he Financial Principle of Self-Support in the Old-Age and Survivors Insurance System

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This study has been prepared for the use of the staff of the Social Security Administration and for limited circulation to other administrative, insurance, and research persons concerned with the subject treated. It has not been submitted to the Commissioner of Social Security for official approval.

THE FINANCIAL PRINCIPLE OF SELF-SUPPORT IN THE OLD-AGE AND SURVIVORS INSURANCE SYSTEM

A. Introduction

In the extensive revision of the Old-Age and Survivors Insurance system in 1950, Congress modified to a considerable extent the financing basis of the program. This basis was not changed in either the 1952 or 1954 Amendments.

This study analyzes the meaning of the financing basis adopted in 1950, using the cost estimates for the legislation enacted then as an illustration. Because the act has been changed twice since that time, from one viewpoint these cost figures are obsolete but their use for illustrative purposes is valid. In essence, the analysis indicated what alternative financial provisions could have been made by Congress in 1950 within the framework of the financing philosophy adopted. The way in which Congress carried out the financial philosophy of the 1950 Act in the 1954 Amendments is also considered.

B. Alternative Methods for Carrying Out the Financing Basis of the 1950 Act

Clear statements of intent as to the financing basis of OASI were made in the congressional committee reports on the 1950 legislation.[1] The report of the Committee on Ways and Means (House Report No. 1300, 81st Congress, 1st Sess.), stated that the program should be on "a completely self-supporting basis." The committee therefore "recommended a tax schedule which it believes will make the system self-supporting (or, in other words, actuarially sound) as nearly as can be foreseen under present circumstances." At the same time, the committee recognized that future experience might differ from the estimates made at that time so that the scheduled tax rates might eventually have to be modified in one direction or another. Under such circumstances the necessary revision could readily be determined by Congress after a period of time. The committee further recognized that it would not be practical to develop a tax schedule that would make the system exactly self-supporting according to the estimates because of the undesirability of introducing an ultimate contribution rate of an unwieldy fractional amount.

In brief, the principle of self-support means that no appropriated monies other than contributions from workers and employers will, over the long-run, be needed to pay the benefits (and also the administrative expenses). Also available for such purposes will be any interest earned on investments in the trust fund. Such interest does not represent "contributions" or "financial support" from either the General Treasury or the general taxpayer, since the interest on these investments would have to be paid, whether the securities were held by the trust fund or by private investors.

The financing basis of OASI as established by Congress in the 1950 Act has been rather widely misinterpreted by the general public to mean that large amounts in the trust fund are called for. In fact, some persons believe that the system is fully funded on an actuarial basis, just as a well-established and well-administered private pension plan would be, although a fully funded system is not necessary in a social insurance plan. Actually, the principle of self-support adopted by Congress does not require that the trust fund be large; rather, the trust fund is a result of the contribution schedule established.

Within the broad framework of a self-supporting system, a great variety of OASI contribution schedules other than the one actually adopted could have been prescribed by the Congress in the 1950 legislation. Thus, a self-supporting system could be achieved if the

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1/ For more details, see Robert J. Myers, "Actuarial Aspects of Financing Old-Age and Survivors Insurance," Social Security Bulletin, June 1953.

contribution rate were level over all future years or--an even more extreme example--if the contribution rate were higher in the earlier years than in the later ones. The principle of self-support could also be adhered to if the contribution schedule were graded up much more slowly (and thus to a higher ultimate rate) than the schedule actually adopted in 1950 or than the one contained in present law. In fact, the principle of self-support would not be violated if the grading of the tax schedule were to result in an essentially pay-as-you-go system under which benefit disbursements closely approximated contribution income each year.

It should not be inferred from the previous discussion that the only principle on which the contribution schedule has been based is that of self-support. Ever since the OASI program was proposed by the President's Committee on Economic Security in 1935, a graded contribution schedule has been recommended or has been in the law. Probably the major reasons for a graded schedule, rather than a level rate, are that the economy of the nation adjusts more easily to the cost burden and consequently the resulting fund may be kept smaller and within manageable limits. The establishment of the contribution schedule and the modification and timing of its gradation have, at various times in the past, reflected economic, social, and political considerations.

