

its harsher treatment of marginal firms, would be preferable. The income tax and payroll tax, in fact, would appear to be a nicely complementary pair, as long as both are kept below seriously repressive levels. In any event, it obviously would be unrealistic to contend that the faults of the social security tax exert a more oppressive effect than those of the income tax, since both can exhibit extremely unpleasant characteristics as rates increase.

V. A WAY OUT OF THE DILEMMA: REALISTIC APPROACHES TO COSTS

I have attempted to show that the OASDHI tax leads to a number of undesirable effects. Raising equivalent funds through general revenue financing may reduce some of the problems, but only at the expense of aggravating another set of difficulties. It would seem that the taxpayer has been boxed into a depressing trap.

Sometimes, however, traps are more of the captive's own devising than externally imposed. There is a weak point in the social security system, which just possibly may provide an avenue of escape: the assumption that the costs of the system must continue to increase.

In the past, three important factors have led to the need for increasing taxes to finance the social security system:

1. The anticipation that benefits must be increased to maintain a decent standard of living for our elders.
2. The intergeneration transfer, which will continue to some degree until the early part of the next century.
3. The interbracket income redistribution which has been quietly increased in intensity, with resultant changes in the entire philosophy of the system.

Before we abandon all hope, perhaps we should consider the importance of each of these elements for the integrity of the entire system, and whether and changes might be made which would ease the financing pressures.

BENEFIT LEVELS

Like many others of my generation, I was brought up in an American subculture which respects old age, and would be among the first to agree that our elders should be able to live in comfort and dignity. I also agree with Jung that old age is a time for retrospection and introspection, a time to prepare for whatever lies beyond, and concede that this vital task certainly cannot be accomplished under economic pressure. I nonetheless feel that the time has come to consider the matter of increasing benefits in a realistic framework.

The basic problem stems from considering the social security pension as providing the older person's entire support, rather than as the floor it was originally meant to be, and in fact is, for many of the retired. In evaluating the adequacy of benefits, several points must be remembered. Older people generally have accumulated assets which reduce their outlays (such as a house) and often, in addition, income-bearing assets. Increasing numbers receive supplemental income from private pensions. Still others are capable of and would benefit from part-time, light work that would enable them to bring their combined pension-earnings income to a comfortable level but for the strictures imposed by the social security system. At the same time, it must be

recognized that substantial numbers of the elderly depend almost entirely on their OASI pensions.

For example, consider the archetypal cases of three sisters, all widows on social security, whose personal circumstances neatly illustrate the problem and point a way to a solution. Mrs. A was married to a barber, a wonderful man who told marvelous stories but never was able to save a dime. Mrs. A quickly ran through the few assets he left, and really can't live on her pension. Her highest skill is baby-sitting. Her sister, Mrs. B, is a competent woman with a keen business sense who was left a good farm. She would very much like to operate the farm herself, but instead, because of earnings limitations, must rent it if she wants to collect her OASI pension. She has enough income, but worries constantly about the failure of her tenant to take a long-run view in his management of the farm. Mrs. C, on the other hand, married a man who died a millionaire; so, she has no worries about money at all.

The question is, should the pensions of Mrs. B and Mrs. C be increased so that Mrs. A can live decently? When the problem is put in the perspective that comes from thinking about real people (as distinct from "the elderly" or "the poor"), it is clear that Mrs. A's needs should be met in a framework that would not waste funds on the other two. Mrs. A needs welfare; the other widows do not, although Mrs. B would benefit from an easing of the earnings limitation. It would be wasteful to extend welfare to all three in the form of social security benefits high enough to meet Mrs. A's need.

How high, then, should benefits be? The answer, I think, is that they should be as high as can be supported by today's level of payroll tax—which, after the adjustments suggested in the next two sections, may be considerably higher than present levels. Anything more should be treated as welfare, and handled outside the social security framework.

THE INTERGENERATION TRANSFER

No one now receiving an OASI pension has paid social security taxes all his working life. In fact, a 21-year-old man who entered the labor force when the social security system first began in 1937 will not normally retire until 1981. The consequence, as shown in table 6, is that the cumulative value of taxes at 3.5 percent compound interest falls quite a bit short of the discount value, also at 3.5 percent, of probable benefits in the case of pensioners retiring relatively early. Generally, single individuals retiring before 1990 and married men retiring before 2010 receive a windfall. But, the table also illustrates who pays for the windfall: the younger participants, the value of whose taxes massively exceed their probable benefits. For instance, if he lives out his normal lifespan a single male entering the work force in 1965 will pay (not counting matching payments from his employer) OASDI taxes with about \$12,800 more than the discounted benefits he can expect, computed on the basis of implicit 3.5 percent interest under existing law.

Where does the \$12,800 go? No chicanery is involved: someone has to pay for the pensions of those who have not been covered by the system long enough to pay their own way competently. This transfer of funds from the younger generation to the older generation is an extremely important reason for the present high rates of tax.

TABLE 6.—VALUE OF TOTAL EMPLOYEE TAXPAYMENTS AND BENEFITS, AND TAXPAYMENTS AS PERCENT OF BENEFITS, SELECTED RETIREMENT YEARS, 1962-2010

Year of retirement	Value of taxpayments at 3.5-per- cent interest ¹	Value of benefits discounted at 3.5 percent ²			Value of taxpayments as percent of value of benefits		
		Single male	Married male	Single female	Single male (percent)	Married male (percent)	Single female (percent)
1962-----	\$1,981	\$14,995	\$25,225	\$17,437	13.2	7.9	11.4
1965-----	2,270	15,483	26,050	18,227	14.7	10.4	14.9
1970-----	4,567	16,797	28,270	18,639	27.2	16.2	24.5
1980-----	10,144	17,960	30,235	20,234	56.5	33.6	50.1
1990-----	16,830	18,425	31,021	20,899	91.3	54.3	80.5
2000-----	25,225	19,239	32,397	21,963	131.1	77.9	114.9
2010-----	32,496	19,704	33,183	22,495	164.9	97.9	144.5

¹ Based on social security law as amended in 1965. Assumes worker is employed (as an employee) at maximum covered earnings in all years after 1937, or after attaining age 20, if later. Excludes portion of tax earmarked for health insurance, and entire employer tax. Taxpayments are the same for single male, married male, and single female.

² Assumes worker is alive at age 65 and retires at that time (attaining age 65 at the beginning of the year). Married worker and his wife are the same age.

Source: Unpublished computations prepared by Ray M. Peterson, formerly vice president and associate actuary, the Equitable Life Assurance Society of the United States.

One comfort about the intergeneration transfer problem is that time alone will heal it, provided, of course, it doesn't damage the system irreparably before then. Something along the lines suggested by Professors Buchanan and Campbell might reduce the current strain on the system: a bookkeeping adjustment which would treat the cost of the intergeneration transfer as a national debt (and hence chargeable against general revenues), rather than an obligation on the social security trust fund.¹ This done, it likely would be possible to reduce social security taxes while maintaining present benefits or, alternatively, increase benefits considerably while freezing rates at their present level.

INTERBRACKET INCOME REDISTRIBUTION

The social security system has always included some degree of redistribution from high- to low-income levels, with lower paid workers receiving pensions representing a higher percentage of their average taxable income than was true of taxpayers at the upper end of the spectrum. The redistribution element has gradually increased over the years, particularly with respect to those pensioners receiving benefits determined by the legal minimum. Minimum pension beneficiaries (who may or may not be low-income beneficiaries) have enjoyed relative gains because the level of the floor has gradually increased, while the level of qualifying earnings has remained stationary.

The ratio of the basic monthly benefit to average monthly taxable wages (B/W) may be taken as a rough comparative indicator of how much a beneficiary is getting back, relative to what he paid in taxes. In a comparison of two beneficiaries, the one with the higher B/W may be considered the gainer, because he gets more back for each tax dollar he pays in. Over time, income will be redistributed from the low B/W beneficiary to the high B/W beneficiary, since the latter gets a better bargain than the former.

Table 7 shows B/W for three categories of taxpayers under provisions of all benefit schedules to date, plus under the current Presi-

¹ James M. Buchanan and Colin D. Campbell, "Voluntary Social Security," *Wall Street Journal*, Dec. 20, 1966. The Buchanan-Campbell proposal is considerably more intricate than I have indicated above, and includes a proposal that taxpayers be allowed to withdraw from the system. I am not convinced that the complete plan is workable unless drastic changes can be made in the income redistribution elements of the system.

dential proposal. The first column gives B/W for beneficiaries earning the highest level of taxable wages; the second column, for beneficiaries who received the legal minimum because their qualifying wages were so low the ordinary rules for computing benefit levels did not apply; the third, for beneficiaries just above the floor, a category we perhaps could consider the "normal" low-wage taxpayer.

TABLE 7.—RATIO OF MONTHLY BASIC BENEFIT TO AVERAGE TAXABLE WAGES, SELECTED BENEFIT LEVELS, 1939-65

Year enacted	Average monthly taxable wages as multiple of monthly benefit			Col. (2) as multiple of col. (1)	Col. (3) as multiple of col. (1)
	(1) Maximum wage	(2) Minimum wage qualifying ¹	(3) Minimum wage not dependent on benefit floor ²		
1939	.24	.6	.40	2.5	1.7
1950	.27	1.2	.50	4.4	1.8
1952	.28	1.5	.55	5.4	2.0
1954	.31	1.8	.55	5.8	1.8
1958	.32	2.0	.59	6.2	1.8
1961	.32	2.4	.59	7.5	1.8
1965	.31	2.6	.63	8.5	2.0
Increase, 1939-65 (percent)	29.2	333	57.5	240.0	17.6
Presidential proposal	.32	4.2	.72	13.5	3.4

¹ Assumes \$50 earned per quarter in all 4 quarters each year employed (see text footnote 22).

² Equal to \$25 in 1939; \$40 in 1950; \$45 in 1952; \$54 in 1954; \$56 in 1958; \$68 in 1951; \$70 in 1965.

Source: Computations based on Robert J. Myers, *Old-Age, Survivors, Disability and Health Insurance Provisions: Legislative History, 1935-65*, Social Security Administration, July 1965; Committee on Ways and Means, *Section-by-section analysis and explanation of provisions of H.R. 5710, the "Social Security Amendments of 1957 * * **", February 1967.

