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THE IMPACT OF ALTERNATIVE INFLATION
ADJUSTMENTS

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Working Paper No. 212

NATIONAL BUREAU OF ECONOMIC RESEARCH, Inc.
1737 Cambridge Street
Cambridge, Massachusetts 02138

November 1977

This paper has not undergone the review
accorded official NBER publications; in
particular, it has not been submitted
for approval by the Board of Directors.

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The distribution of wealth is one of the most important and least studied features of our economic life. A lack of good data on household wealth is the primary reason for the inadequate attention to this subject. Moreover, the evidence that is available from household surveys and estate records excludes the most important asset of the vast majority of households: the value of future social security benefits.¹ The purpose of the current paper is to present evidence on the distribution of social security wealth and to use these estimates to analyze the impact of alternative methods of adjusting future benefits for changes in the price level.

*Harvard University and the National Bureau of Economic Research. This study is part of the program of research on social insurance of the National Bureau of Economic Research. We are grateful to the National Science Foundation for financial support and to Michael Boskin, Michael Darby and William Hsiao for useful comments. The paper has not been reviewed by the Board of Directors of the NBER.

¹See Smith (1975), Part IV, for several recent contributions to the study of the distribution of wealth.

Social security wealth is defined as the actuarial present value of the social security benefits to which an individual becomes entitled at age 65.¹ The sum of ordinary (fungible) wealth and social security wealth is equal to the value of the retirement annuity that an individual could buy at any time. Equivalently, this sum equals the present value of the consumption in the retirement years after age 65 that would be possible if the individual did no future saving.² For the current paper, we are interested in social security wealth as part of an accurate description of an individual's total wealth and will not explore any of the implications of social security wealth for savings behavior. One plausible implication that we have examined elsewhere (Feldstein and Pellechio, 1977) is that social security wealth induces households to reduce their accumulation of other wealth by an equal amount; if this is correct, the total wealth distribution that could be estimated by adding fungible wealth and social security wealth is also the distribution of ordinary fungible wealth that would have existed in the absence of social security.³

¹The idea of social security wealth was introduced in Feldstein (1974); a more detailed description of its construction is presented in section 1 of the current paper.

²Note that we do not subtract future social security taxes. The current measure of social security wealth plus ordinary fungible wealth plus human capital (based on labor income net of tax) represents the lifetime budget constraint.

³The extent to which social security wealth displaces ordinary wealth is a controversial issue; see Barro (1976), Darby (1977), Feldstein (1976b), Kotlikoff (1977), and Munnell (1976) for recent evidence and discussions of earlier evidence.

The present study is an extension of earlier research on the distribution of social security wealth discussed in Feldstein (1976a). That study was based on the 1963 Federal Reserve Board Survey of Consumer Finances (Projector and Weiss, 1966), which provided survey data on the income and fungible assets of approximately 2,000 households with a heavy oversampling of high income households. Although these data probably provide the best information on the distribution of fungible wealth, the basis for estimating social security wealth was very limited.¹ In contrast, the current study uses a new source of data that permits a very accurate calculation of social security wealth; the precise nature of the data and the estimation method are described in the next section.

The focus of this paper is exclusively on social security wealth. Studies of the wealth distribution could, of course, be extended in a number of other ways. Some of these, such as including the value of private pensions and of other social insurance benefits, would be useful but are much smaller than social security wealth. Other extensions to include human capital, anticipated taxes, and anticipated intergenerational transfers might be useful in some contexts but would blur the basic distinction between wealth and

¹Social security wealth was estimated on the basis of current earnings, age, and marital status; no information on the earnings history was available. The assumption about future benefits was also quite crude. The method is described in detail in Feldstein (1976a).

income that makes the study of wealth a subject of independent value.

It is now widely argued that the social security law (as of 1977) contains a serious technical error that requires legislative correction. More specifically, the current law adjusts benefits and taxable wages in response to inflation in a way that is accurately described as "over-indexed": an increase in the price level causes a more than proportionate increase in social security benefits.¹ In 1976, the Ford Administration proposed a method of price adjustment that has become known as wage indexing; according to this proposal, the tax and benefit schedules are adjusted for changes in the average level of nominal wages. This method has the effect of keeping the ratio of benefits to previous earnings unchanged at each relative earnings level. The wage indexing method has since been proposed by the Carter Administration and by the key Senate and House committees. The analysis of this paper therefore focuses on social security wealth under the assumption that the method of wage indexing is adopted.

An alternative method of adjusting was proposed by a panel of consultants appointed by the Congress and chaired by William Hsiao (Consultant Panel on Social Security, 1976).

¹See Congressional Budget Office (1977) for a clear description of this problem.

The Hsiao proposal calls for adjusting the tax and benefit schedules on the basis of changes in the price level and is therefore known as price indexing. The price indexing method would have substantial long-run advantages for the economy.¹ It is therefore worthwhile to analyze the implication of this major alternative for the total value and the distribution of social security wealth. Our analysis of price indexing (in section 4) suggests the reason that it lacks the political support that it deserves on long-run economic grounds.

¹These are discussed in Feldstein (1977) and Congressional Budget Office (1977) as well as in the Consultant Panel report.

1. Data and Method of Estimation

The data used in this study are a unique combination of household survey information combined with Social Security Administration records for the same individuals (Scheuren et al., 1975). The file is based on the March 1973 Current Population Survey. The Social Security Administration has matched summary information from its records with the survey information.