Still another important principle--that of individual equity--is involved in the determination of the contribution schedule. According to this principle, the eventual contributions should not be so high that young entrants could purchase more protection with their own contributions from a private insurance company. This viewpoint has been expressed by many students of social security (including those testifying before congressional committees), but was never set forth in any of the committee reports underlying the 1950 or subsequent legislation.

The principle of individual equity is difficult to disagree with. The problem arises that this principle is easy to discuss in general but relatively difficult to define specifically. Certain questions arise. Should only workers who actually earn the maximum taxable wage for every year of their working life be considered, or should a probable wage-history basis be used? Should retirement be assumed to occur at the earliest possible age, or should the probability of retirement at later ages be considered? Should allowance be made for the probabilities of marriage and parenthood, or should only single men and single women be considered? Should the fact that the self-employed pay 50% more than employees be considered?

Table 1 shows the estimated progress, based on the intermediate-cost estimate, of the OASI trust fund for the 1950 Act under the actual contribution schedule contained therein. The fund grows steadily, reaching a maximum of $84 billion in 1990 and then declines slowly. The fact that the trust fund decreases after 1990 indicates

Table 1

ESTIMATED PROGRESS OF OASI TRUST FUND FOR 1950 ACT UNDER
CONTRIBUTION SCHEDULE OF 1950 ACT,
INTERMEDIATE-COST ESTIMATE
2% INTEREST
(in millions)

Calendar Year	Contributions	Benefit Payments	Administrative Expenses	Interest on Fund	Fund at End of Year
1960	$5,409	$3,779	$105	$545	$28,543
1970	7,854	5,873	145	1,005	52,167
1980	8,374	7,972	184	1,473	75,236
1990	8,719	10,087	223	1,652	83,451
2000	9,050	11,255	246	1,551	77,863

Source: Actuarial Cost Estimates for the Old-Age and Survivors Insurance System as Modified by the Social Security Act Amendments of 1950, July 27, 1950 (Table 14) prepared for the use of the Committee on Ways and Means by Robert J. Myers, Actuary to the Committee.

that the contribution schedule in the 1950 law was not fully self-supporting, although sufficiently close for all practical purposes considering the uncertainties and variations possible in cost estimates. In this connection the House Ways and Means Committee stated in its 1949 report:

> If a 7% ultimate employer-employee rate had been chosen, the cost estimates developed would have indicated that the system would be slightly over-financed. Your committee believes that it is not necessary in such a long-range matter to attempt to be unduly conservative and provide an intentional over-charge---especially when it is considered that it will be many, many years before any deficit or excess in the ultimate rate will be determined and even at that time it will probably be of only a small amount.

The calculations made in 1950 used an interest rate of 2% in the basic estimate, but figures assuming higher interest rates were also shown. Analysis of the financing philosophy is clearer if assumptions are made that permit the system to be shown as exactly self-supporting. The easiest way to achieve this objective is by varying the interest rate. An interest rate of 2.48% would in this case have accomplished "mathematical self-support."

The progress of the trust fund is shown in Table 2 for various future years under different contribution schedules. The upper half of the table, based on a 2% interest rate, relates to two contribution schedules--that in the law and a second schedule with a level employer-employee rate of 5.96%. The latter schedule is actuarially equivalent to the schedule in the law; that is, in the long-run, with interest taken into account, it produces the same income to the fund. Under this second schedule the trust fund reaches a maximum of over $120 billion in 1990, or almost $40 billion higher than the amount under the graded schedule in the 1950 law.

In the lower half of Table 2, where estimates are based on a 2.48% interest rate, figures are set down for five different contribution schedules: the one in the law, a level employer-employee rate of 5.84%, and three graded schedules rising more slowly than that in the law but to higher ultimate rates (7, 7½, and 8%). The last four schedules are actuarially equivalent to the schedule in the law. These schedules are listed in Table 3.