B/W has increased for all three categories. For beneficiaries earning the maximum wage, it increased from 0.24 in 1939 to 0.31 in 1954, where it stands today. For the normal-low wage beneficiary, B/W began at 0.40 in 1939, and has risen gradually to 0.63 today. In striking contrast, B/W for those receiving the minimum benefit has risen from 0.6 to 2.6 today.² Over the 26 years since 1939, B/W increased about 29 percent for the high-wage beneficiary, 57 percent for the normal-low wage beneficiary, and 333 percent for the minimum benefit category.

Inevitably, the uneven changes in B/W brought changes in the relationship among the three categories. B/W for the normal-low wage category began 1.7 times as large as the B/W for the high-wage category, then slowly increased until today is 2 times as large as the latter. B/W for the minimum category began at 25 times the high category, rapidly increasing to 8.5 times in 1965.

The President's proposal would accelerate the trend of the past quarter century to an incredible degree. B/W would remain unchanged at 0.31 for high beneficiaries, and shoot to 4.2 for minimum beneficiaries. Under this proposal, B/W for normal-low beneficiaries would be 3.4 times as large as for high beneficiaries, while B/W for minimum beneficiaries would be 13.5 times as large as for high beneficiaries and 4 times as large as for normal-low beneficiaries.

² The base used for estimating the minimum wage was conservatively set at \$16.67, on the basis that since the beginning of the system, \$50 earnings in a quarter will give a taxpayer a quarter of coverage. A representative of the social security regional office, New York City, has pointed out to me that present law specifies a person is covered if he has one such quarter of coverage for every year which has elapsed since 1951, or, in effect, average monthly earnings of \$4.17 since that date. I prefer to assume my low-wage taxpayer earned \$200 a year, rather than the \$50 which could qualify him, on the practical ground that a \$4.17 base would lead to results that, while technically correct, would appear too ridiculous to believe.

Most people would take the view that, despite the truly astonishing relationship between the upper and lower ends of the benefit schedule, the minimum benefit considered in the absolute provides a pathetically low income. Obviously, not even an ascetic could manage on the present \$44 per month, or even on the \$70 suggested by President Johnson. In fact, it is impossible to use the social security system to provide a suitable income for people at the lower end of the income spectrum unless we are willing to junk the entire underlying philosophy and transform the social security system into a particularly wasteful welfare mechanism.

Another point to consider is the fact that an unknown proportion of those receiving minimum benefits have not necessarily been low-income earners. For instance, there is the case of an astute lady who was anticipating retirement from administrative work in a public school system not at that time under social security. She persuaded her brother, who owned a large department store, to hire her to tie bows for gift wrapping, spending just enough time at the chore for the \$50 quarterly earnings requisite for coverage. As she pointed out, she certainly didn't need the income from bow tying, but it was silly to pass up the social security for which she could so easily qualify, and she accumulated quarters of credit just as assiduously as she accumulated growth stock.

Unfortunately, the Social Security Administration was unable to provide direct information on the percentage of minimum-level beneficiaries who fall into relatively high income categories. Table 8, which is based on the Social Security Administration's 1963 survey of the aged, provides some indirect information which suggests that married couples³ receiving the minimum level of benefits are not necessarily the most disadvantaged group. While only 45 percent of the beneficiaries in the \$40 primary insurance amount (PIA) category received retirement income other than their social security pension, the median value of this income lay at a higher point for the lowest PIA than for any other PIA category. In fact, retirement income other than OASDHI for the minimum PIA group was 20 percent larger than for either the highest PIA or the "normal"-low PIA, and double the value of the middle PIA category.

TABLE 8.—RETIREMENT INCOME AND SOURCE, BY PRIMARY INSURANCE AMOUNT, MARRIED COUPLES, 1962¹

	Primary insurance amount			
	\$40	\$41 to \$59	\$60 to \$99	\$100 and more
Retirement income other than OASDHI:				
Median amount.....	\$1,215	\$1,000	\$605	\$1,000
Percent with such income.....	45	54	67	87
Percent with retirement income from:				
Employer pensions, public and private, other than OASDHI.....	15	11	14	39
Veterans' pensions and compensations.....	15	21	14	16
Assets.....	32	39	57	77
Private annuities.....	3	2	3	6

¹ Does not include retired married women whose husbands are not entitled to OASDHI.

Source: Leonore A. Epstein and Janet H. Murray, "The Aged Population of the United States," Social Security Administration, Office of Research and Statistics, Research Report No. 19 (scheduled for publication July 1967), pp. 328-331.

³ While table 9 shows data for married couples only, similar relationships among PIA groups appear for nonmarried beneficiaries. However, the actual figures, particularly dollar amounts, differ considerably. Data for various categories of single beneficiaries may be found in the source cited for table 8.

An examination of the sources of non-OASDHI retirement income (table 8), which include public and private employer pensions, veterans' pensions, income from assets, and private annuities, suggests that low PIA beneficiaries may derive their supplementary retirement income primarily from public pensions. Generally, the percentage receiving income from each source is not notably larger, and is sometimes smaller, for the minimum group compared with other groups. However, the fact that the percentage receiving employer pensions in the minimum PIA group is second only to the percentage for the highest PIA group seems curious, since one might deduce that pensions from a private employer (i.e., in employment covered by OASDHI) could not be substantial if an individual qualifies for no more than a minimum OASI pension. Hence the conclusion follows that 45 percent of the low PIA group probably have retired under public programs such as Federal civil service or railroad retirement, receiving pensions large enough to account for their highest "other" retirement income cited above. Obviously, it is easily possible for employees of Federal civil service, railroads, and State systems not linked to social security to qualify for minimum benefits by taking part-time jobs in covered industries for a few years. The higher the minimum benefit, the more these people will be tempted to take the trouble to qualify. If, on the other hand, the needs of the genuinely poor were met through a welfare arrangement outside the social security system, few of those retired under other government programs would qualify for the heavily subsidized minimum pensions.

CONCLUSION

An important choice lies before Congress today. It can transform the social security system into a peculiar sort of welfare program, or can make the repairs that will return the system to the sound principle of an earned pension for all Americans. If the former is the goal, then Congress may as well swing over to general revenue financing, which can best support the spiraling costs which inevitably will ensue. But, if Congress wants something resembling the original system, with its liberating tax-benefit link—a system, I think, best fits the American ideals of independence and self-respect—then it must attend to the major peril to that system, the excessively high costs which require dangerously high payroll taxes.

Two important steps will go far toward reducing costs without undermining the philosophy or financial soundness of the system.

(1) The cost of the one-time-only intergeneration transfer should be identified—a difficult but not impossible chore—and subsidized out of general revenue. Such an adjustment would relieve the financial pressures on the system without opening a Pandora's box to benefit levels supported out of seemingly limitless funds.

(2) The concept of the minimum benefit should be recognized as a wasteful device which has reached an inappropriately high level relative to the rest of the benefit schedule. While it might be politically unrealistic to scrap the concept altogether, the minimum should be restored to a more reasonable point relative to other benefits.

Action suggested under step (1) will make possible an overall increase in benefits without accompanying increases in rates or base, but it is unrealistic to try to use the social security system alone to provide an adequate living for all of our elderly citizens. We can and should meet the needs of our indigent aged through a generous but separate Federal program.

The social security system today lies in grave danger of degenerating into an undignified form of Federal dole. But, if Congress will act with courage to preserve the original concept of the system, endless generations can continue to accept their checks with the satisfaction and self-respect that go with an earned retirement.

INCOME TAX INDUCEMENTS FOR PERSONAL RETIREMENT SAVING

BY ROBERT N. SCHOEPLEIN*

The present schedule of retirement benefits under social security (OASDHI) again is being criticized as "inadequate." This has a familiar ring; the elderly experience recurring purchasing power gaps as labor force earnings and consumer prices rise. The Federal Government has four broad courses of action in upgrading the guaranteed maintenance income for the aged: (1) Increase the benefit schedule under OASDHI; (2) adopt and expand complementary public assistance programs; (3) introduce a new income transfer program, such as a negative income tax; (4) provide inducements—usually through tax incentives—to accelerate the rate of private retirement saving.

This paper¹ focuses on the issue whether income tax inducements can significantly increase the rate of personal retirement saving. A particular form of incentive has received recent attention. The basic proposal is to create a special Federal income tax deduction for current personal retirement saving (including current employer pension contributions in some variants of the proposal).² Some 6.5 million or so self-employed taxpayers presently are eligible for such a "personal pension" deduction under the individual income tax, but these self-employed represent only about 10 percent of all taxpayers under age 65.³ The Canadians have such a deduction in their national income tax, and eligibility is extended to virtually all taxpayers.⁴ These United States and Canadian programs may have been adopted with several objectives in mind, including equity considerations. If these tax-incentive schemes are to complement social security, however, the relevant performance test is the consequent increase in the rate of personal saving.

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¹ I am indebted to Charles M. Tiebout and Gardner M. Brown, Jr., for their comments in reviewing a draft of this paper, though I am responsible for errors that may remain. The Institute for Economic Research, University of Washington, provided financial support for computer research.

² Cf. U.S. President's Committee on Corporate Pension Funds and other Private Retirement and Welfare Programs. Public Policy and Private Pension Programs, Washington, 1965. U.S. Congress, Joint Economic Committee. Hearings: "Private Pension Plans." 89th Cong., 2d sess., spring 1966.

This special income tax deduction to induce personal retirement saving should not be confused with the proposal to permit income-tax deductions of employee OASDHI contributions, discussed in U.S. Congress, House, Committee on Ways and Means. Hearings on President's proposals for revision in the social security system, 90th Cong., 1st sess., Mar. 1-3, 1967, pt. I, pp. 195-201.

³ The program is titled the "Self-Employed Individuals Tax Retirement Act of 1962" (76 Stat. 809), and frequently is cited as "H.R. 10" in trade journals. The eligibility estimate is based on U.S. Treasury "Statistics of Income, Business Tax Returns, 1962," adjusted to 1964 preliminary returns. The total represents the sum of partners in partnerships with net profit plus sole proprietors with net profit.

⁴ Registered retirement savings plan. Stat. Can. 1957, 168.c.29.

Few eligible taxpayers presently are utilizing the "personal pension" deductions in either the United States or the Canadian programs—about 1 percent and 2 percent of those eligible, respectively. The evaluation in this paper indicates that taxpayers indeed may be wise in ignoring this particular tax incentive scheme. In short, the attraction of this program in inducing incremental personal saving may be overrated. The income tax advantages in participation superficially may appear attractive, but a closer examination shows that the relative dollars-and-cents advantages in fact may be quite nominal. Moreover, these "personal pension" programs have severe constraints on liquidity and on forms of investment, and these restrictions must be weighed against any supposed increase in investment yields because of preferential income tax treatment.

