SOCIAL SECURITY

June 9, 1997

Mr. Paul Simon
Public Policy Institute
Southern Illinois University
Carbondale Illinois

Dear Mr. Simon

It was a pleasure to spend the day with you, and former Senators Simpson, Pryor, and Danforth on May 22, 1997. Thank you for the hospitality and all the help from Marilyn and other members of your staff.

The two proposals that you agreed on were (1) that the Congress act to "fix" the COLA for Social Security and (2) that the Social Security benefit and contribution base be eliminated. The combined effect of these proposals would improve the long-range (75-year) OASDI actuarial balance by between 2.4 and 2.8 percent of taxable payroll, thus eliminating the long-range deficit, currently estimated at 2.23 percent of payroll.

The recommendation to "fix" the COLA is inferred to mean that the Congress would set the Social Security COLA at the measured increase in the CPI less 1.1 percentage points, the size of the overstatement in the CPI suggested by the Boskin commission. If the Congress were to act as you recommend, the long-range OASDI actuarial balance would be improved by between 1.0 and 1.4 percent of payroll, depending upon the changes made in other price indexes and resulting changes in long-range economic assumptions by the Social Security Board of Trustees. Of course, if the Congress were to make a smaller change, the effect on the actuarial balance would be commensurately smaller. The attached memorandum provides some further description of the possible effects of a change in the CPI or COLA.

As you are aware, the Bureau of Labor Statistics is currently studying an approach to addressing one of the sources of bias identified by the Boskin commission. They have developed an experimental index and expect to implement a change in the CPI that addresses the "lower level substitution bias" by the beginning of 1999. They estimate that the effect of this change will be to lower future measured growth in the CPI by between

zero and 0.25 percent. The second attached memorandum provides further detail on this effort.

The second proposal that you adopted was to eliminate the Social Security benefit and contribution base, which is $65,400 for 1997. Enactment of this proposal would improve the long-range OASDI actuarial balance by about 1.4 percent of taxable payroll. As we discussed, the Advisory Council members unanimously rejected any increase in this base because doing so would worsen the rate of return, or "money's worth" on Social Security benefits for higher income workers. The Advisory Council was concerned with the money's worth of benefits in general, but was highly concerned that money's worth returns that are already fairly low for very high income workers not be lowered further. The other concern with increasing the base is that benefit levels for very high earners would be large, even with the relatively small marginal credit afforded in the computation of benefit levels in the primary insurance amount (PIA) formula. (For 1997, the PIA formula provides a monthly benefit equal to 0.90 of average indexed monthly earnings (AIME) up to $455, 0.32 of AIME between $455 and $2,741, and 0.15 of AIME above $2,741. For example, a worker entering the workforce today who consistently earned $654,000 in 1997 dollars would pay 10 times the amount of payroll taxes under this proposal as under present law, but would be eligible for a benefit that is 5.75 times as large as under present law ($8,904 versus $1,547 under present law, in 1997 dollars). The third enclosed memorandum provides more detail on estimates for eliminating the earnings base.

Developing the next set of comprehensive reforms for the Social Security program will require much analysis and difficult decisions. In your two part proposal, you have illustrated that the program can be set back into long-range actuarial balance with a small number of straightforward changes that balance benefit reductions and tax increases. Please feel free to pass this material on to former Senators Simpson, Pryor and Danforth as you wish. Please also feel free to contact us if we may be of further assistance.

Stephen C. Goss
Deputy Chief Actuary

Enclosures

SOCIAL SECURITY

MEMORANDUM

Date: May 6, 1997 Refer To: TCC

To: Harry C. Ballantyne
Chief Actuary

From: Stephen C. Goss
Deputy Chief Actuary

Subject: Estimated Potential Long-Range OASDI Financial Effect of Modifications to the CPI/COLA--INFORMATION

The Social Security automatic cost-of-living adjustment for December of each year is based on the increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) from the average for the third calendar quarter of the prior year to the average for the third calendar quarter of the current year. Under the intermediate projections of the 1997 Trustees Report, the CPI-W is assumed to rise at an ultimate average rate of 3.5 percent per year.

As currently constructed, the CPI measures increases in prices using a fixed (but periodically updated, about every 10 years) marketbasket of goods and services. The final report (December 1996) on possible bias in the CPI, by the panel chaired by Michael Boskin, appointed by the Senate Finance Committee, suggests that the CPI may overstate the annual increase in the "cost of living" by about 1.1 percentage points, on average. There is not at this time universal agreement that the estimate of a 1.1-percentage point bias is correct. The portion attributed to "substitution bias" is currently under study by the Bureau of Labor Statistics (BLS). An experimental index was recently developed by the BLS, and a modified CPI is expected by 1999. The portion attributed to "quality adjustment" is more in dispute.