Our sample contains all such persons aged 25 years and over whose CPS and SSA records are properly matched and who are covered by the social security program. There are 61,327 persons, consisting of 23,529 married couples and 14,269 single individuals. We treat couples and single individuals as units of analysis; the sample thus contains 37,798 potential household observations. To reduce computation costs, we have used a sample of 10,000 observations. The sampling weights permit the extrapolation of our results to the entire population.

Our analysis estimates the social security wealth as of the end of 1972 for each household (i.e., couple or single individual) in the sample). Recall that this social security wealth is the value of the benefits for which the couple or individual will be eligible at age 65. These benefits are calculated on the assumption that the current (1977) method of double-indexing benefits for inflation will

be replaced by the wage indexing method proposed by the Carter and Ford Administrations.

A number of assumptions make our estimates an understatement of the total value of future social security benefits. We focus exclusively on the retirement benefits of the worker and, when appropriate, the dependent or survivor benefits of his spouse. We exclude completely the value of benefits going to surviving children and the value of disability benefits; these now amount to 30 percent of the retirement and survivor benefits that we include. We ignore the opportunity for early retirement; although there is in principle an actuarial reduction of benefits, the opportunity for self selection conveys an advantage. We also do not consider the benefits provided under the Supplemental Security Income program. Finally, we ignore workers under the age of 25 because of the difficulty of estimating their future incomes.

The calculations assume that the consumer price level rises in the future at 4 percent per year. Because of productivity growth, real wages rise at 1.75 percent. Future benefits are discounted to the present with a real discount rate of 3 percent; this is equivalent to assuming a 7 percent after-tax rate of return when the inflation rate is 4 percent.¹ Because the double indexing is assumed to be

¹This real rate of interest is higher than households have obtained for the past 25 years. This again causes our estimate of social security wealth to be an underestimate. The appendix presents estimates based on a real discount rate of one percent.

removed, the choice of a 4 percent inflation rate is of little consequence; the real growth of benefits and the real social security wealth are essentially unchanged if a different inflation rate is assumed.

An example will illustrate the logic of our calculation of social security wealth. Readers who are not interested in the precise method may skip to the beginning of section 2 without loss of continuity. Consider a single working man who was less than 65 years old at the end of 1972. The social security administrative record indicates his average monthly covered earnings between 1951 and 1972, together with information about the years in which he did not have covered earnings. The first step in our calculation is to estimate covered earnings in each previous year subject to his given overall average and to the assumed maxima implied by the social security law. The basic assumption of the interpolation used to obtain the individual earnings is that wages grow at an exponential rate. Each individual's growth rate is determined to satisfy the known 1972 earnings and the average for the period. The individual's earnings are then extrapolated into the future by the assumption that his 1972 wage will grow at the same rate as all other wages (i.e., 5.75 percent).

This provides the earnings record for all of the relevant years of his working life, say W_{it} for individual i in year t . This is converted into an indexed wage by dividing each

For married couples, the calculation is more complex because (1) an extra benefit is available if the retiree has a dependent spouse, (2) a surviving spouse is entitled to a benefit, but (3) if the wife has an earnings record, she may choose to receive her own benefits as a retired worker. Our computer program makes all of the correct choices for the family on the assumption that, if there is a working wife, she will choose to retire when her husband reaches age 65.

We recognize that these calculations might be significantly improved as more information becomes available. We nevertheless believe that the current information can provide a useful basis for analysis.

W_{it} by the overall average covered monthly earnings in that year (W_{ot}); individual i 's indexed wage is thus W_{it}/W_{ot} . A simple average over the relevant number of working years provides a normalized averaged monthly earnings (NAME) that is the basis of the benefit calculation.

The NAME for a worker who has always had the average earnings will be 1. The principle of wage indexing makes the ratio of the retiree's benefit at age 65 to average covered earnings in that year a function of his NAME. A specific table indicates the benefit ratio for each NAME.¹ Our calculation uses the NAME to calculate this benefit ratio and thus the dollar benefit at the time of retirement. Benefits after retirement are increased at the rate of consumer price inflation.²

This procedure yields the stream of benefits that the individual will collect at each age after 65 if he is alive. We find the actuarial discounted value of these benefits as of 1972 by using the 1970 Census Bureau Actuarial Tables to calculate the probability of survival and then discounting future benefits at a nominal rate of 7 percent.

¹For values of NAME up to 0.28, the benefit ratio is 0.80; for the next amount of earnings between NAME = 0.28 and NAME = 0.84, the marginal benefit ratio is 0.35; above that value of NAME, the marginal benefit ratio is 0.25. This implies, for example, that a retiree with a NAME of 0.84 receives initial benefits of 50 percent of the product of NAME and the average earnings in the year of his retirement.

²This method of describing the benefit calculation may appear different from the legislative proposal but is actually computationally equivalent.

2. Basic Estimates of Social Security Wealth

Our method of estimation implies that the social security wealth of the population in 1972 was \$1.85 trillion, approximately twice the 1972 national income of \$952 billion. Social security wealth was nearly as large as the 1972 total financial net worth of the household sector, \$2.4 trillion. Even the most inclusive traditional measure of household sector wealth¹ was \$4.0 trillion, about twice the size of our estimate of social security wealth. By any standard, the value of social security wealth is of major significance in describing the total wealth of the population.