A. THE UNIVERSAL PERSONAL-PENSION DEDUCTION: RELATIVE NET YIELD ADVANTAGES IN PARTICIPATION

The present individual income tax does tend to discourage personal saving for future needs—by the compound effect of permitting current deductions on borrowing charges, coupled with the taxation of interest earnings on savings.⁵ This announcement effect can be mitigated by permitting special income tax treatment of selected transactions, thereby increasing their net (aftertax) yields on taxpayer investment. This difference in net yields is the stimulus for increased personal saving. Response will depend on the interest elasticity of personal saving to changes in net yields, and, of course, the magnitude of change in yield.

Given the mechanics of alternative income tax treatment, one can compare the relative net yield advantages of two or more taxpayer alternatives. Some abstractions are in order, however, to provide a consistent basis for comparison. Assume initially that a taxpayer is restricted in investment to a specific corporate bond, but has income tax alternatives in purchasing and realizing income from these bonds. The gross (before tax) yields, risk, and liquidity aspects of the tax options are equal, but alternative tax treatment may affect net (after-tax) yields.

Assume further—for comparative purposes—that the taxpayer withholds a specified sum from gross income, for retirement saving purposes.⁶ This is not to suggest that the individual in question is a "target" saver, because we in fact are interested in changes in the rate of personal saving as a consequence of the income tax incentive. Rather, this model illustrates the relative change in net yields, as the basis for taxpayer response.

The taxpayer's savings would be subject to "standard" tax treatment if he had no tax options. This approach (designated option A) may be termed the "no tax break" situation. The individual has set aside a certain sum from gross income, but current income taxes first must

⁵ Alan Williams, *Public Finance and Budgetary Policy*. (New York, 1963), pp. 62-65.

⁶ One alternatively can structure the argument with retirement saving as a function of disposable income. The advantage of tax deductibility can be illustrated as an addition to the initial investment; e.g., $R_d (1 + \frac{r}{1-r}) = R$, where R_d = desired savings from disposable income, and R is the actual increased basis for investment because of the current deduction.

be paid on this saving. The net (aftertax) basis for investment does generate annual income, but these realized gross yields are immediately subject to tax under the "standard" tax approach. The individual does have a final fund at age 65 after all this income taxation, and no further income tax is levied on this accumulated net wealth at time of withdrawal.

To illustrate, assume that our individual intends to save \$400 from gross income. Income taxes first must be paid, and \$260 will remain as the basis for retirement saving if our taxpayer faces a 30-percent marginal tax rate. The taxpayer invests in 6-percent corporate bonds, subject to an annual levy on current earnings of the same 30-percent marginal tax rate. If our saver presently is 35 years old, his final fund at age 65 from this single contribution will be \$962. In order to compare alternative tax effects, we must relate this final fund to the initial gross saving of \$400. Our individual finds that because of income taxes his effective net (aftertax) yield is 2.97 percent of his initial \$400.

Now, assume that the individual income tax is amended to permit an alternative tax treatment (designated option B) of personal saving. This alternative summarizes the essential features of the "personal-pension" deduction both under the U.S. Self-Employed Individuals Tax Retirement Act and the universal Canadian personal saving program. First, the individual can deduct his allowable personal-pension saving from current taxable income, thereby avoiding any present tax liability. Second, earnings on investment are subject to tax liability only at ultimate withdrawal. Taxes also are levied on the original principal on withdrawal.

Our figurative saver now can invest his entire \$400 in the same 6-percent corporate bonds. He will find at the end of 30 years that his gross final fund has grown to \$2,297. Our individual now must include these moneys in reportable income at time of withdrawal. Assume that the entire final fund is withdrawn at age 65, and that the individual's marginal tax rate is 18 percent. This reduced marginal tax rate reflects the pensioner situation of lower total reportable income in retirement years. For his efforts, the taxpayer now has his \$1,884 net purchasing power at withdrawal. This represents an effective net (aftertax) yield of 5.30 percent on the original \$400 of gross intended saving.

One compares the net—after all taxes—final retirement moneys, illustrating the differential effect of alternative tax treatment.

R = Dollars of retirement saving from gross income (\$400).

r = Marginal tax rate during contribution year (0.30).

i = Nominal annual gross yield on investment (0.06).

q = Marginal tax rate on investment annual gross yield (0.30).

t = Marginal tax rate at time of withdrawal (0.18).

m = Number of years between contribution and withdrawal (30).

Standard option A: $[(1-r)R][1+i(1-q)]^m$ A = net final fund.

Deduction option B: $(1-t)R(1+i)^m$ B = net final fund.

$$Z = \frac{B}{A} = \frac{(1-t)(1+i)^m}{(1-r)[1+i(1-q)]^m} = \left(\frac{1-t}{1-r}\right) \left[\frac{1+i}{1+i(1-q)}\right]^m$$

The effect of changes in each parameter on Z can be noted.⁷ The relative advantage of a "personal-pension" deduction becomes more attractive as the ratio of current-year marginal tax rate to expected withdrawal-year marginal tax rate (i.e., r/t) increases.⁸ Note that tax option B still will give a greater net final fund even when the respective rates are equal ($r=t$), because of the tax shelter.⁹

The net yield advantage of the personal pension deduction can be quite attractive to a taxpayer with a high current marginal tax rate, if this were the only preferential tax treatment option. This can be illustrated for arbitrary values $q=0.3$ and $i=0.06$.

The essential point is that a taxpayer is not restricted to these two income-tax alternatives; there are other attractive options to increase net (aftertax) yields. Capital gains is a familiar alternative. In capital gains as in the standard approach, an individual establishing a retirement-saving fund first must pay income taxes on current earnings before investment. If the interim earnings on principal are not "realized" for tax purposes until retirement, these sheltered earnings will be subject to a capital gains marginal tax rate, assumed to be $0.5t$ at withdrawal.¹⁰

Using the same illustrative parameters as in the first two tax options, our taxpayer will realize a \$1,409 net final fund, or an effective net (aftertax) yield of 4.29 percent. The net final fund under capital gains option C is calculated as the original net investment and accumulated earnings, minus the capital gains marginal tax rate on earnings at the time of ultimate withdrawal.

$$C = R(1-r) (1+i)^m - \frac{t}{2}[R(1-r) (1+i)^m - R(1-r)]$$

$$= R(1-r) (1+i)^m \left(1 - \frac{t}{2}\right) + \frac{t}{2}R(1-r)$$

$$Z' = \frac{B}{C} = \left[\frac{1-t}{1-r} \right] \left\{ \frac{1}{1 - \frac{t}{2} \left[1 + \frac{1}{(1+i)^m} \right]} \right\}.$$

The "personal pension" deduction (option B) now is compared with other available tax options (e.g., capital gains option C). The relative effective net yield advantage of the "personal pension" deduction is reduced by over 40 percent in the illustrative example. However, one cannot state categorically that the relative effective net yield

⁷ $\frac{dZ}{di} > 0$, $\frac{dZ}{dm} > 0$, $\frac{dZ}{dq} < 0$; $0 \leq i, q, r, t \leq 1$.

⁸ Specific values of the marginal tax rates also are significant in addition to the absolute differences. Thus the advantage is greater when $(t, r) = (0.2, 0.5)$ than when $(t, r) = (0.1, 0.4)$. The advantages of preferential tax treatment is a function of the level of potential tax liabilities.

⁹ Assume $q=0.3$, $i=0.06$. If marginal tax rates in the contribution year and payoff year are equal, the payoff advantage of B over A is

M Earning years	$Z = \frac{B}{A}$
10	1.18
20	1.40
30	1.66

¹⁰ This is an oversimplification of capital gains rates, but will serve for illustration.

advantage will be reduced ($Z' < Z$), because of the number of parameters involved.¹¹ The attractiveness of the tax shelter in the "personal pension" deduction, though, is significantly reduced.

Taxpayers have other preferential tax treatment options in addition to this orthodox capital gains approach. The "personal pension" deduction should be compared with the next most attractive tax option to illustrate the relative net yield advantage, if any, of the deduction program. A comparison limited to the "personal pension" deduction versus the standard "no-tax-break," tax treatment (B/A) certainly gives a distorted view of the relative attractiveness of the proposed pension scheme.

B. INVESTMENT AND LIQUIDITY CONSIDERATIONS

All aspects of investment other than the tax treatment of gross yields were assumed equal in comparing the yield advantages of tax options. In other words, the taxpayer was assumed to have complete freedom in his choice of investment. The preferential income tax options, then, would affect only net (after tax) yields.

In reality, preferential tax treatment may be combined with one or more investment constraints. These restrictions will reflect the intended policy objectives of the program. A principal object of both the current U.S. self-employed deduction and the Canadian universal pension deduction is to promote retirement saving—not speculative investment. Restrictions limiting the nature of investment and constraints against premature withdrawal before retirement, therefore, are consistent with the above goal. However, one must weigh these adverse features against any net yield advantage, if these constraints are unique to the "personal pension" deduction.

Both the U.S. and Canadian deductions prohibit "speculative" or personal business investment, to minimize the risk of principal. This restriction may be reasonable, but it imposes a risk-component stereotype on alternative forms of investment. Taxpayers may have "unapproved" investment opportunities generating greater gross yields (discounted for risk premiums) than permitted investment. Our illustrative taxpayer may have an opportunity to invest in real estate with an expected effective net yield of 6.50 percent under capital gains, instead of the 5.30 percent effective yield from corporate bonds under the "personal pension" deduction. The capital gains option presently is available to the taxpayer; if he chooses this route, the "personal pension" deduction will not have increased the rate of personal savings.

Moreover, independent businessmen and farmers by nature may be risk takers, and, therefore, may choose to gamble on business expansion even if one could demonstrate that expected returns from the alternative "personal pension" deduction were greater. But, the important consideration again is that nonpermitted forms of investment may

¹¹ $Z' < Z$ if $1 - \frac{t}{2} \left[1 + \frac{1}{(1+i)^n} \right] > \left[1 - \frac{iq}{1+i} \right]^n$.

qualify for alternative unique preferential tax treatment. The "personal pension" deduction is but one option in the special subset of opportunities to minimize income taxes.

