater detail. The hard thesis, however - that the Trustees are likely too pessimistic about the future because as have been too pessimistic in the past - can be weighed against the evidence. Is it the case that the Trustees’ have historically tended toward an inaccurately pessimistic view of Social Security finances?

The Historical Accuracy of the Social Security Trustees’ Estimates

In 1983 there occurred the last major legislative amendments that significantly altered the fiscal course of Social Security. Following upon the recommendations of the bipartisan Greenspan Commission, Congress passed and President Ronald Reagan signed legislation intended to ensure both the program’s short-term and long-term (75-year) solvency.

1983 is an appropriate starting point for grading the Trustees’ projection record, for a number of reasons. First, because it was the year of the last legislation to significantly alter Social Security’s fiscal course, which each subsequent Trustees’ report has sought to project. Projections prior to 1983 could not meaningfully anticipate the particulars of the 1983 reforms. A study must also span enough years to evaluate the Trustees’ projections over a number of economic cycles. And, though a number of post-1983 laws may have indirectly affected Social Security finances, commenters have held the Trustees’ projections to a standard of accuracy

¹⁸ <http://www.ssa.gov/OACT/TR/TR07/trActOpn.html>

irrespective of such tangential effects. For all of these reasons, the Trustees' reports from 1983 onward represent the relevant record for the purposes of this study.

Since the 1983 reforms, the Trustees have presented multiple projections for Social Security's future. From 1991 through the present, these have included Scenarios I, II and III, respectively the "Low-Cost," "Intermediate," and "High-Cost" scenarios.¹⁹ The Intermediate scenario is regarded by the Trustees as their best estimate and thus receives the most attention from policy makers and the press.

From 1983-1990, the Trustees presented four projection scenarios: I, II-A, II-B and III.²¹ Scenario II-B from the 1983-1990 reports evolved into Scenario II in the reports that followed from 1991 to the present.²² The Greenspan Commission relied principally upon Scenario II-B for its long-range projections, but consulted both Scenarios II-B and III for the short-term picture.²³ The effects of individual provisions on Social Security's annual cash flows were examined under both scenarios II-B and III for the 1983-89 period but not beyond, after which the Commission used scenario II-B to project aggregate actuarial balances, but not annual cash flows.²⁴ The Greenspan Commission also consulted scenario III for the short-term picture to

¹⁹ <http://www.ssa.gov/history/reports/trust/1991/1991.pdf>

²¹ <http://www.ssa.gov/history/reports/trust/1990/1990.pdf>. Scenarios II-A and II-B used the same demographic assumptions but differed in their economic assumptions. See <http://www.ssa.gov/history/reports/trust/1983/1983.pdf>, p. 3, and pp. 99-101. Scenario II-A assumed 2.0% real wage growth and 3% inflation over the long term, Scenario II-B 1.5% real wage growth and 4% inflation.

²² <http://www.ssa.gov/history/reports/trust/1991/1991.pdf>, p.1. "In previous reports, when there were two intermediate sets of assumptions, such tests were based on the alternative II-B assumptions. Comparisons of intermediate estimates in the 1991 report with corresponding estimates in the 1990 report are also based on the alternative II-B estimates in the 1990 report."

²³ <http://www.ssa.gov/history/reports/gspan18.html>, <http://www.ssa.gov/history/reports/18intro.html>

²⁴ A widespread misperception of the 1983 reforms is that there was a deliberate intention to build up a large Trust Fund balance via large near-term surpluses to "advance fund" retirement benefits, redeeming the Fund's assets with general revenues after the onset of annual programmatic cash deficits. In reality, both the Greenspan Commission and the congressional committees that considered the legislation examined the long-term effects of reform provisions almost solely in terms of their *average* effect upon the 75-year balance, generally without attention to the potential implications of following several years of annual surpluses with large annual deficits. Moreover, the present method of calculating Social Security's actuarial imbalance, the "level financing" method (in which future Social Security deficits are discounted by the presumed rate of interest earned by the Social Security Trust Fund), was not adopted by the Trustees until 1988, well after the 1983 reforms, and thus could not have been the foundation

ensure that, should events take a near-term turn for the worse, the system's immediate solvency would not be imperiled.

Beginning with the 2003 report, the Trustees have also included a stochastic analysis that calculates the relative probability of various outcomes, and finds both the "Low-Cost" and "High-Cost" scenarios to be extremely improbable (neither falling within the 95% confidence range), relative to the Intermediate projections.²⁵

The Trustees, then, have generally produced three sets of projections: I (Low-Cost), II (Intermediate), and III (High-Cost), with II split into II-A and II-B in the 1983-90 reports. To determine which have generally been the most accurate, we will compare the projections in each of the 1983-2004 reports to the actual data of 2005. 2005 is selected because it is the most recent year available that is a multiple of five (many of the older reports' projection details are provided only at intervals of five years, rather than annually as in more recent reports).

The accuracy of the projections for 2005 will be evaluated with respect to two variables: the program's annual operations (its annual cash balance) in year 2005, and the assets held by the Social Security Trust Fund in the same year (a proxy for the cumulative program surpluses through that date, plus interest). The cash-flow balance will be given as a percentage of taxable wages,²⁶ and the Trust Fund balance as a percentage of annual benefit obligations, a figure known as the Trust Fund ratio.²⁷ This standard practice is used because these variables are

of a 1983 actuarial solution predicated upon a large Trust Fund buildup. The Greenspan Commission instead relied upon the Trustees' 1982-83 actuarial method, known as the "average cost" method, in which future shortfalls were implicitly discounted by total wage growth rather than the projected accumulation rate of Trust Fund assets. For more information, see the 1988 Trustees' report, <http://www.ssa.gov/history/reports/trust/1988/1988c.pdf>, p.86, the Congressional Research Service in http://digital.library.unt.edu/govdocs/crs/data/1997/upl-meta-crs-484/97-741epw_1997Jul24.pdf?PHPSESSID=6add3c67ba8cbfd3c6607ed85a3b3d15 as well as an interview with Greenspan Commission Director, Robert Myers, available online at <http://www.ssa.gov/history/myersorl.html>.

²⁵ http://www.ssa.gov/OACT/TR/TR03/VI_stochastic.html#wp102692,
http://www.ssa.gov/OACT/TR/TR07/VI_stochastic.html#wp102692

²⁶ <http://www.ssa.gov/OACT/TR/TR07/lr4B1.html>

²⁷ <http://www.ssa.gov/OACT/TR/TR07/lr4B3.html>

mainly relevant to Social Security's operations only relative to the tax base or to benefit obligations, respectively. This also limits distortions arising from such factors as the growing size of the U.S. economy. Both methods of presentation are those employed in the Social Security Trustees' report.

These two metrics are useful to reflect two important views of Social Security finances. A number of analysts, noting various shortcomings of the aggregate 75-year actuarial balance metric, have urged greater emphasis on the program's annual cash flows.³⁰ But a focus on cash flow in 2005 alone does not capture the cumulative size of Social Security surpluses through that date, another useful factor by which previous projections can be graded. To capture this, we include the second metric of the 2005 Trust Fund ratio.

In sum, this study asks two questions:

- 1) How accurately did previous Trustees' projections predict the balance of Social Security income and outflow in 2005?
- 2) How accurately did previous Trustees' projections predict the Social Security Trust Fund balance in 2005, expressed as an equivalent number of years of Social Security benefit payments?

The 2005 data to which previous Trustees' reports will be compared are as follows. In 2005, the annual Social Security cash surplus was 1.55% of taxable wages,³¹ and the Trust Fund ratio³² was 318. The conventional depiction of the ratio as being "318" could just as easily be

³⁰ <http://www.ssab.gov/Publications/Financing/tech99.pdf>, p.17, <http://www.gao.gov/new.items/d07389t.pdf>, p.3

³¹ <http://www.ssa.gov/OACT/TR/TR07/lr4B1.html>

³² The frequent argument of interpretation as to whether the Trust Fund is truly an asset or a debt, and to whom, need not enter into this analysis, the objective of which is only to measure the accuracy of previous predictions as to its size.

written as 3.18 or as 318%. It means that the 2005 Trust Fund balance was deemed equal to 3.18 years of benefit payments.³³

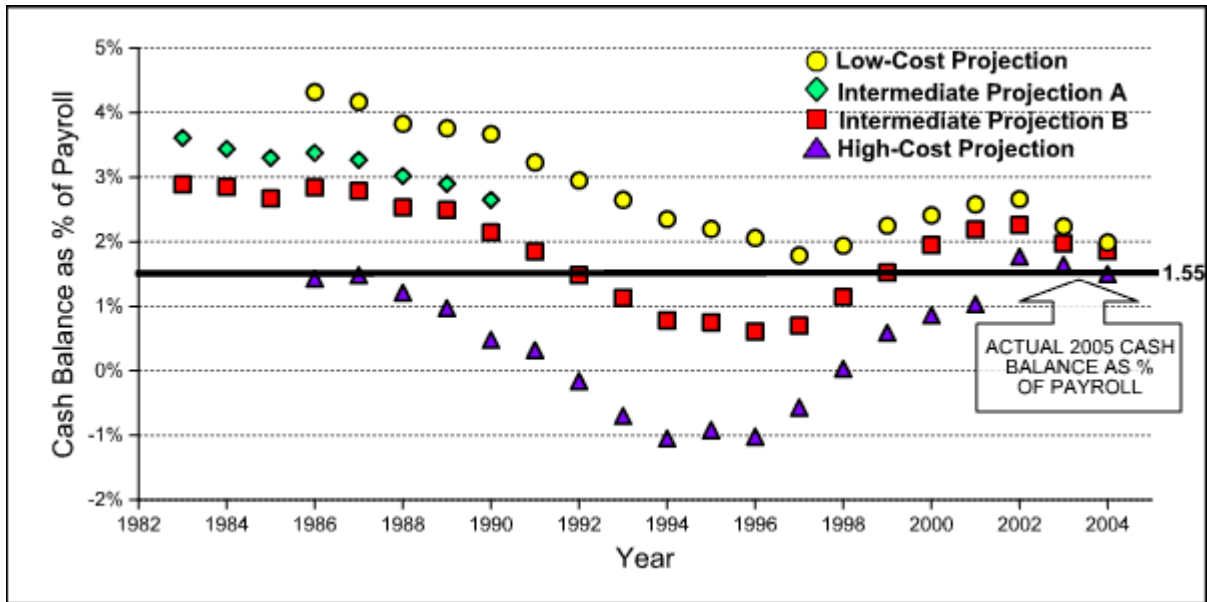
Figure 1 shows the range of previous Trustees' projections for the 2005 cash balance, from each of the 1983-2004 reports, in comparison with the eventual actual 2005 cash surplus of 1.55% of taxable payroll. As would be expected, the precision of the projections improves as the 2005 date is approached; the range of potential 2005 outcomes being much wider in the 1983 report than in the 2004 report.