Although our detailed evidence is only available for 1972, it is useful to have even a rough estimate of a more current value. We have made such an estimate on the conservative assumption that social security wealth grew at the same rate as national income. By the end of the current (1978) fiscal year, social security wealth will reach \$3.4 trillion.

As we emphasized above, even these astoundingly large figures are likely to be a substantial understatement of social security wealth. Our estimates deal only with the population over age 25, thus omitting a substantial fraction of the current and future labor force. Our benefits exclude

¹This total net worth includes the value of consumer durables and the assets of nonprofit organizations.

payments for disability and dependent children, which together account for more than 30 percent of the basic benefits for retirees and surviving spouses. At every point in our calculation, we have chosen the assumption that would understate rather than overstate social security wealth.

Table 1 shows the distribution of the 1972 social security wealth by income and age. Each couple or single individual is classified by total income in 1972 (excluding social security benefits) and by the age of individual or, in the case of couples, by the age of the man.

The most interesting feature of Table 1 is the very small fraction of the social security wealth that is accounted for by higher income families.¹ Only 8.3 percent of total social security wealth belongs to families with incomes over \$25,000. Approximately half of social security wealth is accounted for by families with incomes over the 1972 median of \$11,000.

Since the incomes of retirees and of young workers are misleading as indicators of their lifetime income positions, it is useful to look at families in which the head is between the ages of 35 and 64. A summary for this age group is presented in the final column of Table 1. Even for this restricted group, only 11 percent of social security wealth

¹We use the term "family" to refer to both couples and single individuals except where something else is explicitly stated.

is accounted for by the families with incomes over \$25,000 and 39 percent by families with incomes of \$15,000.

This contrasts sharply with the well documented concentration of ordinary fungible wealth. Although exact data on the wealth distribution for 1973 are not available, some useful inferences can be made on the basis of 1962-63 Federal Reserve Board Survey of Consumer Finances (Projector and Weiss, 1966). In an earlier study, Feldstein (1976a) estimated that, among households in which the head was between 35 and 64 years old, 63 percent of fungible wealth belonged to households with incomes over \$10,000 and 44 percent to households with incomes over \$15,000. Since per capita personal incomes increased by slightly less than 100 percent between 1962 and 1972, it is reasonable to assume that by 1973, families with incomes over \$25,000 had between 44 and 63 percent of the wealth of their age cohort. This compares to the mere 11 percent of social security wealth shown in the last column of Table 1. Stating the same thing in a different way, the income group that has only about 50 percent of fungible wealth has more than 90 percent of social security wealth.¹

¹Similarly, the 1962 data indicate that families with 1962 incomes under \$7,500 had 25 percent of fungible wealth. If we therefore infer that by 1972 families with incomes under \$15,000 had 24 percent of fungible wealth, this can be compared with the 65 percent of social security wealth shown in the last column of Table 1.

TABLE 1

DISTRIBUTION OF SOCIAL SECURITY WEALTH
(Percentages of Total Social Security Wealth)

Income	Age					All	35-64
	25-34	35-44	45-54	55-64	65+		
< \$3,000	0.6	0.7	1.1	3.4	17.7	23.4	8.8
\$3,000-	0.8	0.7	1.2	1.5	1.4	5.7	5.8
\$6,000-	2.4	1.8	2.2	2.8	1.0	10.1	11.4
\$9,000-	4.0	3.2	4.3	4.1	1.0	16.6	19.7
\$12,000-	3.6	3.1	3.4	2.9	0.5	13.6	15.9
\$15,000-	4.9	5.8	6.0	4.5	0.9	22.2	27.7
\$25,000-	1.0	1.6	2.5	2.2	0.9	8.3	10.8
All	17.4	17.0	20.7	21.5	23.3	100.0	100.0

All figures relate to the distribution of 1972 social security wealth of \$1.847 trillion.

The distribution of social security wealth can be examined in a different way by studying the average dollar value of social security wealth at each age and income level. The basic figures for this analysis are presented in Table 2. The average individual or couple had \$28,093 of social security wealth at the end of 1972. The most important feature of the distribution is that benefits rise so little with income. This is best seen by focusing on the group aged 35 to 64 to avoid the distortion due to the high wealth and low income of the aged. For this group, social security wealth per household shows almost no increase with income over \$9,000. Even those with incomes under \$3,000 have social security wealth of nearly \$18,000, or more than half the social security wealth of those with incomes over \$25,000.

Separate figures are shown for each age group. A common feature is that, in each age group, there is little effect of income over \$9,000 on social security wealth. It is interesting also that, in the group up to age 54, the highest income class actually has slightly lower social security wealth than the group with incomes between \$15,000 and \$25,000.

TABLE 2

SOCIAL SECURITY WEALTH PER FAMILY

Income	Age of Head						All	35-64
	25-34	35-44	45-54	55-64	65+			
< \$3,000	\$8,610	\$11,762	\$13,017	\$23,498	\$28,693	\$24,159	\$18,075	
\$3,000-	12,262	14,301	18,541	23,909	33,657	19,695	19,266	
\$6,000-	18,156	20,357	23,800	32,643	38,105	23,983	25,520	
\$9,000-	23,824	27,276	32,129	39,251	43,610	30,291	32,604	
\$12,000-	25,886	28,287	33,584	42,907	44,143	31,478	33,763	
\$15,000-	26,830	32,011	35,822	42,649	44,830	33,658	35,876	
\$25,000+	25,097	29,468	35,403	43,141	45,462	34,830	35,803	
All	\$21,726	\$25,691	\$28,978	\$34,403	\$30,823	\$28,093	\$29,585	

All dollar amounts refer to 1972. See text for definition and methods.
Families are either couples or single individuals.