In addition to restraints on forms of investment, "personal pension" deductions generally severely limit or outright prohibit the withdrawal of funds before some specified retirement age. This is an undesirable feature from the saver's point of view, as retirement funds normally would provide a concurrent contingency fund.

Younger participants in the "personal pension" program are faced with a longer period of locked-in funds, yet there is no compensating adjustment in the tax inducement mechanism to reflect this variable feature. Consequently, one may postulate that participation in such a program—*ceteris paribus*—is directly related to the age of the taxpayer; that is, inversely related to the number of illiquidity years between contribution and retirement age. An analysis of Canadian participation, summarized in an appendix, does not reject this hypothesis.¹² The tests indicate that personal pension contributions are significantly related to the age of the taxpayer.¹³ Individuals initiating a retirement program late in life will have few remaining years to accumulate an adequate fund to supplement social security.¹⁴

As a final note, preliminary analysis of Canadian participation data indicates that individuals covered by company contributory pensions will reduce "personal pension" contributions accordingly, and to some degree the two programs are substitutes.¹⁵ If this observation is valid, an expansion of the contributory pension movement will offset some increases in personal saving attributable to the "personal pension" deduction (at least among employees eligible for both programs).

The introduction of new income tax inducements, then, may not significantly increase the rate of personal retirement saving. Certainly this is the experience of the "personal pension" deduction instituted on a limited basis in the United States and as a universal taxpayer deduction in Canada. An appreciation of the true relative net yield advantages to participation, coupled with investment and liquidity constraints, may explain this small taxpayer response. Individuals generally have existing alternatives that discount the superficial attractiveness of the "personal pension" deduction.

¹² The U.S. individual income-tax returns do not record the age of the taxpayers, but Canadians are requested to report their birth year on their respective returns. I gratefully acknowledge the interest and cooperation of the Canadian Department of National Revenue (Taxation Division) in providing detailed information on taxpayer participation, subject to departmental policies regarding the disclosure of the taxpayer's identity.

¹³ The age distribution of the Canadian labor force is skewed to the younger workers, and this bias tends to reinforce the above participation date. Canada, "Census of Canada, 1961, Labour Force: Employment Status by Age and Sex" (catalog 94-502), Bulletin 3.1/2, Mar. 31, 1964.

¹⁴ I assume in this paper that the intent of a "personal pension" deduction is to increase the rate of personal saving. While propensities to save may be relatively constant over time, motives for saving may vary through the life cycle. Retirement saving, therefore, may be an increasing function of age, regardless of the "personal pension" deduction. If this program is to be successful, however, the effect of the deduction presumably will be to increase the rate of retirement saving at all age levels. The negligible rate of participation is the Canadian program by taxpayers under age 40 (adjusted for income) tends to support the illiquidity hypothesis—that there is more to this program than increases in net (after-tax) yields.

¹⁵ The subsample of taxpayers studied declared company pension and personal pension contributions significantly under any statutory ceilings, and therefore were free to add to the amount of "personal pension" contribution at their discretion.

APPENDIX: STATISTICAL ANALYSIS

This is an analysis of the relation between taxpayer age and income tax deductions for personal-pension contributions under the Canada Registered Retirement Saving Plan, 1964. All tests are significant at the 1 percent level. Dollar Registered Retirement Saving Contributions (S) is related to taxpayer assessable (adjusted gross) income (Y); Taxpayer age (A):

- (a) Total all participants: 90,585.
Random sample size: 22,258 records.

$$\begin{aligned} S &= a_0 + b_1 Y + b_2 A \\ &= -31.29 + 0.05Y + 1.10A \\ &\quad (0.0004) \quad (0.22). \end{aligned}$$

Mult. corr. coefficient 0.667; F value, 3895.

- (b) Total Employee Participants: 58,481.
Random sample: 7,934 records.

$$\begin{aligned} S &= 128.08 + 0.05Y + 2.78A \\ &\quad (0.0006) \quad (0.56). \end{aligned}$$

Mult. corr. coefficient, 0.654; F value, 2967.

- (c) Total Self-Employed Professional (Occupation) Participants:
1964: Random Sample: 10,409 records.

$$\begin{aligned} S &= 39.35 + 0.04Y = 0.51A \\ &\quad (0.0005) \quad (0.09). \end{aligned}$$

Mult. corr. coefficient, 0.614; F value 3142.

OLD-AGE INCOME ASSURANCE BY LIFETIME INCOME SPREADING WITH DEFERRED TAXATION AS THE NATURAL TREATMENT

BY RAY M. PETERSON, F.S.A.

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I. INTRODUCTION

In December 1956 the Business Committee on National Policy of the National Planning Association stated, in connection with a staff survey of private pension plans:

The task of adequately exploring the complex and difficult issues of national policy involved in the broader and longer term economic and social consequences of the growth of private pension funds requires resources and access to information greater than those normally possessed by private research organizations. Hence, the NPA Business Committee urges a congressional committee—perhaps the Joint Economic Committee—to undertake such a detailed and comprehensive review in the near future.*

*Also, note 1952 study prepared for Joint Committee on the Economic Report entitled *Pensions in the United States*, under direction of Robert M. Ball, now Commissioner of Social Security.

It is gratifying now to have the Joint Economic Committee, however belatedly, take up this challenge.

Noting that practically all of the individual contributors to this symposium come from the halls of académie, this writer, a non-academic, feels intellectually complimented to find himself amidst this school of scholars. Without presuming to explain the composition of this group, one may observe that academics are believed, correctly or not, to have more leisure for theoretical meditation than nonacademics and, indeed, may be expected to "publish or else." This then leads to the query—Is there risk that their contributions will be considered as the theory of a leisure class composed during the leisure of a theory class? In view of the great practical importance of the issues being explored, it is earnestly hoped that the several contributions will not prove to be merely theoretical exercises but will be sources of added insights that aid materially in identifying practical solutions and answers within a framework of a developing economy that is responsive to the uniquely American ideals and objectives of a viable free enterprise system that is also motivated by a recognition of social responsibility. This writer certainly hopes his contribution will serve such practical ends.

In this paper, the term "private pension plans" refers to "qualified" pension and profit-sharing plans covering workers in the private sector and the term "employer-instituted pension plans" refers to the aggregate of such private pension plans and plans covering employees of Federal, State, and local governments.

The 1967 report of the Joint Economic Committee includes the following provocative statement regarding income maintenance:

Transfers of money from higher income families to lower income families and from those with current earning power to those whose earning power is limited through no fault of their own is fast approaching one-tenth of the total of the Nation's output per year. These programs are predominantly public, but there are, in addition, many private programs, most of which enjoy substantial tax benefits to assist them.

In recent years, many questions have been raised about this system of income maintenance, with many contending that the system is ill coordinated, capricious in its effects, inefficient, costly to administer, arbitrary in its standards for deciding who is to benefit, and, in general, interferes with efficient resource allocation, and hence reduces overall efficiency of our economy.

The committee hopes that the study now in progress by our Subcommittee on Fiscal Policy will result in a new set of standards or criteria for judging measures for income maintenance that will be more equitable, efficient, coordinated, and flexible than the present morass of inadequate and often irrelevant programs.

Although this statement may be considered a premature and unduly harsh prejudgment of the nature of existing old-age income programs "before all the returns are in," including the contributions of the current symposium, it does express, as abstractions, desirable objectives

in its plea for programs that are "equitable, efficient, coordinated, and flexible." A more thorough examination and better understanding may well reveal that present programs now have many equitable attributes, an efficient allocation of accumulated invested funds, a purpose to achieve a fair coordination with OASDI benefits, and a highly desirable range of flexibility in designing plan features. As to the alleged "morass * * * of programs" and noting that "morass" is defined in Webster's Seventh New Collegiate Dictionary as "something that traps, confuses, and impedes," it may be found that some of the traps and impediments are rooted in tax laws and regulations and that the confusion may arise, in part, from incomplete study and faulty understanding.

This paper aims to serve some of the objectives expressed by the foregoing statement of the Joint Economic Committee by identifying and examining an equitable and uniform principle of deferred income tax treatment of provisions for old-age income that facilitates lifetime income spreading for all persons as the natural method of tax treatment.

II. LIFETIME INCOME SPREADING

PRELIMINARY OBSERVATIONS

The principle of taxing personal income on an averaging basis is now found in our tax laws in a limited form. Social scientists tell us that we should expect a continuing decrease in working-life expectancy and an associated pronounced increase in the number of nonworking years of so-called old age. In view of this prospect, we need to recognize the importance of the application of the income spreading principle on a lifetime basis with particular reference to provisions for old-age income assurance. This principle may be expressed simply and briefly as tax-free input and taxable output. The writer, in 1959, described this principle as the "payout principle" in these words:

In its purest form * * * may be expressed as follows: Contributions and investment return thereon which are irrevocably devoted to the provision of retirement life income are free of income tax when made or earned but the entire retirement income is included in taxable income when received * * *. The payout principle is sound for two fundamental reasons: (i) the encouragement of savings accumulations for retirement purposes constitutes a strong force working to provide additional capital from which, in turn, may be gained the increase in productivity needed in a nation's economy to provide the desired retirement benefits; (ii) it is fair and reasonable that an individual's income should be spread and acknowledged as realized over the entire period of life and not limited to the active earnings years. It is proper that an individual pay an income tax only when income is in hand and available for living costs.

It is important to distinguish between forms of savings which a person may use freely in a manner and at a time of his choosing, and a form of savings devoted irrevocably to retirement benefits. In order to avoid objectionable and unfair

discrimination, the payout principle should apply only to retirement program where the benefit of accumulations can be taken only as a life income after retirement or is subject to tax penalties if taken in any other form. A "locked-in" status should exist.¹

For purposes of this discussion, the underlying theme of lifetime income spreading is that, by appropriate tax treatment, all persons, through individual, group, or institutional programs, public and private, may spread the labor rewards of working years over their entire lifetime, including the nonearning years of retirement, and pay an income tax only as such income and accumulated investment returns thereon are, in fact, received. No distinction should be made as to the source of the contributions—that is, whether from the individual or his employer.

The following statements from the Joint Economic Committee print, "Old Age Income Assurance: An Outline of Issues and Alternatives," relate to this discussion:

The tax treatment accorded both retirement income and saving for retirement has the double objective of encouraging taxpayers to practice lifetime consumption averaging and of enabling aged taxpayers to maintain a higher level of consumption with a given income than they could otherwise. (P. 6.)

Categorical taxation, like categorical public assistance, is faulty in principle. (P. 31.)