Changes in the COLA to reflect the possible bias in the CPI may be made in two ways: (1) the COLA may be redefined as the increase in the CPI-W minus some specified percentage, like 0.5 percentage point or 1.1 percentage points, or (2) the CPI itself may be modified, with any change in the expected measured increase in the CPI automatically resulting in a similar change in the expected COLAs. These two approaches may have different implications for the projected financial status of the OASDI program.

1. Redefine the COLA as "CPI Minus X"

If the COLA for monthly OASDI benefits is redefined as the increase in the CPI-W less a specified percentage, the direct effect is clearly to make benefits progressively lower, as compared to present law, for each beneficiary as time passes (the beneficiary ages) after initial benefit eligibility. OASDI program savings accrue and substantial improvement in the long-range OASDI actuarial balance results. The table below indicates the extent of improvement in the actuarial balance and the projected trust fund exhaustion date for a range of possible changes in the COLA.

Projected Effects on Long-Range Financing
of the OASDI Program of Changes in the COLA
Effective December 1998.

Specified Level of COLA	Actuarial Balance	Change in Actuarial Balance	Year of OASDI Trust Fund Exhaustion
	(percentage of taxable payroll)		
CPI-W (PL)	-2.23%	--	2029
CPI - 0.25%	-1.85	0.37%	2032
CPI - 0.50%	-1.49	0.73	2035
CPI - 0.80%	-1.08	1.15	2041
CPI - 1.00%	-0.81	1.41	2046
CPI - 1.10%	-0.68	1.54	2050

The effects on the long-range financing of the OASDI program listed above represent the maximum possible **"net"** effects of a change in the specified calculation for the COLA. The net effect on the projected long-range actuarial balance might be smaller if other long-range assumptions used for the projections in the Annual Trustees Reports are also changed (see "Relationship Between CPI and GDP Price Measure").

2. **Reduce or Eliminate Bias in the CPI**

If the Bureau of Labor Statistics (BLS) makes further changes in the measurement of the CPI, the estimated reduction will result in improvement in the financial status of the OASDI program as illustrated in the table above, if the assumed future rates of growth in current-

dollar GDP and earnings are unaffected. As discussed below, this may be true only if the extent of bias in the CPI is essentially the same as that in the GDP price index. If the bias in the CPI is, in fact, more than 0.1 percentage point larger than the bias in the GDP price index, then recognizing this fact, en route to correcting the bias in the CPI would require a reduction in the assumed ultimate rates of growth in current-dollar GDP and wages, and in the real wage differential. In this case, the increases in the estimated size of the long-range OASDI actuarial deficit would partially offset the reductions indicated in the table above. Thus, net improvement in the financial status might be less than indicated above.

The balance of this memorandum describes the issue of bias in the CPI and in the GDP price index, as it relates to estimating the long-range financial effects of changes in the CPI/COLA.

Relationship Between CPI and GDP Price Measure

Any future change to either the CPI or the specified size of COLAs will almost certainly be based on a consensus that the CPI itself is indeed overstated, as currently measured. When such consensus is reached, either the Bureau of Labor Statistics will modify the computation of the CPI (as occurred in 1995 and 1996, and as suggested in (2) above), or the COLA may be modified in law the reflect measured (biased) increases in the CPI less some percentage (in the event that the BLS indicates that there is no sound basis quantifiable for computing the change, as suggested in (1) above). In either case, implications for the measure used to indicate price changes in goods and services for the gross domestic product (GDP) must be considered.

For Trustees Reports through the 1996 report, the ultimate rates of increase in the CPI and the GDP price index were assumed to be the same. For the 1997 report, it is assumed that the ultimate increase in prices measured by the CPI will average 0.1 percentage point higher than the average increase in prices as measured by the GDP price index. Assuming that the "actual" increase in price levels for the goods and services included in the CPI and the GDP will ultimately average about the same (this might not be the case because of different weights on various goods and services in these indexes[1]) this difference implies that the overstatement or "bias" in the **measured** price change in the CPI is expected to average 0.1 percentage point more than the bias that exists in the measured price change for the GDP.