Figure 1 also shows that the Trustees' Low-Cost projections have in fact been the *least* accurate, during the 1983-2004 period, in predicting Social Security's 2005 annual operations. In only four out of the twenty-two Trustees' reports (1995-1998) were the Low-Cost projections the most accurate. In seven reports (1990-94 and 1999-2000), the Intermediate scenarios were the most accurate. The Trustees did not publish projected annual cash balances for Scenarios I and III in the 1983-85 reports, but it can be reasonably inferred that the High-Cost projections would have been the most accurate in each of those years (Intermediate Scenario II-B was significantly less accurate in 1983-85 than it was even in 1988-89, and Scenario III was more accurate in those years).³⁴ Thus, the "High-Cost" (Scenario III) projections were explicitly the most accurate in eight reports (1986-89 and 2001-04), and it is further apparent that they were the most accurate in eleven reports (including the 1983-85 reports in which Scenario III cash flows were not presented).

³³ <http://www.ssa.gov/OACT/TR/TR07/lr4B3.html>

³⁴ Moreover, to be less accurate than Intermediate Scenario II-B, 1985's Scenario III would need to predict an annual 2005 cash balance of less than 0.43% of payroll, which is unfeasible given that the similar scenario in the 1986 report predicted a cash balance of 1.43%. The 1984 and 1983 Scenario III projections would need to be even further off. Given that the economic and demographic assumptions for Scenario III in the 1985 and 1986 reports were essentially similar, there seems little basis for such a conjecture. See

Figure 1: 1983-2004 Trustees' Projections vs. Actual 2005 OASDI Cash Balance



Thus, somewhere between the Intermediate and High-Cost scenarios in the Trustees' reports of 1983-2004 was the most generally accurate picture of the program's situation as reached by 2005. The Intermediate scenarios had the smallest net errors, while the High-Cost scenarios were the most accurate the largest number of times. This result is summarized in Table 1.

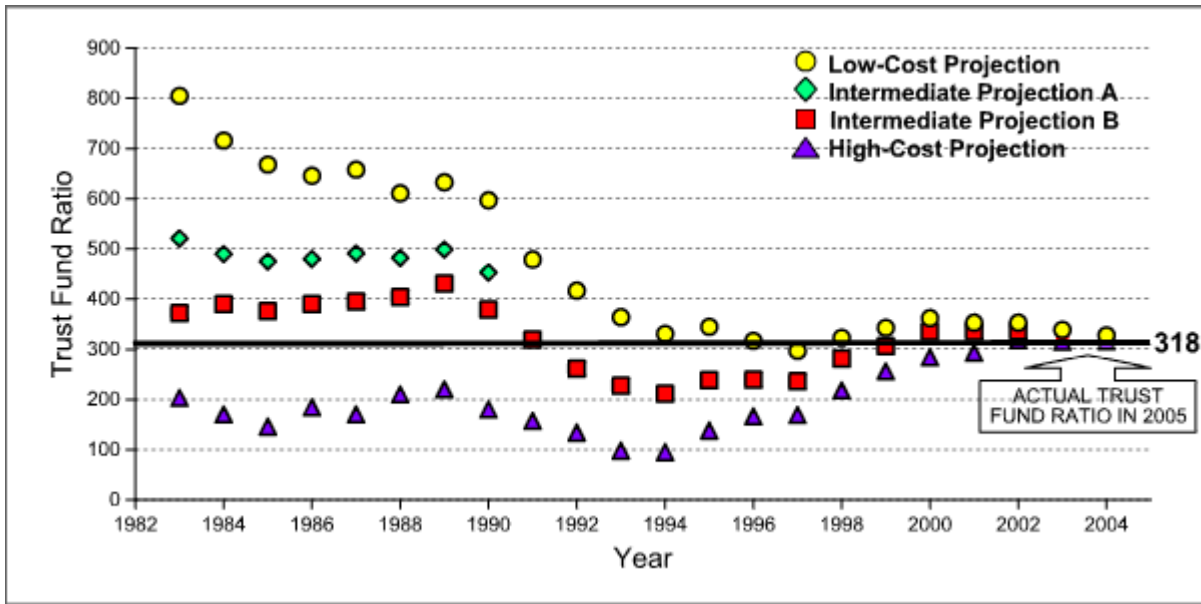
Figure 2 presents similar results for the 1983-2004 predictions of the 2005 Trust Fund Ratio. Again, as with the previous chart, it is generally true that the closer the date of the report to 2005, the more closely the range of projections converges upon accuracy.

<http://www.ssa.gov/history/reports/trust/1986/1985a.pdf> and
<http://www.ssa.gov/history/reports/trust/1986/1986a.pdf>.

**Table 1: Accuracy of 1983-2004 Trustees' Report Projections
2005 OASDI Cash-Flow Balance (As a % of Taxable Payroll)**

Scenarios	Times Most Accurate Projection
I (Low-Cost) Scenarios	4
II, II-A and II-B (Intermediate) Scenarios	7
III (High-Cost) Scenarios	11

Figure 2: 1983-2004 Trustees' Projections vs. Actual 2005 OASDI Trust Fund Ratio



The Trustees' Intermediate projections have clearly been generally the most accurate for predicting the 2005 Trust Fund ratio. They provided the most accurate projections in twelve of the twenty-two reports (1983-88, 1990-92, and 2000-01), and exhibited by far the smallest cumulative error. The Low-Cost projections were most accurate on six occasions (1993-98) and the High-Cost on four (1989 and 2003-05). These results are summarized in Table 2.

**Table 2: Accuracy of 1983-2004 Trustees' Report Projections
2005 Trust Fund Ratio**

Scenarios	Times Most Accurate Projection
I (Low-Cost) Scenarios	6
II, II-A and II-B (Intermediate) Scenarios	12
III (High-Cost) Scenarios	4

A reasonable summary of the 1983-2004 projections' accuracy is that *the Trustees' Intermediate projections most accurately predicted the cumulative value of the Social Security surpluses over the totality of the 1983-2004 period. With respect to predicting the balance of annual system operations in 2005, the High-Cost projections were the most accurate in the highest number of reports, although the Intermediate projections exhibited the lowest total error. On balance, by both standards taken together, the Intermediate projections have been the most accurate, and the Low-Cost projections have been the least.* Though this does not necessarily mean that the superiority to date of the Intermediate projections is significant for the future, the data clearly contradict the widespread misconception that the Low-Cost projections have in the past been best.

The question will arise as to whether this result is driven by the choice of test and the choice of the target projection year. Subjecting the data to multiple tests, however, only serves to reinforce the conclusion that the Intermediate projections have been the most accurate. If the counting test is applied instead to the number of times each projection scenario was *least* accurate, the Low-Cost scenarios come up as worst in 14 of the 22 reports. If graded by the smallest total squared errors, the Intermediate scenarios in the 1983-2004 reports performed

better than the Low-Cost or High-Cost estimates by roughly a factor of four. If the squared errors are weighted via discounting by temporal distance from 2005, the finding persists that the Intermediate projections were the most accurate – again by a factor of roughly four.³⁷

Moreover, had this study been performed immediately after 1995, the Intermediate projections would then have been found most accurate in predicting the Trust Fund ratio, whether by the counting or total-error methods. The High-Cost projections would have been found most accurate in having predicted the then-current annual cash-flow balance, again whether using the counting or total-error methods. By any measure, the Low-Cost projections were far and away the *least* accurate through 1995.

Even through 2000, a year in which the Low-Cost projections might have been expected to look best (having followed several years of especially conservative Trustees' Reports and exceptionally strong real wage growth), the 1983-1999 Intermediate projections still outperformed the Low-Cost projections, both with respect to the 2000 cash balance and the 2000 Trust Fund ratio, and whether using either the counting or the total-error method.³⁸

The belief that the Trustees have historically been pessimistic, that they have previously understated Social Security's fiscal health relative to subsequent events (and, as some even say, that the Low-Cost projections have been best), is an error that has developed in contravention of the historical evidence. This naturally raises the question as to why this myth is so pervasive,

³⁷ Thanks to Andrew Biggs for suggesting and performing these calculations.

³⁸ The Low-Cost projections in the 1983-89 reports did comparatively better in projecting the 1990 Trust Fund ratio than the 2000 Trust Fund ratio, relative to other projection scenarios. This was the case even though the 1983-89 Intermediate II-B scenarios best predicted 1990's annual cash flows. There was a surge of real wage growth in 1983-86, resulting in a higher Trust Fund ratio for 1990 than projected in the earliest Intermediate estimates. However, although the 1980s Trustees' Intermediate projections were too conservative in predicting the Trust Fund ratio for 1990, those same reports were nevertheless too optimistic in predicting the Trust Fund ratios in 1995, 2000 and 2005.

given the ready public and press access³⁹ to the annual Trustees' Reports that demonstrate the opposite conclusion.