At present, there is categorical application of this principle, and consequent discrimination, since it exists only with respect to employer contributions under employer-instituted pension plans and contributions made under the Self-Employed Individuals Tax Retirement Act. Three major areas require attention; namely, (1) employee contributions under employer-instituted plans, (2) retirement contributions by working individuals who are not covered by such plans and investment accumulations thereon, and (3) benefits and employee tax contributions under the OASDI system.

Although the OASDHI system is financed on a different basis than funded employer-instituted pension plans, the application of the lifetime income spreading principle to such system has validity from the viewpoint of the individual worker who contributes to the system during his working years in order to enjoy benefits during his nonworking years.

The general acceptability of this principle is demonstrated by the fact that its application is worldwide in many different economic environments. For contributory private pension plans, employee contributions are tax deductible, in full or with limits, in Canada, Belgium, France, Germany, the Netherlands, and the United Kingdom.² For national compulsory, old-age pensions, employee contributions are tax deductible and benefits are taxable in Austria, Belgium, Can-

¹ "The Payout Principle of Taxation for Retirement Income Programs Should Be Applied Without Discrimination," *Journal of the American Society of Chartered Life Underwriters*, spring, 1959, Ray M. Peterson.

² John K. Dyer, unpublished report of September 1966.

ada, Denmark, Finland, France, Germany, Ireland, Japan, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland, and the United Kingdom.³

TAX-DEDUCTIBLE EMPLOYEE CONTRIBUTIONS UNDER EMPLOYER-INSTITUTED PENSION PLANS

As a measure that is an affirmative response to the current and laudable interest by government officials and others in improving the performance of private pension plans, employee contributions under qualified plans should be tax deductible provided they are "locked in"; i.e., nonwithdrawable or withdrawable only with a tax penalty. Such a measure would have several distinct advantages:

(i) Discrimination against employee contributions, vis-a-vis employer contributions, would be removed;

(ii) The present discouragement of contributory plans would be discontinued;

(iii) The prospect of greater benefits would be enhanced since the level of benefits for contributory plans is generally higher than that for noncontributory plans as indicated by the report of McKinsey & Co.;⁴

(iv) Contributing employees would have identifiable and fully vested equities that are in terms of dollars and that would be properly considered by employees as their personal savings for retirement purposes;

(v) Vested benefits, derived from employer contributions, now frequently lost by withdrawal of employee contributions upon employment termination, would be preserved;

(vi) The income spreading operation would be completed since investment earnings on employee contributions under employer-instituted pension plans are now free of tax until the employee receives a benefit;

(vii) Since the contribution input of private pension plans would be treated uniformly, then, for the purpose of developing appropriate rules for integrating private plan benefits with OASDI benefits to meet the nondiscrimination requirements of the law, the question, artificial in many circumstances, of just who was paying the cost or bearing the burden is not so evident a consideration.

TAX-DEDUCTIBLE CONTRIBUTIONS FOR NONCOVERED PERSONS

Persons not covered by employer-instituted pension plans or not eligible for SEITRA plans should have the opportunity to set aside tax-deductible contributions from earned income for retirement purposes on a basis that assures dedication to such purposes. Funding arrangements should include the use of the facilities of banks, trust companies, life insurance companies, mutual funds, special Government bonds, etc. Statutory limits should be fixed and appropriately adjusted to recognize any contributions or benefits under employer-instituted pension plans. In Canada, section 79B of the Income Tax

³ Social Security Bulletin, August 1966, p. 11.

⁴ Corporate Retirement Program, McKinsey & Co., Inc., 1965.

Act authorizes registered retirement savings plans for individuals under which annual contributions of 20 percent of earnings, subject to a maximum of \$2,500 a year, may be made. Adjustments are made for contributions to employer-sponsored pension plans.

Support of the two foregoing recommendations as well as extension of the opportunity for deferred taxation of provisions for retirement for the self-employed, as enacted by SEITRA, was ably made in 1943 by an eminent legal scholar, Dean Erwin N. Griswold of the Harvard University Law School. Reference to Dean Griswold's views was made in a scholarly work published in 1949 by the Industrial Relations Counselors, Inc., entitled "Impact of Taxes on Industrial Pension Plans," written by Rainard B. Robbins. A paper by Dean Griswold entitled "The Tax Treatment of Employees' Contributions to Pension Plans," published in the Harvard Law Review of December 1943, was cited by Robbins and referred to as follows:

Dean Griswold presented a very thoughtful note on this subject in the *Harvard Law Review* in which he takes the broad point of view that it may be unwise "to tax the employee currently on what is actually so remote, though important, a benefit." He points out that from the employee's standpoint a pension is income when he receives it and that *his earnings during productive years must for practical purposes be spread over his whole remaining life*: "What he receives after his retirement is in reality his income then, for then is when it comes in to him. To tax him on it at the top bracket of the graduated rates of his earnings is an unfair failure to recognize the economic facts." Griswold contends that there is no substantial reason for distinguishing taxwise between employer and employee contributions and that "in both cases, the employee's current productive capacity is being utilized to make provision for his retirement." Suggesting safeguards to assure that such payments are dedicated to retirement income and cannot be used otherwise, Griswold states firmly his conviction that taxing statutes should be expressly aimed to give employee contributions the same tax treatment as employer contributions. He goes further and suggests inclusion of the self-employed. In part he writes:

"As long as the plan is really a pension plan, the reasons which have already led to the conclusion that the employer's payment in such case should not be taxable to the employee until the employee actually receives it, should lead to the same conclusion with respect to the similar payments which are withheld from the employee's wages, either under State or Federal law or under the terms of the employment contract. To achieve this result, the tax statutes should be expressly amended so as to provide that amounts paid by an employee to provide bona fide pension benefits after his retirement should be deductible from his current income * * * With such limitations, provision could also be made for deduction of pension payments made by the self-employed, or by employees whose employers do not provide a pension plan." [Emphasis added.]

OASDI BENEFITS AND EMPLOYEE TAX CONTRIBUTIONS

Social security benefits are not includable in taxable income on the basis of an administrative ruling of the Internal Revenue authorities. Appendix I hereof presents some views and discussion regarding the origin of this ruling. It appears that there is a difference of opinion between a member of the Committee on Ways and Means and a Treasury official and even differences of opinion within the Treasury Department. There is agreement that the Congress, by appropriate legislation, could make social security benefits includable in taxable income.

The application of the lifetime income spreading principle to the OASDI system would call for the tax deductibility of employee tax contributions along with the inclusion of benefits in taxable income. If the occasion arises when serious consideration is being given by the Congress to general revenue support for the OASDI system, such tax treatment, aside from its own real merits, deserves first consideration as an appropriate liberalization that is a strain on general revenues but is more logical than direct general revenue support.

If this change in the tax treatment of OASDI benefits and employee tax contributions were made at a time of a modest increase in gross tax contributions and a general increase in benefits, employee net tax contributions could remain substantially unchanged and the increase in benefits would make the taxation of benefits more acceptable (or less unacceptable) to those who have been receiving tax-free benefits. For example, if an added 0.6 percent of taxable payrolls for employees and for employers were made effective, an additional \$3.5 billion to \$4 billion would be available for increased benefits—about a 15-percent increase. About \$1.75 billion to \$2 billion would come from employers which would be tax deductible, employees' net tax contributions would be a little less than presently scheduled and net contributions from general revenues of \$2 billion to \$3 billion would result after taking account of added revenue from taxable benefits and the effects of the slightly lower net employee tax contributions.

Under this proposal, the employee should have a specific deduction of the amount of tax contribution similar to regular exemptions; for example, the deduction would appear as an additional \$150 to \$400 deductive amount, depending upon gross earnings rate and the higher social security tax rates adopted. For persons who have no taxable income from which to deduct the social security tax contribution, an actual tax credit should be provided based on the initial marginal tax rate, now 14 percent. When a taxpayer must identify in his tax return the exact amount of social security tax contribution in order to get the deduction, he will be much more aware of its magnitude than under the present automatic payroll deduction practice. A real cost consciousness results. This tax-deductible arrangement is more favorable, of course, at the higher levels of earnings than at the lower levels because of the progressive income tax rates. Those in the higher income brackets, however, would be those persons, generally, who would, in fact, pay a tax on their social security benefits when received, thus producing a substantial order of equity.

The inclusion of OASDI benefits in taxable income would raise two questions: (1) The need for recognition of past social security tax contributions paid out of taxable income, and (2) the possible (perhaps, undoubted) vigorous dissatisfaction with the taxation of a benefit that has been received for some time on a tax-free basis. As to the first question, we should observe that, as indicated by actuarial note No. 20, June 1965, of the Social Security Administration, the employee tax contributions (without interest) for those going on old-age benefits in very recent years have been, for random samples, no more than 6 percent of the prospective benefit payments. Hence, a reasonable order of equity would be achieved by, say, including benefits in taxable income only after they have been in receipt for 1 year. The vast majority of present recipients would already have received tax-free benefits in excess of their tax contributions paid from taxable income. As to the second question, an increase in benefits, as indicated above, would generally serve as an offset to the effect of inclusion of benefits in taxable income, except, perhaps, for those in the higher income brackets who would have no legitimate cause for complaint in view of the undeserved tax bargain they have been enjoying.

SPREADING OF INCOME FROM SECOND CAREERS

The income spreading considered in the foregoing discussion has related generally to spreading the income of pre-age 65 years to the post-age 65 years. There is need, however, for positive encouragement of productive employment after age 65 and also for the opportunity for persons who have reached age 65 and desire to embark on second careers, to spread earned income into later years to level out income and to serve as an offset to the erosion of inflation. The following proposal, which the writer has not seen proposed before, deserves serious consideration as a means of implementing these objectives:

On the basis of the principles of the Self-Employed Individuals Tax Retirement Act, permit a person over age 65 to defer income tax on a substantial part of earned income plus an amount equal to, say, 20 percent of retirement income derived from employment prior to age 65. (If social security benefits should become includable in taxable income, 100 percent of such benefits, not denied by the retirement test, should be available for tax deferment.) Taxation of investment income with respect to such amounts would also be deferred as under SEITRA. An irrevocable election to defer income a specified period of years should be required, say 5 or 10 years. Income tax (or estate tax) would eventually be paid on such deferred income and investment earnings thereon.