3. Social Security Wealth Net of Future Taxes

Social security wealth is the actuarial present value of the benefits to which individuals are entitled at age 65. The sum of an individual's social security wealth and his ordinary fungible wealth is thus the present value of the total resources that would be available for retirement consumption if the individual did no further saving out of other income.¹ The social security wealth analyzed in the previous section is therefore the relevant variable to compare to the distribution of fungible wealth.

There is, however, a different concept of social security wealth, net of future social security taxes, that may be relevant for discussing other issues. For a person who has reached age 65 and is ready to retire, there is no difference between the gross social security wealth of section 3 and the current section's net social security wealth. For a younger individual, net social security wealth can be considerably less than the gross value.

There is of course substantial debate about the tax rates that will be levied in future years. Our strategy is to assume that the maximum taxable wage level will rise at the same rate as the average wage and that the tax rate will then be set in each year to make the year's total tax revenue

¹That is, if the individual's saving in each future year until age 65 equaled the income from his fungible wealth.

equal the year's total benefit outlay.¹ The resulting tax rate rises from 10.7 percent in 1980 to 12.4 percent in 2000 and 14.9 percent in 2015.

The net social security value--i.e., the value of social security wealth net of the present value of the individual's future social security tax--measures the value to the individual of the continued existence of the social security program. If the program were abolished, he would lose the future benefits but would also avoid the future taxes. While eliminating social security is not a relevant policy option, the estimates of net social security wealth shows who gains and who loses from the continuation of the current program and from the adoption of alternative benefit and tax rules.²

Note that an individual's net social security wealth does not measure the lifetime subsidy that he receives from the social security program. It is equal instead to that subsidy plus the value of the taxes that he has already paid. For the entire population over age 25, the net social security wealth represents the present value of the net intergenerational transfer to it that is yet to take place. In different words, the total net social security wealth of the cohort over age 25 is the value of the transfers that they will

¹The calculations used to derive this tax rate assume fertility rates of 1.6 in 1980, 1.8 in 1990, 1.9 in 2000 and 2.1 in 2025 and thereafter. A different assumption about the maximum taxable earnings is developed in the next section when price indexing is discussed.

²There are of course the further gains and losses that arise to the extent that social security reduces the capital stock and thus changes factor incomes. These are ignored in the current calculations.

receive from those who are currently under 25 or yet unborn.

At the end of 1972, the total value of this net social security wealth was \$1.06 trillion, or 57 percent of the gross social security wealth. By the same extrapolation as before, this implies a net social security wealth of \$2.0 trillion by the end of the current (1978) fiscal year. The distribution of net social security wealth is shown in Table 3.

The striking feature of Table 3 is that net social security wealth is actually negative for families aged 25 to 34. These individuals and couples can expect to pay more in social security taxes than they receive in benefits (when both are discounted to their present value). Note that this is true at every income level over \$6,000. Since these individuals have already paid considerable taxes, this represents a substantial understatement of their net lifetime loss because of the social security program.

The negative net social security wealth of young families has an important implication about the future social security program. If the current relation between benefits and taxes were to remain unchanged, each new generation would find that its initial net social security wealth was negative. That is, each generation would pay taxes with a greater present value than the benefits it received. Moreover, the demographic developments over the next 50 years

TABLE 3
 SOCIAL SECURITY WEALTH NET OF FUTURE TAXES
 (Net Social Security Wealth per Family)

Income	Age of Head						All	35-64
	25-34	35-44	45-54	55-64	65+	All		
< \$3,000	\$1,299	\$6,549	\$9,357	\$22,197	\$28,608	\$22,778	\$15,298	
\$3,000-	1,153	5,512	13,487	22,299	33,633	14,043	14,387	
\$6,000-	-1,066	6,122	15,320	29,965	37,987	12,643	17,030	
\$9,000-	-2,784	6,676	20,692	34,906	43,373	13,935	20,194	
\$12,000-	-3,373	5,966	20,250	37,879	43,563	12,319	18,918	
\$15,000-	-4,421	5,834	20,468	36,898	44,431	12,931	18,404	
\$25,000+	-2,470	6,819	20,566	37,654	45,072	19,292	21,247	
All	-\$2,280	\$6,164	\$17,889	\$30,867	\$30,713	\$16,175	\$18,061	

All dollar amounts refer to 1972. See text for definition and methods.
 Families are either couples or single individuals.

will make the situation even worse than Table 3 suggests. Because the number of retirees will grow more rapidly than the number of workers, the ratio of taxes to wages must rise relative to the ratio of benefits to wages. This in turn means that the net social security wealth of each new generation will be even more negative.