Part of the explanation may simply be that the narrative of overly-pessimistic Trustees' reports supports a comforting belief: that further delay in addressing Social Security's shortfalls need not have the adverse consequences predicted by the Trustees, the General Accounting Office and others. But part, too, may derive from a basis in selective truth, for some previous Trustees' reports (specifically the 1995-98 reports) did err on the side of pessimism.

Three aspects of these most conservative 1995-98 reports, however, are worth noting. One is that they are clearly the exception rather than the rule: a small and unrepresentative sample of the larger pool of Trustees' estimates. A second is that the Trustees have since revised many of the assumptions used in the 1995-98 reports, notably for such oft-cited variables as productivity and real wage growth. Third, the apparent conservatism of the 1995-98 reports was not unique to the Trustees. A surge in real wage growth in the late 1990s produced a "revenue surprise" that also caught other government forecasters off-guard. Finally, the expertise, independence and integrity of the Trustees and the SSA Office of the Actuary are widely respected by those most familiar with the process. Occasionally, however, some have insinuated that the Trustees' assumptions are in some way influenced by the policy preferences of the contemporary White House.⁴⁰ The fact that the Social Security Trustees' long-range assumptions were actually more pessimistic during the prior Administration than during the current one is incompatible with this groundless allegation. Taken together, these facts eliminate any justification for citing the outlying few pessimistic Trustees' reports of 1995-98, as reflecting

³⁹ <http://www.ssa.gov/OACT/TR/index.html>

⁴⁰ <http://www.csmonitor.com/2006/0508/p17s01-cogn.htm>

unflatteringly either upon particular policy perspectives or upon the accuracy of the Trustees' current projections.

Sources of Imprecision in Past Trustees' Reports

Some appreciation of the sources of imprecision in previous Trustees' reports can be gleaned by studying the two reports at the furthest extremes: the 1983 report, which was the most optimistic relative to subsequent events, and the 1996 report, which was the most pessimistic. We will turn to the 1983 report first.

The 1983 Trustees' report, the first issued after the landmark 1983 amendments, proved ultimately to be too optimistic about Social Security's course over the ensuing twenty-two years. Both the 1983 II-A and II-B Intermediate scenarios significantly overestimated the 2005 Trust Fund ratio. Moreover, the 1983 II-A Intermediate projections more than doubled (3.61%), and the II-B projections nearly doubled (2.89%), the actual eventual size of the 2005 cash surplus (1.55% of taxable payroll).

Despite its over-optimism, even the 1983 report is nevertheless evidence of the general reliability and quality of the Social Security Trustees' Intermediate projections. Among the 1983 projections, Intermediate Scenario II-B turned out to be the most accurate in predicting, over a span of twenty-two years, the cumulative value of Social Security surpluses and thus the 2005 Trust Fund ratio.

Why did the 1983 projections overestimate future Social Security surpluses? A review of the 1983 assumptions shows that demographic factors did *not* play a significant role in the excess optimism. The 1983 projections fairly accurately anticipated the number of those over the

normal retirement age in 2005, as Table 3 shows, and actually overestimated the number of beneficiaries in a way that dampened the fiscal over-optimism of the 1983 report.

**Table 3: Demographic Projections
1983 II-B Projection vs. 2005 Actuals**

Variable	1983 II-B Projection for 2005	2005 Actual
Population 65-Older	37.7 Million (July 1) ⁴¹	37.1 Million (July 1) ⁴²
Period Life Expectancy at Birth (Men)	73.7 ⁴³	74.8 ⁴⁴
Period Life Expectancy at Birth (Women)	81.3 ⁴⁵	79.6 ⁴⁶
OASI Beneficiaries	41.6 Million (June 30) ⁴⁷	39.7 Million (BOY) 40.1 Million (EOY) ⁴⁸
Aged Dependency Ratio	0.220 (July 1) ⁴⁹	0.205 (July 1) ⁵⁰
Worker-Collector Ratio	3.2 ⁵¹	3.3 ⁵²

Table 3 shows that the 1983 Trustees predicted the United States' 2005 senior population with great precision. They slightly underestimated gains in male longevity, and overestimated gains in female longevity, but overall were within one million of the 65-plus population of 2005.⁵³ The Trustees also somewhat underestimated fertility over the 1983-2000 period,⁵⁴

⁴¹ <http://www.ssa.gov/history/reports/trust/1983/1983d.pdf>, p. 87

⁴² <http://www.ssa.gov/OACT/TR/TR07/lr5A2.html>

⁴³ <http://www.ssa.gov/history/reports/trust/1983/1983a.pdf>, p. 40

⁴⁴ <http://www.ssa.gov/OACT/TR/TR07/lr5A3.html>

⁴⁵ <http://www.ssa.gov/history/reports/trust/1983/1983a.pdf>, p. 40

⁴⁶ <http://www.ssa.gov/OACT/TR/TR07/lr5A3.html>

⁴⁷ <http://www.ssa.gov/history/reports/trust/1983/1983d.pdf>, p.93

⁴⁸ <http://www.ssa.gov/OACT/TR/TR07/lr5C4.html>

⁴⁹ <http://www.ssa.gov/history/reports/trust/1983/1983d.pdf>, p. 87

⁵⁰ <http://www.ssa.gov/OACT/TR/TR07/lr5A2.html>

⁵¹ <http://www.ssa.gov/history/reports/trust/1983/1983c.pdf>, p.75

⁵² <http://www.ssa.gov/OACT/TR/TR07/lr4B2.html>

⁵³One interesting aspect of the 1983 projections is that, had a dependency-indexing correction mechanism then been in place, the adjustments that followed would have made the financing situation *worse*, because the 1983 projections actually overstated the future number of elderly beneficiaries. To be effective in the appropriate direction, a stabilizing mechanism would have needed to account for all other sources of projection error, not solely the aged dependency ratio.

though this would have very small effects on system finances in 2005. Overall, errors in demographic projections cannot be blamed for the over-optimism of the 1983 report.

The 1983 Trustees were much less accurate in predicting the size of the 2005 disability beneficiary population, significantly underestimating disability eligibility incidence. In 1983, the Trustees predicted that there would be 5.9 million disability beneficiaries by June 30, 2005.⁵⁵ In reality, there were 8.0 million by the beginning of 2005, and 8.3 million by the end.⁵⁶ This has predictably resulted in the DI program having a significantly worse (in fact, negative) cash balance in 2005⁵⁷ than was predicted in 1983.⁵⁸ The inaccuracy of the 1983 disability projections should perhaps not be considered a projection problem *per se*, because disability award frequencies were affected by subsequent legislation and regulation, including the enactment of the Social Security Benefits Reform Act of 1984.⁵⁹

The underestimation of disability incidence explains a significant part but not all of the over-optimism of the 1983 report. The cash balance in the Old-Age and Survivors (OASI) portion of the program was still overestimated in isolation. In particular, the 1983 report predicted a 2005 cost rate for OASI of only 8.72% of taxable payroll⁶⁰ in contrast with the actual rate of 9.30%⁶¹ (the difference in these cost rates may appear small, but is actually more than one-third the size of the annual surplus in 2005).

⁵⁴ Compare <http://www.ssa.gov/history/reports/trust/1983/1983a.pdf> p. 40 to <http://www.ssa.gov/OACT/TR/TR07/lr5A1.html>.

⁵⁵ <http://www.ssa.gov/history/reports/trust/1983/1983d.pdf>, p. 95

⁵⁶ <http://www.ssa.gov/OACT/TR/TR07/lr5C6.html>

⁵⁷ <http://www.ssa.gov/OACT/TR/TR07/lr4B1.html>

⁵⁸ <http://www.ssa.gov/OACT/TR/TR07/lr5C6.html>, p.74

⁵⁹ The 1984 Act established new standards for evaluating disability. See <http://www.ssa.gov/history/1986dibhistory.html>. See also Autor-Duggan, http://econ-www.mit.edu/faculty/download_pdf.php?id=1406, which states: “By far the most important contributor to the recent growth of Disability Insurance is the liberalization of the DI screening process in 1984, which increased the number of disability awards and shifted the composition of recipients towards claimants with lower mortality disorders.”

⁶⁰ <http://www.ssa.gov/history/reports/trust/1983/1983c.pdf>, p. 74

⁶¹ <http://www.ssa.gov/OACT/TR/TR07/lr4B1.html>

Somewhat contributing to the inaccuracy of the 1983 projections were slightly over-optimistic assumptions regarding real growth in taxable wages.⁶² Figure 3 shows real wage growth over the 1983-2005 period, both as it was projected in the 1983 Intermediate Scenario II-B, and as it actually occurred. Overall, the 1983 Trustees erred somewhat on the optimistic side of actual growth.

Figure 3: 1983 Projections for Real Wage Growth⁶⁴



Though imprecision in economic forecasts significantly affects near-term estimates, the various methodological improvements that the Trustees were required to make in the years following 1983 had greater implications for the long-term accuracy of the 1983 projections. In

⁶² Although there is much public attention to the Trustees’ assumptions for productivity growth, the program is not financed directly by productivity but rather by the real wage growth that productivity is found to produce. It should be noted that the 1983 report overestimated both variables. The 1983 Intermediate estimates assumed long-term productivity growth of 2.1% annually. See <http://www.ssa.gov/history/reports/trust/1983/1983d.pdf>. The 1983 report’s overestimation of real wage growth was worse than its overestimation of productivity growth, perhaps due in part to a simultaneous growth in the share of compensation received as benefits other than wages.

⁶⁴ <http://www.ssa.gov/history/reports/trust/1983/1983a.pdf> p. 37

the 1985 report, a computational error was corrected in the treatment of immigrants.⁶⁵

Previously, immigrants had been treated as though younger than the general population, thereby overestimating their amount of future tax payments, and postponing the date at which their benefit claims would be counted. Correcting this error alone worsened the 75-year actuarial imbalance by more than 10% of its currently projected size.