LUMP-SUM SETTLEMENTS AT RETIREMENT

The present law permits lump-sum settlements in lieu of a lifetime retirement income. Such a settlement is taxed as a long-term capital gain under employer-employee plans provided, generally, that 100 percent of the pension value is taken. So far as serving the end of providing old-age life income, the law is deficient on two counts: First, it is wasteful in that it virtually compels the cancellation of all re-

tirement income values in order to enjoy the capital gains tax treatment; second, it fails to provide assurance that pension contributions, or a major part thereof, are irrevocably dedicated to providing old-age life income. In order to improve this situation, serious consideration should be given to adopting a tax treatment and limitations similar to those in Canada and the United Kingdom where no more than 25 percent of pension values may be taken as a lump sum. Although such lump sum is tax free in these countries, it would be fair to apply the tax treatment that now is in effect in the United States for SEITRA plans.

III. THE NATURALNESS OF THE FEDERAL INCOME TAX TREATMENT OF EMPLOYER-INSTITUTED PENSION PLANS

PRELIMINARY OBSERVATIONS

In 1965, \$14.26⁵ billion was contributed to employer-instituted pension plans, \$7.82 billion under private qualified plans and \$6.44 billion under plans covering Federal, State, and local government employees. As estimated by the writer, the part of those contributions made on a collective basis; i.e., contributed with respect to the entire group of employees and not with respect to the individual in the form of employee contributions or by the purchase of annuities, was \$6.2 billion for private qualified plans and \$3.6 billion for Federal, State, and local government plans. Thus, nearly 70 percent of total contributions for employer-instituted plans were on a collective basis. The deferred tax treatment (i.e., only taxing benefits as received) of employer contributions and investment earnings with respect to both employer and employee contributions applies to all these plans. The collective nature of nearly \$10 billion of contributions for employer-instituted plans is an important fact to recognize in appraising the Federal income tax treatment of these plans. (Under the railroad retirement plan, not included above, there is a completely free Federal income tax ride, except for nondeductible employee contributions, since employer contributions and investment earnings produce no taxable income for the employee and benefits are exempt by law from Federal income tax. Total contributions in 1965 amounted to \$0.63 billion, one-half paid by the railroads on a collective basis.)

Contributions made on a collective basis are commonly determined by actuarial assumptions that can include rates of mortality, disability, withdrawal, salary progression and retirement. It is evident that under such an "averaging" process, there is no precisely determinable part of the contributions that can be said to have been made, in fact, for or on behalf of a particular individual. Similarly, it would be impossible to allocate to an individual employee, on a fair and accurate basis, a part of current investment earnings of a pension fund. The difficulty of allocating employer contributions and investment income to specific employees was recognized by the 1967 Royal Commission on Taxation of Canada in these words: " * * * such an allocation (of

⁵ "Private and Public Pension Plans in the United States," 2d edition, March 1967, Institute of Life Insurance.

employer contributions) would in many cases be difficult if not impossible" (p. 431) and "in many cases it would be very difficult to allocate the employer's contributions or the property income to the beneficiaries." (p. 435). Yet, U.S. Government officials, in seeking to demonstrate the benefit of deferred taxation to employees, start with the premise that such allocations could be made. Appearing before the Subcommittee on Fiscal Policy in May 1966, Assistant Secretary of the Treasury Stanley S. Surrey, in the following words, spoke of "deferring" an employee's "tax liability" thus clearly implying that a current tax liability did exist initially but was deferred by specific provisions of the law:

A pension or profit-sharing plan is a part of the employment contract. Often the plan terms are negotiated in collective bargaining. Whether or not negotiated, they clearly affect the wage rate. From the employer's standpoint, this is part of the labor cost. From the standpoint of the employee, pension or profit-sharing benefits are an element in comparing total compensation between different employments.

The development of pension and profit-sharing plans has without question been aided by favorable tax treatment, which has the *effect of lowering the tax liability* when compensation is paid in this manner. The tax advantage given to these plans is the basis of the provisions in present law imposing certain qualifying conditions on a pension or profit-sharing plan. Since the provisions applicable to pension and profit-sharing plans are substantially similar, I shall simply refer to pension plans.

* * * Under qualified employer-financed plans, the employees are not currently taxable either on the amounts contributed by employers to the plans or on the investment income of the pension fund. The *employee's tax liability* for these amounts is *deferred* until he retires and receives benefits from the plan, at which time his effective tax rates are apt to be lower.

* * * Since the employer's contributions and investment income are not taxable as current income to the employee under qualified plans, even where the pension rights are vested, tax deferment represents tax savings to employees. It creates opportunities to obtain more liberal pensions than if the employee received *equivalent wages in lieu of contributions and had to finance their own pensions*.⁶ [Emphasis added.]

Mr. Surrey's argument rests on an unreal assumption that, under private plans as they, in fact, exist today, it is feasible and possible to identify an "equivalent wage." If Mr. Surrey's approach is valid for private qualified plans, it is equally valid for the plans covering Federal, State, and local government employees. The members of the civil service retirement plan "enjoy" the same kind of alleged deferment of tax liability as he attributes to persons covered by private

⁶ "Private Pension Plans," hearings before Subcommittee on Fiscal Policy of the Joint Economic Committee, May 1966, pp. 412-413.

qualified plans, such "privilege," so he says, provided by special tax provisions for such plans. But, the tax deferment for Federal employees must arise from some "divine right" since no specific "favorable" tax legislation exists. If it is appropriate to impute an equivalent wage to collectively made employer private plan contributions, with all its obscurity, it would be equally appropriate to impute such value to the economic current accrual value of civil service pensions, whether the Government puts up the money or not. The same point applies to the current accrual value of the unfunded benefits of the military service retirement system which may be in the neighborhood, on the average, of 30 percent of payroll. Dr. Roger Murray made this point effectively in a talk on February 9, 1967, before the American Pension Conference. He said:

I should remind Dr. McClung that the tax advantages to the generals and admirals of not taxing their accruing benefits as additional income is just as real as when employer contributions to pension plans are not recognized when made on behalf of Governors, Congressmen, and business executives.

THEORETICAL MATHEMATICAL CONSIDERATIONS

There is need to recognize that pension benefits provided under employer-instituted plans, while a form of compensation, represent deferred compensation that is quite different in character from current compensation; i.e., salaries and wages, and are benefits that, under the doctrine of constructive receipt, should be includable in taxable income only when received. Such benefits are designed to serve a different economic purpose—not to provide current income but to provide retirement income. Their tax treatment should recognize their true and unique character. Any attempt to apply the tax principles that are appropriate for wages and voluntary savings derived therefrom is merely a theoretical, however, interesting, exercise.

In Mr. Surrey's statement, he mentions the theoretical study of this kind that appeared in the 1965 Report of the Cabinet Committee on Corporate Pension Funds:

The Cabinet Committee on Corporate Pension Funds measured the size of a monthly pension that \$100 of annual employer's contributions can buy under present tax treatment and compared it with a monthly pension obtained from an equivalent \$100 of annual wages, which, after tax, is invested by the employee himself. The pension fund case resulted in a \$74 monthly pension as compared to a \$52 monthly pension in the case of the employee investing his wages after tax and paying tax on his investment income.⁷

The report also illustrated this relationship in terms of the level annual contribution required for 40 years to produce \$100 a month for an employee. It stated:

If an employer paid his employees wages which were taxed, and from which the employee made pension contributions,

⁷ Ibid., p. 413.

and if the earnings of the pension fund were also taxed, the employer would have to pay \$194 a year in wages to enable the worker to buy his \$100-a-month pension.

If, as permitted under present rules, the employer makes contributions directly to the pension fund not subject to tax, and if the earnings of the fund are also free from tax, a pension of \$100 a month can be financed with an annual contribution of \$136. The cost is only 70 percent as much as in the first example because of the twofold saving on the corporate contribution and on the earnings of the fund.⁸

Appendix II hereof is an extended development of the "cost" demonstration of appendix B of the Cabinet Committee report displaying the theoretical benefit of deferred taxation for a 25-year, as well as a 40-year, accumulation period and with respect to several different situations.

The two situations described in the two foregoing quoted paragraphs are called case I and case III, respectively, in appendix B of the Cabinet Committee report. (The same identification is used in appendix II of this paper.) The stated "70 percent" relationship gives an exaggerated picture mainly because the average period of accumulation is probably no more than 25 years (not 40 years) and also because the formula in the report (p. 5 of appendix B.) for case I is incorrect in that the assumed income tax rate on investment earnings after retirement is taken as 18.5 percent (the same as before retirement) instead of $7\frac{1}{2}$ percent, the stated basic assumption. For a 25-year accumulation period, the ratio of the case III figure to the case I figure is 78 percent; i.e., \$311.50 is 78 percent of \$400.50. The "cost" percentage relationship of case III to case I would be less if a higher interest rate than 4 percent were assumed; e.g., the 40-year period percentage of 72.5 percent (corrected from 70 percent), based on 4-percent interest, is 68.5 percent assuming a 5-percent interest rate. Furthermore, such percentages would be less for marginal income tax rates higher than 18.5 percent.

The Cabinet Committee report also illustrates the situation, case II, where the contribution is included in taxable income but tax on investment income is deferred to the retirement period. This is the status of employee contributions under qualified private plans (and also under plans covering Federal, State, and local government employees). The annual contribution to produce a net income of \$1,200 a year beginning at age 65 is \$163.50 on the 40-year basis as compared with \$136.50 for case III. As shown in appendix II hereof, such annual contribution on the 25-year basis is \$369.50 as compared with \$311.50 for case III.

In order to illustrate the theoretical benefit of deferred taxation alone, appendix II hereof presents figures for cases I(a), II(a), and III(a) which are the same as cases I, II, and III, respectively, except that the income tax rate assumed for the preretirement period; i.e., 18.5 percent, is also used for the postretirement period. The annual contribution to provide \$1,200 a year beginning at age 65 on the 25-year basis for these cases follows:

⁸ Report of President's Committee on Corporate Pension Funds, January 1965, p. 16.

Case:	Annual contribution
I(a) -----	\$413.50
II(a) -----	396.00
III(a) -----	353.50

Of the total reduction of \$60 (\$413.50—\$353.50), \$17.50 arises from the theoretical deferral of tax on investment income and \$42.50 from the theoretical deferral of tax on contributions. Then, assuming the 7½-percent income tax rate after retirement for case III(a) (thus making it case III), the annual contribution is \$311.50 or a further reduction of \$42 which includes the benefit of the lower 7½-percent tax rate that would apply in any event to investment income earned after retirement under case I.