The existence of a parallel bias in the GDP price index is clear because about one half of the data for computing the measured GDP price index is based on components of the CPI. Therefore, the minimum bias in the GDP price index is likely to be about one half of the bias in the measured CPI. One component of bias in the CPI identified as "upper-level

[1] It is not clear that the direct weights in the CPI versus those in the GDP should make a difference. For example, while computers, which have had little increase in price, are more heavily weighted in the GDP, the relative price drop in computers has presumably reduced the cost of production of consumer goods and services, thus slowing CPI growth indirectly.

substitution bias" (about 0.1 percentage point) does not apply to the GDP price index, due to its method of computation. Other identified biases, which are estimated by Boskin to amount to about 1.0 percentage point would flow through to about one half of the components of the GDP price index. This suggests a minimum bias of about 0.5 percentage point for the GDP price index.

The crucial question is "To what extent is there bias in the components of the GDP price index that are not quantified using the CPI. Telephone conversations with several economists indicate that rough estimates range from a belief that bias is just as great in the components of GDP that do not use the CPI as in the components that do use the CPI, to the belief that bias in components that do not use the CPI is somewhat less than half the CPI-level of bias, on average. This suggests a range of possible bias in the GDP price index of from 0.7 percentage point to 1.0 percentage points, assuming that the Boskin estimate of bias of 1.1 percentage point for the CPI is correct.

If, on the basis of further research, we conclude that bias in the GDP price index is, with the exception of upper level substitution bias, as large as in the CPI, then this finding will be consistent with the ultimate assumptions of the 1997 Trustees Report, where average annual change in the CPI is assumed to exceed the average annual change in the GDP price index by 0.1 percentage point. In this case, the maximum possible effects of a change in the CPI/COLA on long-range OASDI financing (see below) would be the appropriate estimate. If, on the other hand, we conclude that current bias in the GDP price index is a total of 0.4 percentage point less for the CPI (eg., 1.1 percent bias for the CPI and 0.7 percent bias for the GDP price index), then the ultimate assumption of the 1997 Trustees Report would need to be changed. Such change would imply a 0.3 percentage point reduction in the assumed ultimate real wage differential (see paragraph below), which would increase the size of the long-range OASDI actuarial deficit by about 0.33 percent of taxable payroll. This change would offset a portion of the maximum possible reduction in the long-range deficit for a change in the CPI/COLA. This observation is critical, assuming that any change in either measurement of the CPI or specification of the level of the COLA will be based on a consensus of belief about the level of bias in both the CPI and the GDP price index.

To see why an increase in the currently assumed difference between bias in the CPI and that in the GDP price index implies a reduction in the assumed real wage growth rate, consider the following. If the difference between the average level of current bias in the measured annual increases in the CPI and the GDP price index were assumed to be 0.4 percentage point, this would imply that the ultimate assumed measured rate of increase in the GDP price index should be 0.4 percentage point less than the measured rate for the CPI, or 0.3 percentage point less than is currently assumed for the GDP price index. Historical data, upon which analysis leading to the selection of future assumptions is based, is presumed to already reflect whatever level of actual bias currently exists. Therefore, the assumed future rate of growth in productivity (real output per hour) would not tend to be changed by the presumption of a larger difference in bias for the CPI relative to that for the GDP price index. This would imply a 0.3 percentage point reduction in the ultimate assumed rates of

growth in current-dollar GDP and earnings. With assumed current-dollar average earnings (wages) growing 0.3 percentage points slower and no change in the ultimate assumption for CPI, a 0.3 percentage point reduction in the real wage differential follows.

Finally, biases are not readily measured in historical data. The relationship between biases in the CPI and the GDP price index are even more elusive. Over the past 20 to 30 years increases in the CPI, after adjustment for corrections made in 1995 and 1995, have exceeded those of the GDP price index by about 0.2 percentage points. This does not appear to support an assumption that the actual difference in bias has been, and should be expected to be as high as 0.4 percentage points. Many additional factors may have had a different effect in the past than they might in the future, so the 0.4 percentage point assumption is certainly possible.

Stephen C. Goss

SOCIAL SECURITY

MEMORANDUM

Date: April 28, 1997 Refer To: TCC

To: Harry C. Ballantyne
Chief Actuary

From: Stephen C. Goss
Deputy Chief Actuary

Subject: Estimated Potential Long-Range OASDI Financial Effect of Modifications to the COLA--INFORMATION

The Social Security automatic cost-of-living adjustment for December of each year is based on the increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) from the average for the third calendar quarter of the prior year to the average for the third calendar quarter of the current year. Under the intermediate projections of the 1997 Trustees Report, the CPI-W is assumed to rise at an ultimate average rate of 3.5 percent per year.