Significant further methodological corrections were also implemented in the 1992 report, worsening the outlook relative to previous projections.⁶⁶ The 1992 report adjusted disability incidence projections to reflect trends that the 1983 report had not foreseen. The SSA actuaries also improved their methodology for matching projected benefit levels with their projections for future earnings increases. As a result, the 1992 report recognized higher future retirement benefit payments than were projected in 1983.

Further adjustments in the 1994 report – which had the largest single-year deterioration of any Trustees’ report in the period⁶⁷ – made additional corrections for previous understatements of future benefit payments.⁶⁸ Specifically, the updated 1992 earnings samples (used for the first time in the 1994 report) showed that previous benefit projections had understated both the number of beneficiaries’ earnings years and the amounts of benefits accrued per earnings year.

Over the decade following the 1983 reforms, methodological improvements such as these, rather than correcting inaccuracies in the economic and demographic assumptions, caused the largest deterioration in the long-term projections. In 1995, the Social Security Advisory Council requested and received a summary of the changes in the projections since 1983, in order

⁶⁵ <http://www.ssa.gov/history/reports/trust/1985/1985c.pdf>, p. 72

⁶⁶ <http://www.ssa.gov/history/reports/trust/1992/1992f.pdf>, p.135

⁶⁷ The 75-year deficit increased in one year from 1.46% of taxable payroll to 2.13%.

⁶⁸ <http://www.ssa.gov/history/reports/trust/1994/1994f.pdf>, p. 128

to better understand the reasons for the deterioration of Social Security's financial picture over the interim. The single largest negative factor was changes in "methods" as described above,⁶⁹ with a combined negative impact greater than either the economic or demographic assumptions in the 1983 report. Since this 1995 study, time and events have only further emphasized that methodological issues, including disability incidence estimations, were the largest sources of over-optimism in the 1983 projections.⁷⁰ An April 21, 2007 memorandum of the SSA Chief Actuary attributes 33% of the subsequent deterioration in actuarial balance to disability incidence, 24% to other methodological issues, and 16% to economic assumptions.⁷¹

In sum, the primary sources of over-optimism in the 1983 projections were not, generally, inaccurate demographic or even economic assumptions, but were more a function of disability incidence projections and other methodological shortcomings.

At the opposite extreme from the too-optimistic 1983 report lies the 1996 report, on the whole perhaps the most pessimistic of the Trustees' reports over the 1983-2004 period. Table 4 shows that the 1996 report's demographic assumptions were quite accurate. Each of 2005's 65-plus population, aged dependency ratio, period life expectancy for both men and women, and number of OASI beneficiaries was projected more accurately in 1996 than in the 1983 report, as would be expected.

In contrast with the 1983 projections, however, the 1996 report slightly overestimated rather than underestimated 2005's level of disability recipients (8.7 million projected vs. 8.3 million actual, by the end of 2005),⁷² contributing to the overall conservatism of the 1996 report.

⁶⁹ Appendix 1 of the *Report of the 1994-96 Advisory Council on Social Security, Vol. I: Findings and Recommendations*, pp. 163-64

⁷⁰ The relative effect of imprecision in the demographic assumptions has grown since the 1995 study, but 1983 demographic projections actually worked against the over-optimism of the 1983 report.

⁷¹ 73% is attributed to changes in the 75-year valuation period, though this does not bear upon the accuracy of 1983 predictions for 2005. Demographic projections, as previously noted, cut in the reverse direction.

⁷² <http://www.ssa.gov/history/reports/trust/1996/tbiih3.html>

The 1996 Intermediate projections, however, underestimated the 2005 Trust Fund ratio and cash flow balance not only for the disability program and for Social Security as a whole, but also for the Old-Age and Survivors' program when considered separately.

**Table 4: Demographic Projections
1996 Intermediate Projection vs. 2005 Actuals**

Variable	1996 Intermediate Projection for 2005	2005 Actual
Population 65-Older	36.7 Million (July 1) ⁷³	37.1 Million (July 1) ⁷⁴
Period Life Expectancy at Birth (Men)	74.5 ⁷⁵	74.8 ⁷⁶
Period Life Expectancy at Birth (Women)	80.5 ⁷⁷	79.6 ⁷⁸
OASI Beneficiaries	41.3 Million (EOY) ⁷⁹	40.1 Million (EOY) ⁸⁰
Aged Dependency Ratio	0.207 (July 1) ⁸¹	0.205 (July 1) ⁸²
Worker-Collector Ratio	3.1 ⁸³	3.3 ⁸⁴

Whereas the 1983 report overestimated future real wage growth, the 1996 report underestimated it. Figure 4 shows that the 1996 underestimation was largely because the period of unusually rapid wage growth in the late 1990s was not foreseen – neither by the Trustees, nor by other government forecasters. (The conservatism of the 1996 projections may also have been influenced by the fact that only once in the eight years from 1987-94 did the real-wage differential exceed 1.2%, with an annual average of only 0.3% over that period). Nevertheless,

⁷³ <http://www.ssa.gov/history/reports/trust/1996/tbiih1.html>

⁷⁴ <http://www.ssa.gov/OACT/TR/TR07/lr5A2.html>

⁷⁵ <http://www.ssa.gov/history/reports/trust/1996/tbiid2.html>

⁷⁶ <http://www.ssa.gov/OACT/TR/TR07/lr5A3.html>

⁷⁷ <http://www.ssa.gov/history/reports/trust/1996/tbiid2.html>

⁷⁸ <http://www.ssa.gov/OACT/TR/TR07/lr5A3.html>

⁷⁹ <http://www.ssa.gov/history/reports/trust/1996/tbiih2.html>

⁸⁰ <http://www.ssa.gov/OACT/TR/TR07/lr5C4.html>

⁸¹ <http://www.ssa.gov/history/reports/trust/1996/tbiih1.html>

⁸² <http://www.ssa.gov/OACT/TR/TR07/lr5A2.html>

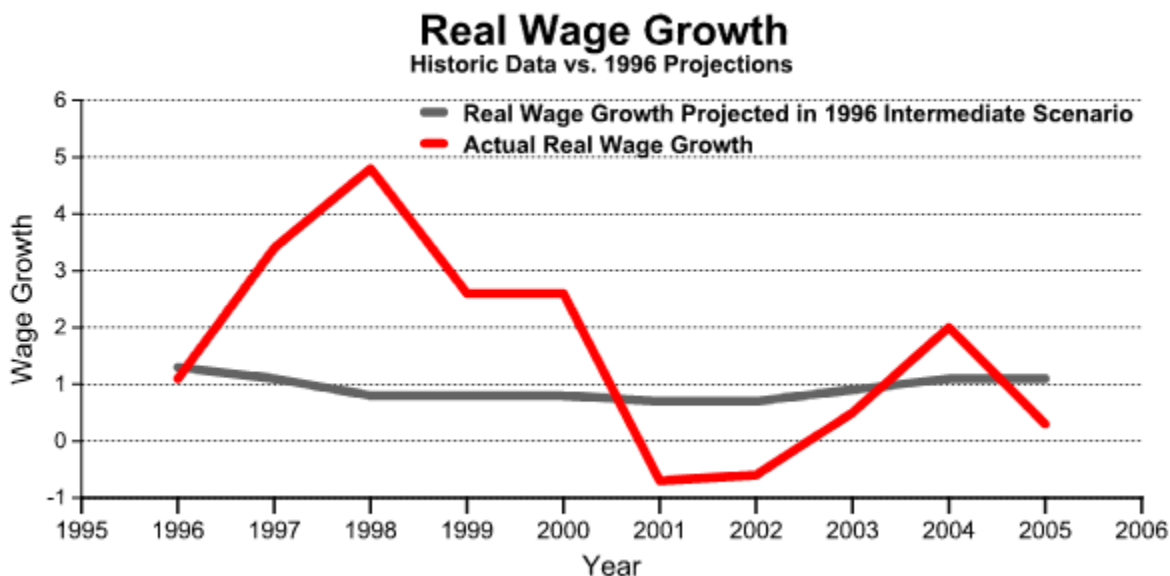
⁸³ <http://www.ssa.gov/history/reports/trust/1996/tbiif19.html>

⁸⁴ <http://www.ssa.gov/OACT/TR/TR07/lr4B2.htm>

⁸⁶ <http://www.ssa.gov/history/reports/trust/1996/tbiid1.html>

even the conservative 1996 report overestimated real wage growth in as many years (five) as they underestimated (five) over the subsequent decade.

Figure 4: 1996 Projections for Real Wage Growth⁸⁶



The 1999 Trustees’ report showed the second largest single-year improvement in Social Security’s outlook at any point during the 1983-2004 period. Changes in both short-term and long-term economic assumptions were the biggest reason for the improvement between the 1998-99 reports,⁸⁷ with the principal long-term modification being a reduction in projected price inflation over the long term (the more frequently-discussed projection for long-term real wage growth remained unchanged between the two reports).⁸⁸

The 2000 report showed the greatest single-year improvement in the actuarial balance of any Trustees’ report since 1983. In understanding the reason for the improvements, primary

⁸⁷ <http://www.ssa.gov/OACT/TR/TR99/tr99.pdf>

⁸⁸ <http://www.ssa.gov/OACT/TR/TR98/tr98.pdf> p. 57, <http://www.ssa.gov/OACT/TR/TR99/tr99.pdf>, p. 58

attention must once again be paid to methodological corrections over changes in assumptions. The 2000 report did increase the Trustees' long-term real-wage growth assumptions, but that change's effect on the 75-year balance was exceeded by the impact of methodological changes made in the same year.⁸⁹ These methodological updates increased the projected employment of women, and reduced the number of projected surviving spouse beneficiaries, both of which changes (along with other methodological corrections) reduced the projected imbalance.⁹⁰ Overall, even since the conservative 1996 report, the net effect of subsequent changes to previous economic assumptions upon Social Security's financial outlook has been somewhat exceeded by the combined effects of methodological modifications (including disability incidence projections).⁹¹

In sum, the examples of the too-optimistic 1983 report and the too-pessimistic 1996 report both support a conclusion that is further substantiated by reviewing the 1983-2004 Trustees' reports in their entirety. In contrast with the popular misimpression that the Trustees have been too pessimistic due to overly-conservative economic assumptions, the historical reality is that *since 1983 the Trustees' Intermediate projections have proved qualitatively accurate, tending to err somewhat on the side of optimism, with disability incidence projections and other methodological issues each playing (except over short periods) a significantly larger role than economic assumptions in the inevitable imprecision.*

⁸⁹ <http://www.ssa.gov/OACT/TR/TR00/tr00.pdf>, p. 130

⁹⁰ <http://www.ssa.gov/OACT/TR/TR00/tr00.pdf>, p.131

Back to the Future

That the Trustees' have been generally accurate, indeed slightly optimistic, in their projections to date, does not constitute a proof that they are currently so concerning the future. Figure 5 below shows how the projections for the system's future annual operations, through 2030, have fluctuated in the Trustees' reports issued every five years.