Under the contribution schedule in the law, the trust fund builds up to a maximum of about $100 billion in the year 2000, while under the level contribution basis the corresponding figure is $138 billion. Under the three alternative graded schedules much lower figures result. The trust fund in the year 2000 amounts to about $73 billion under the schedule having an ultimate rate of 7%, while for the ultimate rates of 7½ and 8%, the corresponding figures are

Table 2

ESTIMATED BALANCE IN TRUST FUND AT END OF YEAR UNDER 1950 ACT,
FOR VARIOUS CONTRIBUTION SCHEDULES,
INTERMEDIATE-COST ESTIMATE
(in billions)

Contribution Schedule[a]	Calendar Year				
	1960	1970	1980	1990	2000
	Using 2% Interest Rate				
In law	$28.5	$52.2	$75.2	$83.5	$77.9
Level 5.96	55.3	89.3	112.9	121.5	116.1
	Using 2.48% Interest Rate				
In law	$29.6	$55.6	$83.1	$97.7	$100.5
Level 5.84%	55.6	91.9	120.1	135.2	138.0
3-7%	27.4	40.3	55.4	69.8	72.6
3-7½%	25.0	34.5	45.7	46.5	44.0
3-8%	25.0	29.4	29.3	22.7	13.5

a/ The graded contribution schedules are those shown in Table 3.

Table 3

ILLUSTRATIVE CONTRIBUTION SCHEDULES EQUIVALENT TO SCHEDULE
IN 1950 ACT,
AT 2.48% INTEREST

Employer-Employee Rate	Contribution Schedule			
	In Law	3-7%	3-7½%	3-8%
3%	1950-53	1950-54	1950-56	1950-56
4	1954-59	1955-63	1957-65	1957-69
5	1960-64	1964-73	1966-72	1970-79
6	1965-69	1974-77	1973-87	1980-89
7			1988-98	1990-99
Ultimate	6½% after 1969	7% after 1977	7½% after 1998	8% after 1999

$44 billion and $14 billion, respectively. In fact, the fund for the schedule having an ultimate rate of 7½% is virtually level at about $45 billion from 1980 on. Under the schedule having an ultimate rate of 8%, the fund builds up to a maximum of about $31 billion in 1975 and decreases thereafter to the ultimate figure of $14 billion. Though a decrease occurs under this schedule it should be emphasized that the system is self-supporting throughout the entire period and even thereafter since the ultimate contribution income is sufficient, along with the relatively small amount of interest from the $14 billion trust fund, to meet the disbursements of the program. This contribution schedule, essentially a "pay-as-you-go" one, would thus meet the financing principle of self-support that Congress set forth.

C. Concept of Actuarial Soundness

The concept of actuarial soundness as applied to the OASI program differs to a considerable extent from this concept as it is applied to private insurance. Certain points of similarity exist, especially in comparison with private pension plans. The most important difference arises because OASI can be assumed to be perpetual in nature, with a continuing flow of new entrants resulting from the compulsory nature of the program.

Accordingly, it may be said that the OASI system is actuarially sound if it is in actuarial balance--that is, if future contribution income plus future interest receipts will support the outgo for benefits and administrative expenses over the long-run. Obviously, future experience may be expected to differ from any actuarial assumptions made now, but the intent of an actuarially sound (or self-supporting) system can be expressed in law by the development of a contribution schedule that, according to an intermediate estimate, brings the system close to being in balance.

For a given cost estimate of future disbursements a contribution schedule that would show exact balance could conceivably be developed. To do so, however, would require either fractional tax rates of odd amounts or increases in contribution rates in years that fall in no special pattern. Such a procedure would be highly artificial because it cannot be expected that long-range actuarial cost estimates can be completely precise. In actual practice, therefore, the system may be said to be in actuarial balance when the ultimate tax rate is quite close to the fractional rate that would show exact self-support. Such was the case for the rates in both the 1950 and 1952 Acts. Furthermore, if the ultimate employer-employee rate had been increased by ½%, presumably the smallest practical increase, the system would have been "shown" as more than self-supporting in both instances. Congress decided that the rounded rate slightly less than the self-supporting rate was preferable.

D. 1954 Legislation

The contribution schedule for 1970 and thereafter was increased by the 1954 Amendments. The 4% combined employer-employee rate for 1954 was left unchanged through 1959, as were also the previously scheduled rates of 5% for 1960-64 and 6% for 1965-69. In the 1950 and 1952 Acts, the ultimate rate was 6½% for 1970 and thereafter, the 1954 Amendments changed the schedule to 7% for 1970-74 and 8% thereafter. In each instance, self-employed individuals pay 75% of the combined employer-employee rate.