As currently constructed, the CPI measures increases in prices using a fixed (but periodically updated, about every 10 years) marketbasket of goods and services. The final report (December 1996) on possibly bias in the CPI by the panel chaired by Michael Boskin, appointed by the Senate Finance Committee suggests that the CPI may overstate the annual increase in the "cost of living" by about 1.1 percentage points, on average. There is not at this time universal agreement that the estimate of a 1.1 percentage point bias is correct. The portion attributed to "substitution bias" is currently under study by the Bureau of Labor Statistics (BLS). An experimental index was recently developed by the BLS, and a modified CPI is expected by 1999. The portion attributed to "quality adjustment" is more in dispute.

Changes in the COLA to reflect the possible bias in the CPI may be made in two ways: (1) the COLA may be redefined as the increase in the CPI-W minus some specified percentage, like 0.5 percentage point or 1.1 percentage points, or (2) the CPI itself may be modified, with any change in the expected measured increase in the CPI automatically resulting in a similar change in the COLA.

The Bureau of Labor Statistics (BLS)has been studying areas of possible bias in the Consumer Price Index (CPI) and has moved toward correcting these biases. Changes in the formula for computing price changes were implemented in January 1995 and again in June 1996. The BLS is now announcing the development of a new experimental index, the CPI-U-XG, in order to study the possibility of eliminating "lower-level substitution bias".

Both the CPI-U and the CPI-W currently compute price change within each of over 9,000 specific categories of goods and services based on the arithmetic mean (arithmetic weighting) of changes in the prices of various items within the category. This approach is consistent with the assumption that consumers do not change their buying habits when different items (brands) within a category increase in price at different rates. The new experimental index will compute price change within categories based on the geometric mean (or geometric weighting) of changes in items within the categories. This approach is consistent with the assumption that all items within a category are, to some extent, substitutes for one another, and that consumers will shift their purchases somewhat from items that are rising faster in price to other items that are rising slower in price, within the same category.

Recalculating the CPI-U by applying this geometric weighting to all categories of goods and services in the CPI results in average price increases that are lower by 0.37 percent per year between December 1990 and December 1994, and by 0.28 percent per year between December 1994 and February 1997, according to the BLS. The BLS estimates that application of this modification to all components of the CPI in the future would reduce measured price change by about 0.25 percent per year, for both the CPI-U and the CPI-W.

The BLS plans to maintain and study the new experimental CPI-U-XG index with the expectation that this modification will be applied to some of the categories used in computing the CPI indexes by January 1999. This study is intended to determine which categories include items that are sufficiently substitutable one for another that the geometric weighting is more appropriate. It is not clear at this time for what proportion of the categories change to the geometric weighting will be found appropriate.

If, as an upper bound, the new geometric weighting approach were to be applied to all categories in the CPI-W beginning January 1999, then the December 1999 Social Security cost of living adjustment (COLA) would be reduced by about 0.2 percentage point and the COLAs for December 2000 and later would be reduced by about 0.25 percentage point, on average.

Maximum Effect on Social Security COLAs
If Geometric Weighting Is Applied for the All
Categories of the CPI-W Beginning January 1999

Year	December COLA with No Change in CPI	December COLA with All CPI Categories Changed to Geometric Weighting
1999	3.4%	3.2%
2000	3.5	3.2
2001	3.7	3.5
2002	3.9	3.6
2003	4.0	3.8
2004	4.0	3.7*

* After 2004, COLAs would average 4.0 percent with no change in CPI and 3.75 percent with change in all categories. Based on intermediate assumptions of the 1996 Trustees Report, assuming that nominal GDP, wage, and interest-rate assumptions would be unaffected.

The change in COLAs indicated above, assuming that ***all*** CPI categories would be changed to geometric weighting and that nominal GDP, wage, and interest-rate assumptions would be unaffected, would improve the long-range OASDI actuarial balance by an estimated 0.36 percent of taxable payroll. However, this is the maximum possible effect. The fact that the BLS indicates that it is unlikely that all categories will be changed to geometric weighting in 1999, and the likelihood that changes in the assumed rate of change in the CPI will have implications for other assumptions, means that the actual improvement in the actuarial balance likely will be smaller.

Stephen C. Goss

SOCIAL SECURITY

MEMORANDUM

Date: May 24, 1996 Refer To: S3NL

To: Harry C. Ballantyne
Chief Actuary

From: Stephen C. Goss
Deputy Chief Actuary

Subject: Estimated Long-Range OASDI Financial Effect of Eliminating the OASDI Contribution and Benefit Base--INFORMATION

The contribution and benefit base for Social Security (OASDI) is $62,700 for earnings in 1996, and will be indexed to increases in the level of the average annual wage as measured by the SSA average wage index (AWI). This base sets the maximum annual amount of earnings that is subject to payroll tax liability and the maximum amount that is creditable for the purposes of benefit computation.