Figure 5: Previous Projections of Annual Balances Through 2030 ⁹²

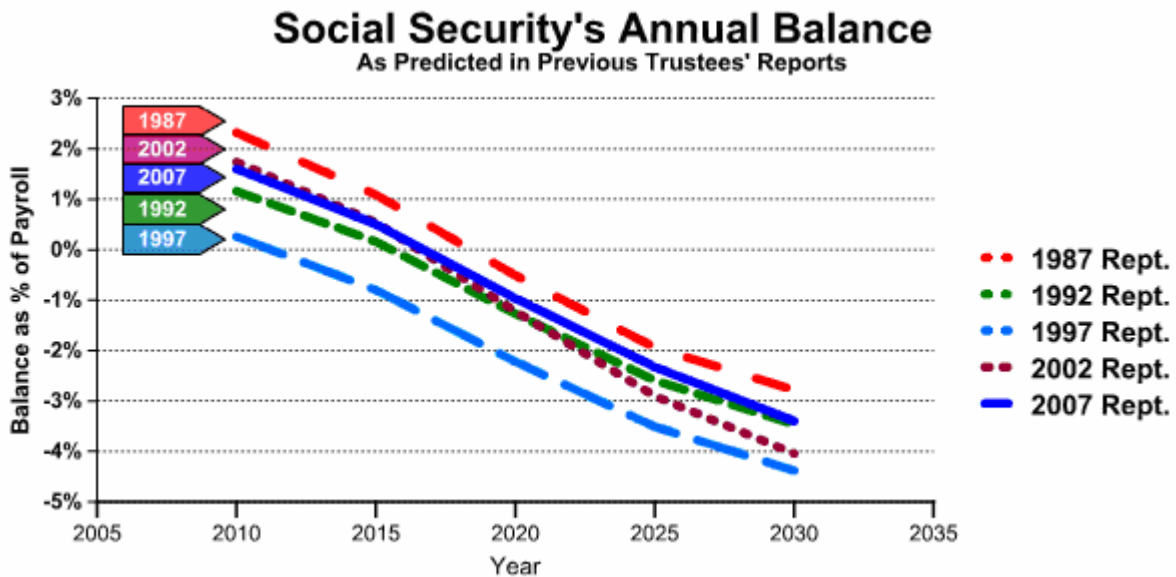


Figure 5 shows different Trustees' reports predicting a qualitatively similar diminution in annual system balances in the upcoming years, despite covering a wide range of Trustees' report years, with different mixes of projected and historical data. The 1987 report projected a more optimistic picture than we now foresee based on data through 2007. Revisions through 1992,

⁹¹ April 21, 2007 memorandum of the SSA Office of the Chief Actuary.

many of them methodological corrections, brought the 1992 report extremely close to the Trustees' current projections. The 1997 report, by contrast, was issued during the period of the Trustees' most conservative projections, and had a more pessimistic view of the long-term. The 2002 and 2007 reports returned to a picture qualitatively similar to the 1992 report, with the 2002 report the more pessimistic of the two with respect to the long-term picture.

The Trustees' reports have remained very consistent in projecting that Social Security will enter permanent cash deficits some time between 2015 and 2020, the sole exception on this graph being the conservative 1997 report. Despite widespread wishful thinking, nothing has happened to suggest that the Trustees' prediction of imminent annual shortfalls will not come true within the next 10-15 years, almost precisely as projected in the majority of annual reports for more than two decades. *Delay in acting to fix Social Security has not generally postponed the date of reckoning, but has instead simply constrained the options of legislators to equitably distribute the effects of the changes required to attain sustainable solvency.*

It is illuminating to compare the assumptions underlying the Trustees' current Intermediate projections with recent historical experience. With respect to fertility, the Trustees' project that it will level off at roughly where it has been for the last two decades, at roughly two children per woman. See Figure 6.

As to longevity, the Trustees project that its growth over the next 40 years will slow slightly relative to the rate of growth over the previous 40 (and to more closely approximate trends in the most recent years). This is true not only for period life expectancy at birth (see

⁹² <http://www.ssa.gov/OACT/TR/TR07/lr4B1.html>, <http://www.ssa.gov/OACT/TR/TR02/lr4B1-2.html>, <http://www.ssa.gov/OACT/TR/TR97/tr97.pdf>, p.172, <http://www.ssa.gov/history/reports/trust/1992/1992f.pdf>, p.113, <http://www.ssa.gov/history/reports/trust/1987/1987c.pdf>, p.66

Figure 6: Trustees' Intermediate Fertility Projections⁹³

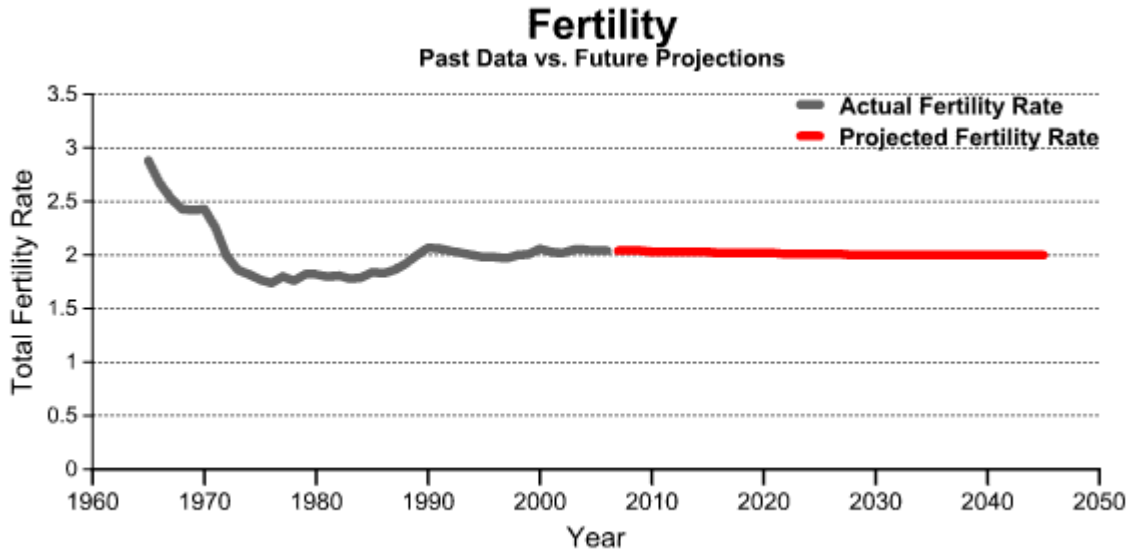
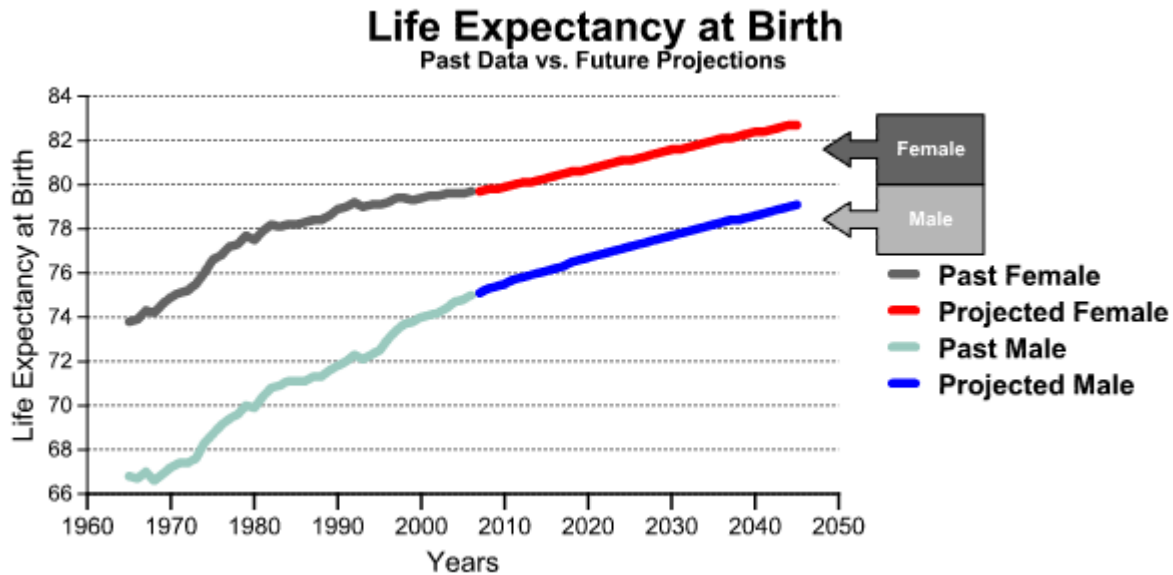