The net social security wealth has potentially important political implications for the social security program. Anyone with a negative net social security wealth could gain from a contraction of the social security program. There are now some 150 million adults of voting age in the United States. Of these, approximately 50 million have negative net social security wealth.¹ The older groups have positive net social security wealth because they are closer to receiving benefits and have fewer taxpaying years left. Although each generation may lose over its lifetime because of the social security program, the distribution of net social security wealth is currently capable of maintaining and expanding the social security program. However, the changing demographic structure will increase the fraction of the population with negative net social security wealth and could thereby weaken the political support of the program. If, for example, net social security wealth only became positive at age 45, a majority of the voting age popu-

¹These include the 18 to 24 year olds who are not reflected in Table 3.

lation would have negative net social security wealth. The changing demography and the resulting deterioration of the tax-benefit ratio therefore poses a serious threat to the ability of the program to go on paying the promised benefits in the future.¹

¹A more detailed analysis of who would gain and who would lose under alternative assumptions about the future could make the ideas of this paragraph more precise and operational.

4. A Price Indexed Program for Social Security

Until now we have assumed that the "overindexing" of the existing law will be remedied by adopting a system known as wage indexing. The basic characteristic of wage indexing is that it makes the retiree's replacement rate (i.e., the ratio of benefits to the preretirement wage level) depend on his relative income. For example, a retiree in 1976 who has always had median earnings received a basic benefit equal to 43 percent of his immediate preretirement earnings; with wage indexing, workers with median earnings would continue to have a 43 percent replacement rate when they retire.

The method of wage indexing has several very unfortunate implications.¹ The first and most obvious of these is the very substantial increase in the tax rate that would be required as the ratio of retirees to workers rises. According to official estimates of the Social Security Administration, the current social security payroll tax of 9.9 percent (excluding hospital insurance) would have to rise under wage indexing to 12.4 percent in the year 2000 and to 18.8 percent in the year 2050. Adding such high payroll tax rates to existing income taxes could produce substantial distortions in labor supply.

¹These adverse effects are discussed more extensively in Feldstein (1977). See also Congressional Budget Office (1977).

Second, wage indexing based on the current replacement rate schedule produces some extremely high replacement rates, distorting retirement decisions and depressing saving. For example, while a single worker with median earnings now gets 43 percent of his immediate preretirement wage, if he is married he can get 150 percent of this basic benefit. The married retiree with median earnings thus receives 65 percent of his preretirement income. Since this benefit is untaxed, it is really equivalent to a replacement of 80 percent or more of net earnings. A worker who is not far below the median can thus obtain an effective replacement rate of more than 100 percent. Such high replacement rates are a strong incentive to retire at 65 or earlier. They also eliminate the reason for substantial retirement saving, either directly or through private saving.

These problems with the wage indexing method prompted the Social Security Advisory Panel directed by William Hsiao to propose an alternative method that is commonly referred to as price indexing. The distinguishing characteristic of the performance of price indexing is that it makes the individual's replacement rate depend on his real income rather than his relative income. As real incomes rise over time, the average replacement rate would fall; social security benefits would grow with time but less rapidly than income. This reduced rate of growth of social security bene-

fits would permit a slower rate of growth of taxes. The tax rate required to finance the benefits implied by the Hsiao proposal would be only 10 percent in the year 2000 and 11.3 percent in the year 2050. The lower replacement rates would also reduce the adverse distortions in retirement and saving behavior.

Table 4 shows the tax rates and maximum taxable earnings under price and wage indexing for selected years. Note that the total tax revenue in future years is lower under price indexing both because of the lower tax rate and the lower maximum taxable earnings.¹

It is clear from the difference between the required tax rates--19 percent for wage indexing and 11 percent for price indexing--that price indexing would be substantially better for the welfare of the population that reaches maturity in the next century and beyond. Moreover, the analysis presented below shows that the choice between the two indexing mechanisms has relatively little effect on the social security wealth of the current population over age 25.

¹The basic mechanics of price indexing are similar to the wage indexing system described in section 2 but with a price index used instead of a wage index. Thus the maximum taxable earnings grows each year at the rate of inflation instead of at the (generally higher) rate of nominal wage increase. Similarly, the tax payments are converted to dollars of the retirement year by a price index and the replacement rate table is increased for the growth of prices. The nonlinearity of the benefit schedule causes this to lower the average replacement ratio.

TABLE 4

TAX RATES AND TAX BASE WITH WAGE AND PRICE INDEXING

Year	Tax Rate		Maximum Taxable Wages	
	Wage Index	Price Index	Wage Index	Price Index
1980	10.7	10.6	\$19,513	\$18,560
1985	11.2	10.5	25,806	22,581
1990	11.8	10.5	34,129	27,474
1995	12.0	10.0	45,137	33,426
2000	12.4	10.0	59,694	40,668
2005	12.9	10.0	78,946	48,478
2010	13.4	10.0	104,408	60,198
2015	14.9	10.7	138,081	73,240
--	--	--	--	--
2025	17.7	12.0	241,511	108,413
2035	18.9	12.2	422,415	160,477
2045	18.9	11.6	738,827	237,545

Dollar amounts are in the prices of each year; an inflation of 4 percent is assumed.