Although the theoretical benefit of deferred taxation is frequently spoken of as arising solely from the lower income tax rates in retirement, it is evident that the mere deferment of tax on contributions and investment earnings is more important in these theoretical exercises than the difference in tax rates.

Appendix B of the Cabinet Committee report also presents "cost" figures for a "case IV, a pay-as-you-go plan." A hypothetical internal fund is assumed that earns 4 percent interest, but is taxed at a rate of 31 percent, "taking into account the dividend received deduction, tax-free interest, etc.," resulting in an assumed earnings rate of 2.76 percent. It is then concluded that an annual payment of \$201, on a 40-year basis, is required to produce \$1,200 a year and that an annual payment of \$100 would produce \$600 a year beginning at age 65. The basic interest assumption of 4 percent, less 31 percent of tax, is entirely improper and unrealistic since an employer, financing a plan on a pay-as-you-go basis, and setting up balance sheet reserves, may be considered, for this purpose, to enjoy the net rate of return of the funds invested in the business (i.e., after income tax) which may reasonably be expected to be at least 4 percent, much less 2.76 percent, for many employers.

In Mr. Surrey's statement before the Subcommittee on Fiscal Policy, he sought to depict the favorable tax treatment of the employer by comparing a qualified funded plan with a nonqualified funded plan. He said:

Under a qualified pension plan, an employer may deduct the amount of his contributions to the plan, subject to limitations on overfunding. As noted above, the investment income of the fund is tax free.

If a nonqualified plan does not have immediate vesting, the law does not permit deductibility of current contributions. If the nonqualified plan has such vesting, then the current contributions are deductible.

Through the deductibility of contributions of a qualified plan and the tax exemption of investment income, the Government is sharing pension costs with the employer. Consequently, *the employer is able to provide a given level of benefits at about half the cost of a nonqualified, nonvested plan.*⁹ [Emphasis added.]

⁹ Ibid., pp. 413-414.

In appraising "favorable tax treatment": i.e., the effect on Federal revenues of the tax provisions relating to qualified plans, Mr. Surrey, it is submitted, makes the wrong comparison—the comparison should be made with the alternative of pay-as-you-go financing by the employer and not with a funded nonqualified plan. As will be indicated later in this paper, in the 1942 legislation, in stipulating the requirements for a qualified funded plan that were aimed, mainly, to prevent tax avoidance, it was necessary, in the very nature of things, to stipulate the tax treatment of nonqualified funded plans. Such tax treatment proved to be rather severe. But, an employer is under no compulsion to fund a plan: he is free to finance it on a pay-as-you-go basis and would be greatly impelled to do so if there were highly undesirable tax results on a funded basis. What would be revealed by a long-term comparison of the effect on Federal revenues of advance funding with pay-as-you-go financing?

The following analysis of pay-as-you-go financing versus advance funding is concerned only with the relative financial effects on Federal Government revenues and on the employer's cost of operation: i.e., without regard to other funding considerations such as the desirability of enhancing the security of benefits for employees or a purpose to invest pension funds outside of the employer's business.**

Consider a noncontributory plan now on a pay-as-you-go financing basis. All pension payments made are properly deductible by the employer as a reasonable and necessary business expense whether the plan structure meets "qualification" requirements or not provided the benefits are "reasonable." As a natural tax treatment, the retired employee includes pension payments in his taxable income as received.¹ The employer may be maintaining balance sheet reserves and considers that the pension contributions, in effect, are invested in his business. (Under Opinion 8 of the American Institute of Certified Public Accountants, there must now be an appropriate recognition of currently accruing costs on some recognized actuarial cost method.) The retired employee has no concern with the employer's accounting practice—he pays an income tax as he receives his pension payments. If the employer goes beyond accounting and places funds in a qualified trust or insurance company contract, it still should be of no interest to the retired employee so far as his personal income tax is concerned.

In this process of advance accounting for pension costs by either internal balance sheet reserves or a qualified advance funding operation, the contributions, actual or assumed, and investment earnings, actual or assumed, must match the pension payments, dollar for dollar, over the duration of the pension operation. At first blush, assuming uniform corporate income tax rates throughout the pension operation, it would appear that the capitalized value of tax deductions on the pay-as-you-go basis should be equal to the capitalized value of the corresponding tax deductions for contributions and investment earnings under advance funding. The situation, however, is not that simple.

**Furthermore, no attempt has been made to explore the implications of situations where, in choosing between financing methods, the employer cannot use additional capital profitably or, if the employer can, such capital is available on good terms from sources other than foregone advance pension funding contributions.

It is complicated by the need to recognize the value of money to the Government over a span of years, the net earnings rate of a pension fund, the gross earnings rate of the employer's business and the period of years over which investment earnings are realized or recognized; i.e., the average date from which funding contributions would be made to the average date of pension payments.

These considerations are encapsulated by algebraic formulas contained in appendix III hereof. There are also shown, using such formulas, numerical illustrations of the extent of the advantage or disadvantage to the Federal Government of advance funding versus pay-as-you-go financing. The value of money to the Government is the rate paid on borrowed funds less the proportion, recovered in taxes, of the interest paid on such borrowed funds. Three values are assumed. The first, 3 percent, assumes that money is borrowed at $4\frac{1}{2}$ percent and the interest is taxed at an average rate of $33\frac{1}{3}$ percent, the mean of $18\frac{2}{3}$ percent by individuals and 48 percent by corporations. (This assumes a 50-50 division of holdings by individuals and corporations which seems reasonable in the absence of specific information.) A second value of 2.67 percent is based on a borrowing rate of 4 percent and a one-third recovery from taxes. The third rate of 2.08 percent also assumes a borrowing rate of 4 percent, but the corporate tax rate of 48 percent. A range of rates of return of a pension fund and the gross rate of earnings of a business are used. For the period of years over which investment earnings are realized or recognized, two values are used—25 and 30 years. It is probable that a typical average accumulation period before retirement age is 20 years and after retirement age is $7\frac{1}{2}$ years, a total of $27\frac{1}{2}$ years.

The numerical illustrations are in the form of the ratio of—

(a) The value of taxes receivable by the Federal Government on a pay-as-you-go basis, to

(b) The value of taxes foregone by the Federal Government under advance funding.

Certain conclusions may be drawn from these illustrations:

(i) Where the rate of investment earnings of a pension fund is high in relation to the gross earnings rate of a business, there is a decided tax advantage to the Government by advance funding. This high rate of investment earnings of a pension fund will affect taxes either by materially reducing deductible amounts (and hence increasing the taxes collected on an advance funding basis) or by materially increasing the amount of benefit that are not deductible during the payout period on a funded basis; i.e., the employer is at a disadvantage since he cannot deduct these enhanced amounts which would have been deductible on the pay-as-you-go basis.

(ii) The longer the investment earnings period, generally speaking, the larger is the area that is favorable to the Government under advance funding.

(iii) There is a middle area where advance funding is to the advantage of the employer and not to the Government. This disadvantage may be represented by 10 to 20 percent less in the value of taxes collected.

(iv) Where the rate of investment earnings of a pension fund is quite low in relation to the gross earnings rate of a business, advance

funding is to the financial disadvantage of both the employer and the Government.

(v) Based on the illustrations in appendix III, there is shown below the rate of pension fund investment earnings that will produce a matching of the value of taxes on the pay-as-you-go basis with that on an advance funding basis, assuming an average investment earnings period of 27½ years. Where the indicated relationship exists, advance funding is to the advantage of the employer but the Federal Government can afford to be indifferent— k is the rate of the net cost of money to the Government.

[In percent]

Employer's gross earnings rate	Pension fund rate of return		
	$k=3$ percent	$k=2.67$ percent	$k=2.08$ percent
5 percent.....	4.91	4.64	4.17
5½ percent.....	5.11	4.85	4.39
6 percent.....	5.31	5.06	4.61
7½ percent.....	5.94	5.70	5.28
10 percent.....	7.01	6.78	6.39
12½ percent.....	8.11	7.92	7.56
15 percent.....	9. +	9. +	8. 76

(vi) In view of the realized or expected return on funds that are invested substantially in common stocks ranging up to 9 percent, it would appear that there are many plans where the Government will enjoy a decided advantage by reason of advance funding. Considering the entire range and character of private pension operations over the years to come, can anyone say, with any degree of confidence or factual support, that advance funding of pensions, with tax-free input, will be any more costly to the Government than the pay-as-you-go financing of the same benefits under such plans would have been, with tax-free output?

PRACTICAL AND LEGAL CONSIDERATIONS

So much for a theoretical mathematical analysis. But what are the realities?

As we frequently hear, did the Congress, in the 1942 legislation, overtly and purposefully enact "special tax privileges" to encourage the adoption and development of private retirement plans? In the work by Dr. Robbins, published by the Industrial Relations Counselors in 1949, referred to in Section II hereof, we find a thoughtful interpretation of the objectives of the 1942 legislation. This is significant, since it appeared only a few years after 1942 when little time had elapsed for mythmaking. Here is what Dr. Robbins wrote:

PURPOSES OF MAKING EMPLOYER CONTRIBUTIONS TAX-FREE

* * * Just why should not the employer contribution be taxable income to the employee immediately in all cases? One answer is * * * that it is not at the command of the employee; he can do nothing with it; he cannot use it to buy groceries or to pay taxes; he is not sure he will ever receive it; in fact, under most pension plans, no fixed amount is allocated to a particular employee; a sum set aside on behalf of all of a class of employees is to be of value to those in

this class who happen to remain in service until pension payments fall due. Hence, as a rule it would be impossible or very difficult to fix upon the part of the employer's contribution that should be called income to a particular employee at the time the contribution is made.

The earlier rulings that employer contributions were deductible as ordinary and necessary expenses seem clearly to have rested on a conviction that these were reasonable business expenses similar in many respects to wages and salaries. *There is no evidence that decisions were based on a desire to encourage pension plans.* Apparently no heated contests were involved and to have ruled that such contributions were not ordinary and necessary expenses would perhaps have been interpreted as direct hostility to the provisions of retirement benefits.

The provision of subsection 23(p) of the 1942 Revenue Act, explicitly exempting employer contributions for the first time, was clearly restrictive as compared with earlier rules and regulations, the restriction showing evidence of being designed to minimize tax avoidance.