Figure 7), but also period life expectancy at age 65 (see Figure 8).⁹⁴

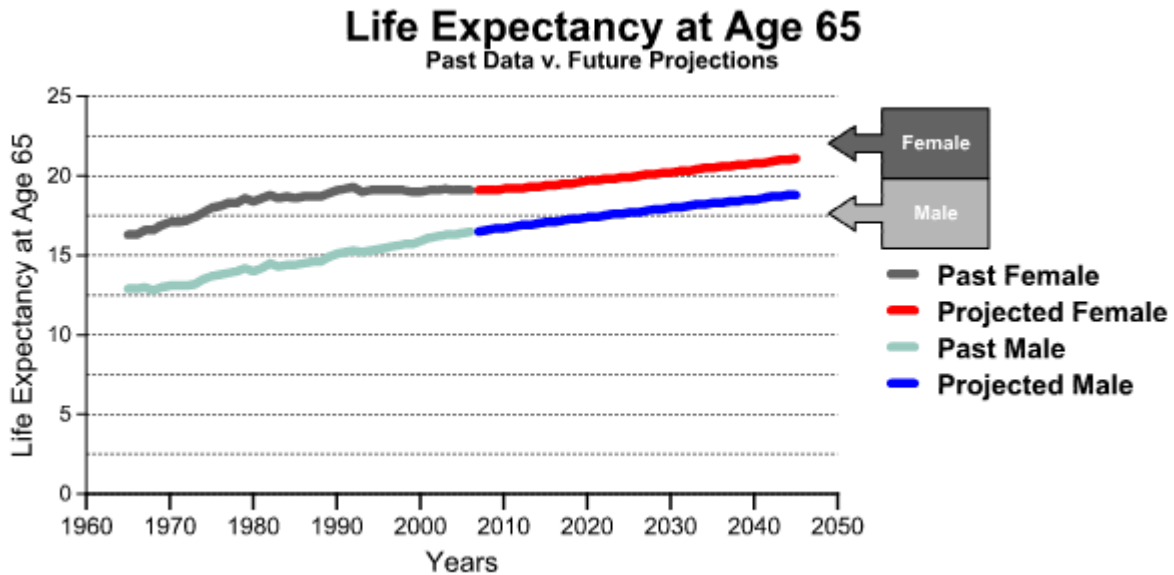
Figure 7: Trustees' Intermediate Projections for Period Life Expectancy at Birth⁹⁵



⁹³ <http://www.ssa.gov/OACT/TR/TR07/lr5A1.html>

⁹⁴ Many experts believe that cohort life expectancy is the more useful measure, but we use period life expectancy here because it has been used more consistently in the Trustees' Reports since 1983. Period life expectancy refers to contemporary life expectancy at the time of a cohort's birth. Cohort life expectancy is actually more reflective of how long a particular birth cohort is expected to live, because it incorporates life expectancy gains during that cohort's lifetime.

Figure 8: Trustees' Intermediate Projections for Period Life Expectancy at 65



Future economic performance is more difficult to predict and, as also previously noted, has been a focus of criticism of the Trustees' estimates. These projections are thus worth dissecting in some greater detail.

Social Security is presently funded principally by taxes on covered wages, with a comparatively small contribution from the taxation of benefits. Productivity growth is relevant to Social Security's finances only insofar as it results in real growth in the wages upon which Social Security taxes are levied.

With respect to both productivity and real wage growth, the Trustees are projecting that annual growth rates over the long term will be roughly consistent with (in the case of productivity) or slightly higher than (in the case of real wage growth) historical averages over the last 40 years.⁹⁶ These trends can be seen on Figures 9 and 10.⁹⁷

⁹⁵ <http://www.ssa.gov/OACT/TR/TR07/lr5A3.html>

⁹⁶ Productivity has averaged 1.7% over the last 40 years, real wage growth 0.9%. See http://www.ssa.gov/OACT/TR/TR07/V_economic.html#wp131307.

⁹⁷ Comparison of the two figures also shows the greater volatility in real wage growth relative to productivity growth.

Figure 9: Trustees' Intermediate Projections for Productivity⁹⁸

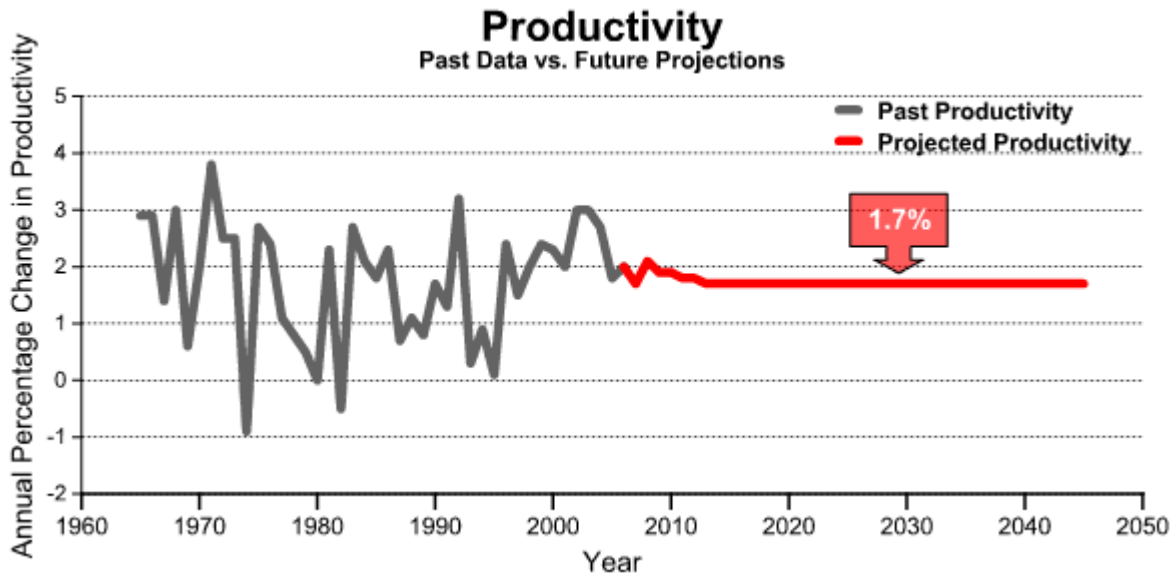


Figure 10: Trustees' Intermediate Projections for the Real-Wage Differential

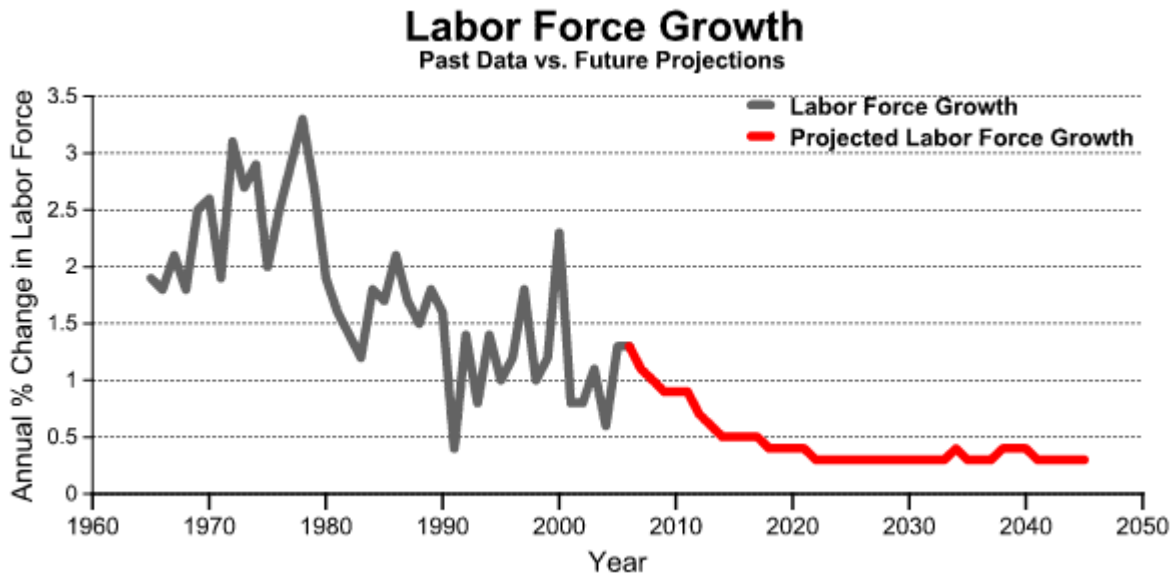


Whence comes, then, the impression that the Trustees are being excessively conservative in their future economic projections? The criticisms quoted earlier in this paper refer generically

⁹⁸ <http://www.ssa.gov/OACT/TR/TR07/lr5B1.html>

to conservative projections for “economic growth” without always specifying whether this criticism applies to *aggregate* or *per-capita* growth. As shown here, the Trustees are not projecting a slowing in per-capita real-wage growth relative to historic averages, but rather a slight increase. The Trustees *are*, however, projecting a slowing in the growth of the *aggregate* payroll tax base, simply as a consequence of slower growth in the labor force.

Figure 11: Trustees’ Intermediate Projections for Labor Force Growth⁹⁹



In order for the Trustees to be qualitatively wrong about the growth of Social Security’s future revenues – in other words, so wrong that the Intermediate projections prove inferior to either the Low-Cost or High-Cost projections – they must be enormously wrong either in their projections for real wage growth or in their projections for the growth of the workforce, or both. For the Trustees to have significantly underestimated future Social Security revenue, either the labor force must grow more rapidly than the Trustees project, or future real wage growth must be

significantly higher than it has been in the past. Failing one or the other of these deviations, the Trustees' projections for Social Security will be qualitatively correct.