TABLE 5

EFFECT OF PRICE INDEXING ON SOCIAL SECURITY WEALTH PER FAMILY

Social Security Wealth per Household: Wage Indexing (W) and Price Indexing (P)

Income	Age					
	25-34	35-44	45-54	55-64	65+	All
< \$3,000						
W	\$8,610	\$11,762	\$13,017	\$23,498	\$28,693	\$24,159
P	6,148	8,717	10,426	20,309	26,701	21,010
\$3,000-						
W	12,262	14,301	18,541	23,909	33,657	19,695
P	8,243	10,432	14,829	21,779	32,528	16,610
\$6,000-						
W	18,156	20,357	23,800	32,643	38,105	23,983
P	12,142	14,726	19,055	29,511	36,217	19,159
\$9,000-						
W	23,824	27,276	32,129	39,251	43,610	30,291
P	15,862	19,861	25,856	34,975	42,331	23,819
\$12,000-						
W	25,886	28,287	33,584	42,907	44,143	31,478
P	17,199	20,655	26,902	38,423	42,709	24,388
\$15,000-						
W	26,830	32,011	35,822	42,649	44,830	33,658
P	17,869	23,265	28,629	38,397	43,791	26,216
\$25,000+						
W	25,097	29,468	35,403	43,141	45,462	34,830
P	16,632	21,441	28,307	38,681	44,524	28,379
All						
W	21,726	25,691	28,978	34,403	30,823	28,093
P	14,509	18,707	23,213	30,724	28,965	22,965

All dollar amounts refer to 1972. See text for definition and methods. Families are either couples or single individuals.

This is true of both the gross social security wealth and the net social security wealth. Unfortunately, our analysis also shows why the wage indexing is likely to be chosen by the political process: at every age and income level, the net social security wealth is higher with wage indexing than with price indexing. This difference reflects the fact that wage indexing is designed to achieve a greater transfer from the next generation than price indexing. Let us now examine this evidence more explicitly.

Table 5 compares the gross social security wealth per family (i.e., couple or single individual) under the two methods of indexing. The average wealth of \$28,093 under wage indexing is reduced by less than one-fifth to \$22,965. The extent of the reduction varies by age group, with the greatest differences for the young. But even for this group, the difference in the present value of benefits is about one-third. Although we cannot now produce a full analysis of this issue, we believe that the loss in benefits associated with using price indexing would be small relative to the permanent gains for all future generations that would thereby be achieved.

Table 6 shows why price indexing is nevertheless unlikely to be adopted: for every age and income group, the use of price indexing rather than wage indexing reduces the implied transfer from the next generation and therefore de-

TABLE 6

EFFECT OF PRICE INDEXING ON SOCIAL SECURITY WEALTH NET OF FUTURE TAXES

Net Social Security Wealth per Family: Wage Indexing (W) and Price Indexing (P)	Age					
	25-34	35-44	45-54	55-64	65+	All
Income						
< \$3,000						
W	\$1,299	\$6,549	\$9,357	\$22,197	\$28,608	\$22,778
P	-346	3,877	6,893	19,039	26,618	20,555
\$3,000-						
W	1,153	5,512	13,487	22,299	33,633	14,043
P	-1,679	2,291	9,933	20,176	32,505	11,390
\$6,000-						
W	-1,066	6,122	15,320	29,965	37,987	12,643
P	-5,002	1,562	10,849	26,842	36,100	8,750
\$9,000-						
W	-2,784	6,676	20,692	34,906	43,373	13,935
P	-7,602	833	14,773	30,656	43,098	8,869
\$12,000-						
W	-3,373	5,966	20,250	37,879	43,563	12,319
P	-8,499	107	14,063	33,453	42,143	6,967
\$15,000-						
W	-4,421	5,834	20,468	36,898	44,431	12,931
P	-9,592	-765	13,866	32,704	43,403	7,289
\$25,000+						
W	-2,470	6,819	20,566	37,654	45,072	19,292
P	-7,510	589	14,069	33,263	44,139	14,027
All						
W	-2,280	6,164	17,889	30,867	30,713	16,175
P	-6,662	721	12,519	27,223	28,856	12,062

All dollar amounts refer to 1972. See text for definition and methods. Families are either couples or single individuals.

creases net social security wealth. These decreases are small but the fact that they are decreases implies that, on selfish grounds, there is no reason for the current voters to favor price indexing over wage indexing.

The analysis for the youngest group of families may surprise readers. Before the calculations were done, we anticipated that this group might have a higher net social security wealth under price indexing than wage indexing. We based this anticipation on the much lower tax rate that they would eventually pay under price indexing. As Table 4 shows, the tax rates do not differ very much during the next decade but begin to differ quite substantially when the current group of young families approaches retirement in 2000 to 2015. However, these tax savings are not enough to compensate for the lower benefits that price indexing entails. The much greater difference in tax rates during their actual period of retirement represents the greater intergeneration transfer entailed in wage indexing.

The observed political preference for wage indexing may contain a useful insight about the nature of the social security program and its historic growth. Wage indexing was explicitly compared to price indexing and then chosen by the Ford Administration, the Carter Administration, the Senate Finance Committee, and the House Committee on Ways and Means. These decisions can be regarded as an indication

of a widespread political preference by today's voters to transfer income to themselves from the next generation of workers. Seen in this way, the rapid historic growth of social security is very different from the growth of other government programs. Social security has grown because voters are prepared to tax themselves because they expect that they will actually benefit by receiving more from the next generation.