From an actuarial standpoint, the revision of the tax schedule is of considerable interest. Two important factors were involved in this action--the revised cost estimates for the 1952 Act and the effect of the various changes made by the 1954 Amendments.

Following the enactment of the 1952 legislation, new cost estimates were developed in line with the policy of continous study and revision of these estimates (Actuarial Study No. 36). The estimated level-premium cost of the benefit and administrative expense disbursements under the 1952 Act was then shown to be about .6% of payroll higher than the level-premium equivalent of the scheduled taxes, after interest on the existing trust fund was taken into account.

The changes made by the original bill that led to the 1954 Amendments involved some items that increased cost (principally those dropping out certain periods in computing average wage, raising the benefit level, and liberalizing the retirement test) and others that lowered costs (chiefly those extending coverage and raising the earnings base). The net effect of the changes proposed in the original bill was an increase in cost of about .55% of payroll on a level-premium basis. This rise would, of course, not be fully met by the proposed ½% increase in the ultimate tax rate, which is equivalent on a level basis to about .4% of payroll (see Actuarial Study No. 38). No margin was left for meeting the "insufficiency" in the 1952 Act indicated by the new cost estimates.

The bill reported out by the House Ways and Means Committee had essentially the same relative benefit cost as the original bill, but the ultimate contribution rate was increased by 1½% of payroll over that in then-existing law and by 1% over that in the original Administration bill. This higher schedule took care not only of the increased benefit cost but also of a substantial part of the "insufficiency." The Senate Finance Committee, however, increased the benefit cost in a number of ways (for example, liberalizing the retirement test and providing for less extension of coverage). As

a result, in the Senate version of the bill the higher ultimate contribution rate did little toward meeting the "insufficiency," although it met the estimated cost of the liberalized benefit provisions. In this connection the Senate Finance Committee stated in its 1954 report:

> Subsequent to the enactment of the 1952 Act, new cost estimates were developed to take into account the considerable change in economic conditions during the last few years and the additional actuarial and statistical data available from the program's operations and from the 1950 census. According to these new estimates (contained in Actuarial Study No. 36 of the Social Security Administration, Department of Health, Education, and Welfare) the level-premium cost of the benefit disbursements and administrative expenses under the 1952 Amendments is somewhat more than one-half percent of payroll higher than the level-premium equivalent of the scheduled taxes (including allowance for interest on the existing trust fund).

The legislation finally adopted was a compromise, as far as costs were concerned, between the House and Senate bills; the increase in the ultimate contribution rate could be said to meet all the additional cost of the benefit changes made and a substantial part of the "insufficiency." It was estimated that, as of the beginning of 1955, this "insufficiency" amounted to about .4% of payroll on a level-premium basis (according to the high-employment intermediate-cost estimates at 2.4%). Revision of the cost assumptions to reflect both the higher current earnings levels than prevailed in 1951-52 and the lower interest rate actually being earned by the trust fund (2.3%), would, however, reduce this insufficiency to about .2% of payroll. The lower interest rate, of course, produces higher level-premium costs, but the higher earnings assumption more than offsets such an increase (greater earnings result in lower relative costs because of the weighted benefit formula).

E. Summary

The basic financing principle adopted by the Congress in 1950 (and since maintained) for the old-age and survivors insurance system is that the program should be completely self-supporting from contributions of workers and employers. Self-support can be achieved by any number of different contribution schedules--ranging from, at one extreme, a schedule that would be higher in the early years than later and thus would produce a "fully funded reserve" to, at the other extreme, a schedule so slowly graded up that "pay-as-you-go" financing would, in effect, result.

Since the system can be self-supporting through any one of several possible contribution schedules, the selection of a particular schedule depends on social, economic, and political considerations as well as considerations of individual equity. It is obvious that all self-supporting tax schedules to finance old-age and survivors insurance are not equally desirable, and the choice must depend upon thorough study and evaluation of the many factors involved.

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