The individual components of the Trustees' economic projections are reasonable. They project that total workforce growth will begin to slow significantly in 2008, when the entry of new workers begins to be significantly counterbalanced by the first baby boomers reaching 62 and beginning to leave the workforce in large numbers. There does not appear to be a strong reason why this demographic event would not play out qualitatively as projected by the Trustees, nor is there a widely agreed-upon reason to believe that real wage growth over the long-term future will significantly exceed past levels. Consistent rates of real per-capita wage growth, coupled with a reduction in the growth in the number of workers, if both events indeed occur, must combine to slow the rate of growth of the aggregate taxable wages that fund Social Security.

Detailed examination of the Trustees' labor force projections reveals just how unlikely it is that future economic growth will receive the same boost from labor force growth that it has in the past. The Trustees project that labor force growth will slow to 0.3% annually by the 2020s, owing largely to the gradual departure of the Baby Boom generation from the workforce. By contrast, the U.S experienced labor force growth of at least 1.2% annually in every single year from 1963-1990, and at least 1.5% in 26 of those 28 years. To maintain 1.5% annual labor force growth in the 2020s, for example, would mean that the Trustees are underprojecting future labor force growth by a factor of five, and would require more than 2 million additional workers per year throughout the decade. Even those who believe that the Trustees are underprojecting future immigration levels, or who believe that the baby boomers will begin to further extend their working lives, are unlikely to argue that such phenomena would produce a fivefold increase in

⁹⁹ <http://www.ssa.gov/OACT/TR/TR07/lr5B2.html>

the projected rate of labor force growth. Thus, unless real-wage growth is much higher in the future than it has been in the past, the directional trend of the Trustees' aggregate economic growth projections will be correct.

The degree to which even considerable deviations from projected economic growth can affect the Social Security shortfall can be sensed by reviewing particular calculations published in the annual Trustees' report. For each of the last few years, the Trustees have presented a full stochastic analysis of their projections, which shows the probability of different outcomes arising from such deviations. Variables whose influence are tested include fertility, mortality, immigration rates, price inflation, real wage levels, unemployment, interest earnings of the Trust Funds, and disability incidence, among others.¹⁰⁰

This stochastic exercise shows that variations in economic projections, even when coupled with potential variations in several other critical demographic variables, are very unlikely to produce a qualitative change in Social Security's future direction. The 80% confidence range – that is, from the 10th percentile to the 90th percentile of the results – stretches only from 2014 through 2020 for the onset of permanent annual deficits, and only from 2035 to 2051 for Trust Fund insolvency.¹⁰¹ Moreover, each of the so-called “Low Cost” and “High Cost” projections do not lie even within the 95% confidence range. Those two projections lie at opposite ends of the spectrum of possible outcomes, either generally above the 97.5th percentile, or below the 2.5th percentile, depending on one's vantage point.

It is useful once again to touch upon the important difference between methodological problems and assumption-driven variations. The stochastic analysis cannot adequately touch upon imprecision that may arise as a consequence of methodological shortcomings. Instead, the

¹⁰⁰ http://www.ssa.gov/OACT/TR/TR07/VI_stochastic.html#wp103970

¹⁰¹ http://www.ssa.gov/OACT/TR/TR07/VI_stochastic.html#wp100970

stochastic analysis shows the relative likelihood that errors in predicting critical economic and demographic variables will move the results in a qualitative way. In short, it is extremely unlikely. The public would be better served by greater attention to the Trustees' annual stochastic analysis, and the information that it contains concerning the extremely slight plausibility of both the Low-Cost and High-Cost projection scenarios.

The Trustees publish additional calculations that further illuminate the limited potential effect of faster economic growth on Social Security's finances. Their "sensitivity analysis" of variations in real wage growth shows that even if it averages 1.6% over the next 75 years – that is, 45% higher than the Trustees now project, and 78% higher than the average over the last 40 years – insolvency would be delayed by only six years, and the system would still face 75% of the magnitude of annual deficits now projected for the end of the Trustees' 75-year valuation period.¹⁰²

The Trustees also annually publish the generational components of the Social Security structural shortfall, which is equal to 3.5% of all future taxable wages (see Table 5).¹⁰³ These calculations further explain the qualitatively modest potential effect of changes in economic growth.

These calculations illumine a number of facets of Social Security financing. One is the fact that the program's total shortfall of roughly 3.5% of all future taxable wages is not a speculative projection of distant future events. To the contrary, it is a result of the excess of benefit obligations over taxes paid by people who have already entered the system – that is,

¹⁰² http://www.ssa.gov/OACT/TR/TR07/VI_LR_sensitivity.html#wp93098

¹⁰³ This table breaks down the components of the so-called "infinite horizon imbalance". Some analysts prefer the "infinite horizon" imbalance to the "75-year actuarial imbalance" figure, in part because the latter counts only the tax payments for several birth cohorts while neglecting benefits obligated to those same cohorts. The "infinite horizon" imbalance in turn sparks concerns from other analysts, about the feasibility of extending projections over all future time. As this table shows, however, the imbalance identified in the infinite-horizon calculations is not one that arises only in the distant future, but consists of the excess of benefits over taxes for those already in the system.

mostly of events that have already occurred. Diamond and Orszag use the term “legacy debt” in outlining a similar explanation for Social Security’s structural shortfall.¹⁰⁴

Table 5: Components of Social Security’s Financial Imbalance¹⁰⁵

Balance	% of Future Taxable Wages
Current and Past Participants: Excess of Benefits Obligated over Taxes Paid	3.7% ¹⁰⁶
Future Participants: Balance of Projected Benefits vs. Projected Taxes	-0.2%
= Total Unfunded Obligation	3.5%

This in turn limits the capacity of future economic growth to cut significantly into Social Security’s structural shortfall. Future economic growth will affect both future workers’ taxes, and benefits, much more than it will the balance involving those who entered in the system in the past. The linking of both tax revenues and benefits to wage growth limits the extent to which faster wage growth may change the imbalance. Projected taxes for these future workers nearly balance their projected scheduled benefits under current law. Faster growth would increase the

¹⁰⁴ “The benefits paid to almost all current and past cohorts of beneficiaries exceeded what could have been financed with the revenue they contributed, including interest. This history imposes a “legacy debt” on the Social Security system. That is, if earlier cohorts had received only the benefits that could be financed by their contributions plus interest, the trust fund’s assets would be much greater today. If those expanded assets existed, they would be earning interest that could contribute to benefits. A reasonable estimate of the program’s legacy that needs to be financed by those younger than 55 years old is \$11.5 trillion.” Diamond and Orszag, Saving Social Security: A Balanced Approach. Author’s note: The difference between the Diamond-Orszag calculation of \$11.5 Trillion and the current Trustees’ calculation of \$14.4 Trillion is largely due to the passage of some time since the publication of the Diamond-Orszag book. This passage of time changed the base year used in the PV calculation and also swept additional birth cohorts into the Trustees’ current calculations. Furthermore, the Trustees presently use a slightly smaller discount rate than they used when Diamond-Orszag published their calculation, which contributes to the difference. The Trustees’ similar calculation in the 2004 report was \$11.2 Trillion, much closer to the Diamond-Orszag figure.

¹⁰⁵ http://www.ssa.gov/OACT/TR/TR07/IV_LRest.html#wp267012

¹⁰⁶ 3.7% of payroll = \$14.4 T in PV (\$2007). The \$14.4 T figure derives as follows. Future benefit payments for those already in the Social Security system will exceed the taxes they pay by \$16.5 T in present value. In the past, those same generations paid \$2.0 T (in present value) in taxes more than they received in benefits, resulting in the current Trust Fund balance of \$2.0 T. The difference between these two figures, rounding, is \$14.4 T, meaning that

size on both ends of that exchange, but offers no plausible chance of increasing a surplus of 0.2% of wages to 3.7% (the amount necessary to counterbalance the imbalance of payments to previous generations) – unless a fundamental structural change is legislated, such as the decoupling of the program’s benefit formulas from wage growth.

Jagadeesh Gokhale and Andrew Biggs have written a paper¹⁰⁷ showing that faster economic growth may somewhat *worsen* Social Security’s shortfall as measured as a percentage of taxable wages. (“*This paper shows analytically that faster wage growth may reduce Social Security’s infinite-term actuarial balance if the ratio of workers to retirees continues to decline rapidly beyond the 75th year.*”) There are caveats that should be stated with this finding – for one, its dependence upon a declining worker-collector ratio, and for another, the imprecise meaning of present-value calculations over an infinite horizon¹⁰⁸ – but the qualitative finding is clear: faster economic growth will not eliminate Social Security’s structural imbalance under current law.

The role of economic growth projections in the Trustees’ estimates can be summarized thus: first, the Trustees have in the past overestimated near-term real wage growth in some reports and underestimated it in others. Second, the long-term economic assumptions in the Trustees’ most conservative few previous reports are no longer in use. Third, for projections of future growth in the taxable wage base to be reliable, they must account for not only per-capita real wage growth but also the aggregate growth of the workforce, as the Trustees’ do. Fourth, stochastic analysis shows only an extremely small likelihood that Social Security’s projected

current and past participants in Social Security will have taken more than \$14 T out of Social Security than they paid into it, which accounts for the entirety of Social Security’s structural imbalance.

¹⁰⁷ http://papers.ssrn.com/sol3/papers.cfm?abstract_id=920156

¹⁰⁸ The Gokhale-Biggs calculations show that the PV of the total imbalance worsens with faster economic growth even as annual imbalances improve, an apparent paradox that is explained by the manner in which changes in economic growth affect the weighting of different years in the computation.

shortfalls will diminish enough to render the Intermediate projections inferior to the Low-Cost or High-Cost projections. Fifth, the Social Security imbalance arises principally from factors that are not qualitatively affected by future economic growth. And sixth, recent published work argues that faster wage growth will not reduce the structural Social Security imbalance, if the worker-collector ratio continues to decline and if the benefit formula remains wage-indexed. None of the above factors conclusively demonstrate that the “soft thesis” of excess conservatism by the Trustees is wrong, as the “hard thesis” of past conservatism demonstrably is. But these six factors certainly add up to powerful reasons why the “soft thesis” cannot reliably be leaned upon for comfort regarding Social Security’s future.