This interpretation of the political support for social security expansion also sheds light on one aspect of the debate about the effect of social security on private saving. Barro (1974) has ingeniously argued that social security need not depress private saving if the current workers save in order to increase their bequests to offset the greater tax burden that the social security program imposes on their children. This argument regards social security as a policy imposed on the population "by the government" rather than as a policy chosen by the voters themselves. It seems more appropriate to regard the generation of worker-voters as voting to transfer income from future generations to themselves and therefore as having no desire to offset this transfer by increased bequests. The nature of the political support for social security thus implies that it does in fact reduce private saving.

5. Summary

An individual's social security wealth is the actuarial present value of the benefits that he will be eligible to receive at age 65. Unlike most other forms of wealth, social security wealth is not backed by physical capital in the form of structures and equipment. Nevertheless, these claims on future taxpayers are the most important asset for the majority of American families.

In this paper we have used an important new body of data to estimate the social security wealth of a representative sample of 38,000 households. Because the data for each household include the actual administrative records of the Social Security Administration, our calculations of social security wealth are substantially more accurate than any previous estimates. The sample was chosen in a way that permits estimating social security wealth for the entire population and for groups classified by income and age.

In our analysis of these data, we have emphasized five salient results:

(1) The social security wealth is very large. At the end of the 1978 fiscal year, the social security wealth of the population over age 25 will exceed \$3.4 trillion.

(2) Social security wealth is distributed very equally. Households with incomes of \$25,000 or more account for only 10 percent of social security wealth but more than 50

percent of ordinary fungible wealth. The distribution of total wealth, including social security wealth, is therefore very much less concentrated than the distribution of ordinary wealth.

(3) Net social security wealth, i.e., net of future social security taxes, will be \$2.0 trillion by the end of fiscal year 1978. This represents the transfer to persons now over 25 that will be made by those who are younger or not yet born. This implicit claim on future transfers provides strong political support for social security.

(4) The net social security wealth of individuals aged 25 to 34 is negative: the present value of the taxes that they will pay exceeds the present value of the benefits for which they will be eligible. The fraction of the population with negative net social security wealth will grow with time, reducing the political support for high social security taxes.

(5) The calculation of social security wealth is useful for comparing the "price indexing" method of adjusting future benefits with the wage indexing method that has been proposed by both the Ford Administration and the Carter Administration. Price indexing would limit the eventual rise in the payroll tax to 12 percent instead of the 19 percent or more required by wage indexing. Price indexing would also have long-run advantages for the supply of both capital and skilled labor. Our analysis shows that the total social

security benefits of current workers would be little affected by the choice of indexing methods; the difference in social security wealth between the two methods is less than 10 percent. Nevertheless, wage indexing promises current workers a greater net transfer from future generations; the net social security wealth is greater under wage indexing for every age group. This may explain its political support. The growing fraction of the population with negative net social security wealth should serve as a warning: the choice of wage indexing may not only be bad economics, but also a bad bet on the generosity of future taxpayers.

REFERENCES

- Barro, Robert. "Are Government Bonds Net Wealth?" Journal of Political Economy 82 (November/December 1974):1095-1117.
- _____. "Social Security and Private Saving--Evidence from the U.S. Time Series." 1976. (Mimeographed.)
- Congressional Budget Office, Congress of the United States. Financing Social Security: Issues for the Short and Long Term. Washington, D.C.: Government Printing Office, 1977.
- Consultant Panel on Social Security. Report of the Consultant Panel on Social Security to the Congressional Research Service. Washington, D.C.: Government Printing Office, 1976.
- Darby, Michael R. "The Effects of Social Security on Income and the Capital Stock." 1977. (Mimeographed.)
- Feldstein, Martin. "Social Security, Induced Retirement, and Aggregate Capital Accumulation." Journal of Political Economy 82 (September/October 1974):905-926.
- _____. "Social Security and the Distribution of Wealth." Journal of the American Statistical Association 71 (December 1976):800-807.
- _____. "Social Security and Saving: The Extended Life Cycle Theory." American Economic Review 66 (May 1976): 77-86.
- _____. "Facing the Social Security Crisis." The Public Interest
- Feldstein, Martin and Pellechio, Anthony. "Social Security and Household Wealth Accumulation: New Microeconomic Evidence." H.I.E.R. Discussion Paper No. 530, January 1977.
- Kotlikoff, Laurence J. "Essays on Capital Formation and Social Security, Bequest Formation, and Long Run Tax Incidence." Ph.D. dissertation, Harvard University, 1977.

- Munnell, Alicia H. "Private Pensions and Saving: New Evidence." Journal of Political Economy 84 (October 1976):1013-32.
- Projector, Dorothy S. and Weiss, Gertrude S. Survey of Financial Characteristics of Consumers. Washington, D.C.: Board of Governors of the Federal Reserve System, August 1966.
- Scheuren, F. J. et al. 1973 CAS-SER Exact Match Codebook. U.S. Department of Health, Education, and Welfare, Social Security Administration, 1975.
- Smith, J.D., ed. The Personal Distribution of Income and Wealth. National Bureau of Economic Research, Studies in Income and Wealth. New York: Columbia University Press, 1975.

Appendix

Social Security Wealth Estimates Based on a 1 percent Real Discount Rate

This appendix presents tables analogous to Tables 1,2,3 and 6 in the text but based on a real discount rate of 1 percent. This is close to the real net rate of interest available over the past 25 years on long-term debt.