Eliminating the base would result in a substantial increase in payroll tax liability for workers with earnings above the present-law base. If the additional earnings subject to payroll tax are also credited for the purpose of computing OASDI monthly benefit amounts, then the present value of the additional tax would be partially offset by the present value the expected additional benefits. However, the value of additional benefits would only partially offset the value of additional taxes because workers with earnings above the present-law base in any year generally will have relatively high career-average earnings levels, and because of the progressive OASDI benefit formula.

The balance of this memorandum provides estimated long-range OASDI financial effects of eliminating the base for 1997 and later, and considers the extent to which payroll tax rates could be lowered to offset these effects.

Eliminate Base for Tax Liability and Benefit Computation

Eliminating the OASDI benefit and contribution base both for the purpose of computing payroll tax liability and for providing earnings credits toward OASDI benefit computation for earnings above the present-law base, beginning in 1997 would reduce the long-range OASDI actuarial

deficit by about 1.42 percent of taxable payroll, from an estimated deficit of 2.17 percent of taxable payroll under current law to a deficit of 0.75 percent of taxable payroll.

The extent to which payroll tax rates could be reduced so as to offset the effect of eliminating the base, as described above, has two possible answers. The first would yield a long-range actuarial balance, including the effects of both the base elimination and the tax rate reduction, that is equal to the balance under present law. A reduction in the combined employee and employer payroll tax rate of about 1.45 percent (with the same reduction for the self employed) would about offset the effect on the actuarial balance of this change in the benefit and contribution base. Thus, an estimated OASDI actuarial deficit of about 2.17 percent of taxable payroll would result if both the base were eliminated (for both payroll tax liability and benefit computation) and the combined payroll tax rate were lowered by 1.45 percent in 1997. However, because the taxable payroll would be considerably larger (by about 16 percent) under this proposal, a deficit of 2.17 percent of this larger payroll would represent a larger dollar amount of deficit than does the 2.17 percent of payroll deficit under present law. The dollar amount of the deficit under this proposal would be about 16 percent larger than the dollar amount under present law.

The second approach to providing a tax rate reduction that would offset this elimination of the base would be to select the tax rate reduction that would, in combination with the base elimination, result in a long-range actuarial deficit that would be comparable to the dollar amount of the present law deficit. A reduction in the combined OASDI payroll tax rate of about 1.25 percent in 1997 would provide this result.

Eliminate Base Only for Tax Liability

Eliminating the OASDI benefit and contribution base only for the purpose of computing payroll tax liability (i.e., without providing earnings credits toward OASDI benefit computation for earnings above the present-law base) beginning in 1997 would reduce the long-range OASDI actuarial deficit by about 1.95 percent of taxable payroll, from an estimated deficit of 2.17 percent of taxable payroll under current law to a deficit of 0.23 percent of taxable payroll. The larger reduction in the actuarial deficit occurs because no offsetting increase in benefits would be provided for those who had higher tax liability under this proposal.

The extent to which payroll tax rates could be reduced so as to offset the effect of eliminating the base, as described above, has two possible answers. The first would yield a long-range actuarial balance, with the effects of both the limited base elimination and the tax rate reduction, that is equal to the balance under present law. A reduction in the combined employee and employer payroll tax rate of about 2.00 percent (with the same reduction for the self employed) would about offset the effect on the actuarial balance of this limited change in the benefit and contribution base. Thus, an estimated OASDI actuarial deficit of about 2.17 percent of taxable payroll would result if both the base were eliminated (for payroll tax liability purposes only) and the combined payroll tax rate were lowered by 2.00 percent in 1997. However, because the

taxable payroll would be considerably larger (by about 16 percent) under this proposal, a deficit of 2.17 percent of this larger payroll would represent a larger dollar amount of deficit than does the 2.17 percent of payroll deficit under present law. The dollar amount of the deficit under the proposal would be about 16 percent larger than the dollar amount under present law.

The second approach to providing a tax rate reduction that would offset the limited elimination of the base would be to select the tax rate reduction that would, in combination with the base elimination, result in a long-range actuarial deficit that would be comparable to the dollar amount of the present law deficit. A reduction in the combined OASDI payroll tax rate of about 1.7 percent in 1997 would provide this result.

The estimates described above are based on the intermediate (alternative II) assumptions of the 1995 Trustees Report. In addition, the estimates of the change in the amount of earnings that would be taxable reflect the assumption that the amount of earnings currently estimated above the benefit and contribution base would diminish as a result of eliminating the base. This would occur because of the ability of many workers to modify the form of their compensation depending upon the marginal tax rates to which the earnings are subjected.

Stephen C. Goss