The Trustees’ long-term assumptions have generally been found to be reasonable by the Technical Panel on Assumptions and Methods of the Social Security Advisory Board. The most recent Technical Panel report (2003) recommended changes that would have only slightly altered the projected 75-year actuarial deficit in Social Security, from 1.92% to 1.90%.¹⁰⁹ (The Technical Panel did recommend that the Trustees’ projection for long-term productivity growth be increased, from 1.6% to 1.7%. This modification has since been incorporated into the Trustees’ Intermediate projections.) The 2003 Panel also recommended that the Trustees increase their estimates of future immigration levels, improving the actuarial balance – but also that they increase their projections for life expectancy improvements, reducing the 75-year balance by an approximately equal amount.

The previous report of the 1999 Technical Panel actually asserted that the Trustees were likely significantly understating the long-term shortfall.¹¹⁰ The 1999 panel, like the 2003 panel, also recommended changes in economic assumptions that would improve the actuarial balance,

¹⁰⁹ http://www.ssab.gov/documents/2003TechnicalPanelRept_000.pdf, p.10

¹¹⁰ <http://www.ssab.gov/Publications/Financing/tech99.pdf>, p. 18.

but which would be more than offset by the 1999 panel's recommended changes to the demographic assumptions. Both the 2003 and 1999 Panel reports are examples of analyses that found the Trustees' long-term projections to be too conservative on economic growth, without a significant positive change in Social Security's overall long-term outlook resulting from this finding. Significantly, in the work of the current (2007) Technical Panel, economic assumptions will be but part of an overall assessment of the Trustees' projections, an evaluation that encompasses not only economics but demographics, immigration, disability incidence, and fundamental methodology. If history is a reliable guide, economic assumptions will not necessarily play a dominant role in the findings.¹¹¹

In recent years, the Congressional Budget Office (CBO) has begun to release its own independent projections of Social Security's future finances. CBO's June, 2004 report, "The Outlook for Social Security," drew attention from opponents of fundamental Social Security reform¹¹² because it posited a longer period of solvency for Social Security under current law than seen by the Trustees.¹¹³ Several aspects of the Trustees-CBO differences are worth noting.

First, a primary reason for the difference between the CBO and the Trustees' outlook is methodological, rather than arising from differences over economic assumptions. In its 2004 report, CBO wrote:

"Overall, CBO's economic assumptions result in higher projected outlays relative to GDP than the trustees' assumptions do. CBO's modeling techniques, by contrast, result in lower projected outlays than the trustees' do when using the same economic assumptions. CBO and the trustees take different approaches to projecting the distribution of future beneficiaries' earnings; that and other modeling differences cause CBO to project lower average retirement benefits than the trustees do, especially for men

¹¹¹ For example, the effect of the 2003 Technical Panel's recommended changes in immigration assumptions exceeded the impact of their recommended changes in real-wage growth assumptions.

¹¹² <http://www.csmonitor.com/2005/0214/p17s01-cogn.html>, among many other pieces.

¹¹³ <http://www.cbo.gov/ftpdocs/55xx/doc5530/06-14-SocialSecurity.pdf>

retiring around 2020 and later. The economic and modeling differences completely offset each other by 2080.”¹¹⁴

Second, CBO has since adjusted their assumptions and as a result has moved considerably closer to the Trustees’ projections. The Trustees currently project the onset of cash deficits in 2017, and insolvency in 2041. CBO’s most recent report finds the same dates to be 2019 and 2046.¹¹⁵

Thirdly, and perhaps most importantly for our purposes: were CBO to be precisely correct in their projections for the long-term, the result would again validate the Trustees’ Intermediate projections as continuing to be more accurate than either their High-Cost or Low-Cost projections. That is, CBO’s long-term projections are much closer to the Trustees’ Intermediate projections than they are to either of the other two scenarios.

Conclusion

In sum, while only the future can prove or disprove the “soft thesis” that the Trustees are being too conservative about future economic growth, there are important lessons to be learned from the information presently at hand.

First, the “hard thesis” that the Trustees have generally been too conservative in their past projections is empirically incorrect. In predicting the accumulated value of Trust Fund

¹¹⁴ <http://www.cbo.gov/ftpdocs/55xx/doc5530/06-14-SocialSecurity.pdf>, p. 30

¹¹⁵ <http://www.cbo.gov/ftpdocs/72xx/doc7289/06-14-LongTermProjections.pdf>. CBO’s revision to move closer to the Trustees’ numbers has not proved to be the news event that was their previous publication in 2004 of a greater difference with the Trustees. A Google search on “Congressional Budget Office Social Security 2052” shows 54,900 hits, whereas the same search for “2046” shows 39,200. Many of these respective hits overlap in that they link to primary Congressional Budget Office sources; thus the propensity of policy advocates to cite the 2052 number is likely greater by a higher proportion than the 40% surplus, on Google, of references to 2052. The extra attention given to more optimistic estimates is more readily seen when adding anti-reform phrases such as “phony crisis” to the search, which causes the hit ratio to become more pronounced, in this case 534 to 174. It seems that

surpluses through 2005, the Trustees' Intermediate projections have been the most accurate. In predicting the state of annual cash operations by 2005, the path of greatest accuracy lay generally between the Trustees' Intermediate and High-Cost scenarios. The High-Cost scenarios were the most accurate in the highest number of reports, while the Intermediate scenarios exhibited the smallest total errors by a wide margin. Generally speaking, the Low-Cost projections have been the *least* accurate, although the Trustees' projections of the mid-1990s were exceptions to this rule. Solely on the basis of the Trustees' track record to date, there is at least as much reason to pay heed to the Trustees' "High-Cost" estimates as to their "Low-Cost" estimates, though each scenario is extremely improbable.

Second, while the argument can be made that the Trustees' projections for future economic growth are too conservative, this argument can only be fairly made while recognizing that the aggregate taxable wage growth that provides Social Security's revenue source is a product of growth in the real wage differential times growth in the labor force. That is to say, the argument of excess conservatism in the macroeconomic projections requires either an explanation as to why the Trustees' current labor force projections are likely inaccurate, or an explanation as to why per-capita wage growth will be significantly higher in the future than it has been in the past, or both.

Third, the argument of excess conservatism must also recognize that economic assumptions have fairly limited potential to qualitatively change the long-term picture, relative to such other more malleable and relevant factors as disability incidence and benefit modeling methods. One reason for this is the link of both revenue and benefit growth to national wage growth. The relatively modest potential effect of economic growth is manifested in a variety of

disproportionate attention is given to viewpoints that are more optimistic than the Trustees, even in a comparison of two viewpoints of the same authority, in this case the Congressional Budget Office.

symptoms. Such evidence includes the past annual revisions in the Trustees' estimates, in which economic re-estimates were frequently overshadowed by methodological modifications. Further evidence is the relative imperviousness of the structural Social Security deficit to economic growth projections, as shown independently by sources ranging from Gokhale-Biggs to the Trustees themselves. Additional evidence is circumstantial but powerfully suggestive, such as the fact that differences between leading scoring agencies, such as the Trustees and CBO, are based at least as much on methodological disputes as on economic factors.

The American public is not well served by the myth that the perceived Social Security shortfall arises from projections that in the past have proved too conservative, and that it might therefore simply vanish of its own accord. People can differ reasonably over the best way to close a shortfall projected for the future, but not over whether to recognize the factual reality of the past. Though projections have fluctuated since the 1983 reforms, the 1983 projection of permanent cash deficits in 2021¹¹⁶, and insolvency in 2058, has gradually been revised forward, not further away, to now appear as permanent cash deficits by 2017, and insolvency in 2041. That current projection of permanent cash deficits in 2017 was foreseen well before now, in the 1991 Trustees' report.¹¹⁷ This projection has not moved at all, net, over the intervening sixteen years, during which now-historical data steadily replaced what were then mere projections. Today in 2007, we now have but ten years of lead time before the projected permanent cash deficits arise, in contrast with 1991 when twenty-six years of such opportunity loomed. The principal consequence of delay has not been the diminution of the perceived problem, but only a limiting of the available options for equitable reform.¹¹⁸ Delay since 1991 has simply added

¹¹⁶ <http://www.ssa.gov/history/reports/trust/1983/1983c.pdf>, p.72

¹¹⁷ <http://www.ssa.gov/history/reports/trust/1991/1991c.pdf>, p. 77.

¹¹⁸ This diminished flexibility arises in part because there exists a bipartisan political consensus that benefits for those already in or near retirement should not be changed in the course of reforming Social Security.

sixteen years of birth cohorts to the number that compose the shortfall, and increased the relative burden on the remaining cohorts to resolve it.

As Michael Barone recently wrote¹¹⁹, the degree of certainty in Social Security projections far exceeds that associated with our ability to predict other future crises. Moreover, the costs of the Social Security shortfall are far more precisely quantifiable. The factors that contribute to the Social Security shortfall – namely the excess of benefit payments over taxes contributed for those in the system already (as noted by Diamond and Orszag in their explanation of the “legacy debt”) – have for the most part already taken place, and will not be significantly affected by future events. Hoping that imprecision in current economic assumptions will rescue us, and leaning on that hope as a substitute for active statesmanship is especially irresponsible when it is founded upon a readily disprovable myth concerning the projections to date. The Trustees could be too conservative in their projections about the future. But for most of the past, they were not a bit too conservative in predicting the present.

¹¹⁹ <http://article.nationalreview.com/?q=MzE3MGY1MmYzZjFiYzYzMxNmE0YTA3Mzc0ZDMyMmMxODE=>

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