Discounting at this lower rate substantially raises the estimates of social security wealth. The aggregate gross social security wealth is increased from \$1.85 trillion at the end of 1972 based on a 3 percent real discount rate to \$3.02 trillion with a 1 percent real discount rate. The corresponding aggregate net social security wealth is increased from \$1.06 trillion to \$1.99 trillion.

The basic distributional features of these revised social security estimates are very similar to the results presented in the text. The only important difference is that net social security wealth is no longer negative for any age-income groups. The conclusion that the net social security wealth is higher for everyone with wage indexing is unchanged.

TABLE 1A

DISTRIBUTION OF SOCIAL SECURITY WEALTH

Based on 1 Percent Real Discount Rate
 (Percentages of Total Social Security Wealth)

Income	Age					All	35-64
	25-34	35-44	45-54	55-64	65+		
< \$3,000	0.8	0.8	1.1	2.7	12.6	18.0	7.8
\$3,000-	1.2	0.9	1.1	1.2	1.0	5.5	5.7
\$6,000-	3.5	2.1	2.2	2.3	0.7	10.7	11.1
\$9,000-	5.8	3.9	4.2	3.4	0.7	17.9	19.7
\$12,000-	5.2	3.7	3.4	2.4	0.4	15.1	16.3
\$15,000-	7.0	7.0	6.0	3.8	0.7	24.4	28.6
\$25,000+	1.4	1.9	2.5	1.9	0.7	8.3	10.8
All	24.9	20.3	20.4	17.7	16.7	100.0	100.0

All figures relate to the distribution of 1972 social security wealth of \$1.847 trillion.

TABLE 2A
 SOCIAL SECURITY WEALTH PER FAMILY
 Based on 1 Percent Discount Rate

Income	Age of Head						All	35-64
	25-34	35-44	45-54	55-64	65+	All		
< \$3,000	\$20,116	\$22,446	\$20,911	\$30,486	\$33,323	\$30,262	\$26,072	
\$3,000-	28,991	27,613	29,544	31,475	39,399	30,936	29,689	
\$6,000-	42,827	39,841	38,221	43,354	45,132	41,446	40,397	
\$9,000-	55,725	53,080	51,523	53,095	51,579	53,462	52,506	
\$12,000-	60,342	55,060	54,673	58,326	53,940	57,165	55,707	
\$15,000-	62,223	62,157	58,204	57,844	54,454	60,226	59,709	
\$25,000+	58,769	56,708	57,439	58,751	54,460	57,529	57,593	
All	50,745	49,876	46,826	36,023	48,296	45,888	47,618	

All dollar amounts refer to 1972. See text for definition and methods. Families are either couples or single individuals.

TABLE 3A
 SOCIAL SECURITY WEALTH NET OF FUTURE TAXES
 Based on 1 Percent Discount Rate
 (Net Social Security Wealth per Family)

Income	Age of Head					All
	25-34	35-44	45-54	55-64	65+	
<\$3,000	\$9,708	\$15,667	\$16,528	\$28,987	\$33,228	\$28,473
\$3,000-	13,131	16,113	23,530	29,714	39,375	23,434
\$6,000-	15,422	21,149	21,113	40,441	45,005	26,230
\$9,000-	17,954	26,097	37,935	48,321	51,313	31,650
\$12,000-	18,846	25,814	38,652	52,717	53,268	31,538
\$15,000-	17,931	27,816	39,743	51,450	53,992	32,734
\$25,000+	19,573	27,093	39,569	52,600	54,023	37,370
All	16,662	24,290	33,536	42,197	35,898	30,055
						33,180

All dollar amounts refer to 1972. See text for definition and methods.
 Families are either couples or single individuals.

TABLE 6A

EFFECT OF PRICE INDEXING ON SOCIAL SECURITY WEALTH NET OF FUTURE TAXES

Based on 1 Percent Discount Rate

(Net Social Security Wealth Per Family: Wage Indexing (W) and Price Indexing (P))

Income	Age					
	25-34	35-44	45-54	55-64	65+	All
<\$3,000						
W	\$9,708	\$15,667	\$16,528	\$28,987	\$33,228	\$28,473
P	5,283	10,376	12,494	24,873	30,927	25,426
\$3,000-						
W	13,131	16,113	23,530	29,714	39,375	23,434
P	5,565	9,578	17,770	26,869	38,056	18,402
\$6,000-						
W	15,422	21,149	21,113	40,441	45,005	26,230
P	4,630	11,669	20,807	36,206	42,794	18,318
\$9,000-						
W	17,954	26,097	37,935	48,321	51,313	31,650
P	4,490	13,948	23,239	42,464	49,775	21,297
\$12,000-						
W	18,846	25,814	38,652	52,717	53,268	31,538
P	4,410	13,490	28,248	46,607	51,504	20,240
\$15,000-						
W	17,931	27,816	39,743	51,450	53,992	32,734
P	3,331	13,937	28,717	45,557	52,704	21,068
\$25,000+						
W	19,573	27,093	39,569	52,600	54,023	37,370
P	5,322	14,239	28,717	46,427	52,844	27,316
All						
W	16,662	24,290	33,536	42,197	35,898	30,055
P	4,434	12,951	24,643	37,217	33,741	22,068

All dollar amounts refer to 1972. See text for definitions and methods.
Families are either couples or single individuals.