REASONS FOR TAX-FREE PENSION TRUSTS.—In section 165, which frees employee benefit trustees from taxation, the case for liberality of treatment may seem clearer. Here the government postpones taxes on the income from trust investments until trust funds are distributed and the argument is not available that this income is a necessary expense to the employer similar to compensation. But, *there is good administrative reason for this tax treatment that has nothing to do with liberality.*

The Government could consider a pension trust as a third party, an artificial person, and tax it on the income from its investments. But * * * it is difficult, if not impossible, to isolate the employer contribution with respect to a particular individual. And, even if this is possible, note the complications when pension payments are made if trust fund income is taxed earlier. The pensioner should be taxed on the part of each payment that represents employer contributions, but should not be taxed on the part that represents interest on the trust fund. Bear in mind also that the part of a particular pensioner's payments that arises from interest depends in a complicated manner upon his age, sex, period of service, period the pension has been paid, and the provisions of the plan with respect to payments at death and withdrawal from service. *With these complications in mind, it seems that Congress did well to postpone taxing income of employee-benefit trust funds, quite regardless of any thought of encouraging deferred compensation plans.*

PURPOSES OF 1942 LEGISLATION.—* * * The 1942 legislation doubtless was belated recognition of an immense administrative problem that was bound to arise with a combination of high tax rates and an effort to control compensation payments. It stemmed partly from a determination to minimize tax

avoidance and partly from the related necessity of dealing promptly with an avalanche of new pension and profit-sharing plans. It formalized tax rules that had been used with relatively little controversy when tax rates were low and added important details with the *objective of minimizing both controversy and tax avoidance. It was distinctly restrictive legislation.*¹⁰ [Emphasis added.]

If the 1942 legislation, defining "qualified" plans and by the same token defining "nonqualified plans," were repealed and not replaced, would general principles of taxation permit most of the present practices? In a carefully reasoned article, Raymond Goetz (partner of Seyfarth, Shaw, Fairweather & Geraldson, Chicago, Ill.) presents a persuasive case that this would be true. This is his concluding statement:

CONCLUSION.—If the special Code provisions applicable to qualified pension plans were repealed (along with the accompanying special rules on nonqualified plans), Federal income tax results under most such plans probably would not be materially altered:

(1) Employer irrevocable contributions to a separate and independent trust fund, or to an insurance company, to provide pension benefits for employees, would be deductible from gross income of the employer in the year paid, as an ordinary and necessary business expense.

(2) Employees would be taxable only on amounts distributed or made available to them from such funds, in the year in which so distributed or made available (but any current death benefit would be taxable currently as life insurance).

The only real question of current employee taxation might be with respect to an employer contribution which is fully vested in the employee and guaranteed by an insurance contract. Even here, the contingency of survival to retirement age ought to be sufficient to defer tax on the employee.

Some fund investment income probably would be subject to income tax:

(1) In the case of trustee pension funds, at individual tax rates applicable to personal trusts, but only after deduction of benefit distributions for the year.

(2) In the case of insured pension funds, at the corporate rates applicable to insurance company investment income generally.

Such taxation of fund income would create obvious inequities between various pension trusts, between insured pension funds and pension trusts, and between various types of insurance company investment income.

Thus, the tax rules under discussion do not appear to involve any substantial departure from sound fundamentals of income taxation. Instead, these rules merely codify certain logical tax consequences under qualified pension plans as to

¹⁰ "Impact of Taxes on Industrial Pension Plans," Rainard B. Robbins, Industrial Relations Counselors, Inc., 1949, pp. 52-55.

the *timing* of employer expense deductions and employee taxable income. Broadly stated, these consequences are: employer deduction at the time of payment, and employee tax upon receipt or availability of cash. These give the appearance of tax benefits only when compared to the results under dissimilar forms of employee compensation, such as wages. As the foregoing analysis indicates, *the tax results flowing from qualified pension plans seem appropriate to the nature of the compensation arrangement involved.* [Emphasis added.] This is perhaps best demonstrated by reference to the corresponding tax treatment of employer contributions and employee benefits under the basically similar supplemental unemployment benefit plans, which are not the object of any special code provisions covering employer expense deduction or employee taxable income.¹¹

In his statement before the Subcommittee on Fiscal Policy, Mr. Surrey presented a different interpretation of the general principles of tax law and claimed that the "special tax treatment" for qualified plans resulted in an estimated tax "cost" to the Federal Government of \$3 billion. He said:

I want to make clear that qualified pension plans do get a special tax treatment and that deferral would not automatically follow as a matter of the application of the general principles of tax law.

With regard to the employer's deduction, the general rule is that an amount is deductible under the tax law when there is fixed liability on the employer to make a fixed payment to a definite person. If the employer is on an accrual basis, he may take a deduction even though he does not have to make the payment immediately, but the liability for payment must be fixed.

With regard to an employer's contribution to a pension plan where the employee's benefits are not vested, all that is involved for the employer is the possibility that he may have to make a pension payment to some employee in the future. This possibility of future payment is not sufficient under the general principles of tax law to permit an accrual of the deduction.

With regard to the employee, it would seem clear that if the pension contribution is not vested in the employee, there is no basis for taxing the employee currently at the time that the employer's contribution is made. This is the particular case where, as I pointed out, deductibility to the employer constitutes a particular benefit granted under the present law.

Where the contribution by the employer is vested at the time made, or where it becomes vested at a later point before the employee receives the pension, the general principles of tax law would suggest that the employee should be taxable at that time. It is not controlling that the employee receives no cash money at that time.

¹¹ "The Myth of Special Tax Concessions for Qualified Pension Plans," Iowa Law Review, Spring 1966. Raymond Goetz, pp. 580-581.

If I do a piece of work for you and my payment for the job is a paid-up insurance policy that will provide a life annuity beginning when I am 65 years old, I have clearly gotten something of value for this work. Under general principles of tax law, I am required to include in my income the value of the insurance policy that I have received. The special benefit provided for employees under qualified pension plans is that when they receive something of value in the form of a vested benefit to a pension the tax on this amount is deferred until they get cash.

Finally, it is clear that the investment income of a pension trust would be taxable under general principles of tax law except for the benefits extended to qualified plans.

If the total amount contributed by employers to qualified pension plans and the investment income of the funds were taxable, at individual rates, the revenues would rise by about rent levels by about \$3.8 billion per year. If the amounts were taxable at individual rates, the revenues would rise by about \$1.4 billion a year. The appropriate rate, as I have indicated, depends on whether or not the benefits were vested. Therefore, the cost in revenue of the Federal Government because of the existing pension plan provisions falls somewhere between the two limits of \$3.8 billion and \$1.4 billion. (These estimates take into account the current tax being paid on benefits.) Since there is some degree of vesting, we may put this cost very roundly at about \$3 billion.¹²

If Mr. Goetz is right as to the operation of the general principles of tax law, the tax treatment of employer contributions would remain essentially the same and Federal revenues would not be materially altered, much less increased by Mr. Surrey's theoretical alleged "tax loss" of \$3 billion.

If Mr. Surrey's interpretation of the general principles of tax law is correct, what would be the effect of the repeal of the "special legislation for pension plans?" Would Federal revenues, in fact, be increased by \$3 billion? As a practical matter, could funded pension plans function satisfactorily?

If the \$6.2 billion employer contributions made in 1965 on a collective basis for qualified plans were not currently deductible by employers, an intolerable situation would exist that would give rise to widespread vigorous protest and stimulate many employers to shift to pay-as-you-go financing. Although current revenues in this event would be temporarily increased, deductions corresponding to advance funding contributions and investment income thereon would eventually be taken that could range from amounts of significantly greater value to significantly lesser value than contributions and investment income. (See app. III.) Such abandonment of advance funding would weaken employee pension security and diminish an important source of savings and capital supply. The decline in advance funding would be in conflict with the current objective of the President's Committee on Corporate Pension Funds to improve pension funding.

¹² Ibid., pp. 414-415.

As for the employee's situation, it would be intolerable to ask an employee to include in taxable income the value of accrued benefits at the point of vesting (assuming that such value under collective funding could be precisely determined—a highly invalid assumption) which could amount to as much as 3 or 4 years' annual wage or salary. Under contributory plans where vesting of benefits provided by employer contributions is usually forfeited if a terminating employee cashes out his own contributions (e.g., the civil service retirement plan), how and when would the employee be taxed on the value of vested benefits? There is no unconditional vesting until retirement age when the value, again, could be several years' wage or salary.

Mr. Surrey's case for "special treatment" can be sustained only if there is an equitable and workable alternative. It should be evident from the foregoing picture of the practical situation that there is no such alternative and, consequently, the present tax treatment of employer contributions is the natural method.

As to the taxation of investment earnings, we have noted earlier the great administrative problems as outlined by Robbins. Mr. Goetz has indicated that, under general principles of tax law, when a trust is taxed as a separate entity, trust income is intended to be taxed only once, to either the trust or the beneficiary. Thus benefit distributions would be deducted from trust taxable income. If this were done, what would the figures look like? Using Holland's¹³ "preferred" projection of private pension plan contributions, benefits, and funds it is evident that, in the aggregate, benefit payments will exceed investment income shortly after 1970.

[In billions]

Year	Investment income (1)	Benefit payments (2)	Excess of (1) over (2) (3)
1965.....	\$3.2	\$2.8	\$0.4
1970.....	4.7	4.5	0.2
1975.....	6.2	6.9	-0.7
1980.....	7.8	9.8	-2.0

It is clear that the revenue from this source would be a rapidly disappearing resource. Of course, the Congress, in its wisdom, might legislate a special tax on investment income of qualified pension plan funds simply for the privilege of operating a plan in our society—but such legislation would appear to be contrary to the treatment of a taxable trust in accordance with the general principles of tax law.

The deferred tax treatment of employer contributions (and investment income on both employee and employer contributions) for plans covering Federal, State, and local government employees, a public policy accepted without question, further fortifies the proposition that the same deferred tax treatment for qualified private plans is the natural method of treatment. Funds for State and local government plans are now of significant proportions and are growing more rapidly

¹³ Daniel M. Holland, "Private Pension Funds: Projected Growth," Occasional Paper 97, National Bureau of Economic Research, tables 24 and 28.

than those in the private sector. In 1965, contributions were \$4.2 billion (60 percent by employers), benefit payments were \$1.7 billion and estimated investment earnings were about \$1.5 billion. If these plans covered private employees, the same type of calculation that produced Mr. Surrey's \$3 billion assumed tax loss would account for another \$1 billion. This hypothetical figure does not include the operations of plans for Federal civilian employees under which 1965 contributions were \$2.2 billion and benefit payments were \$1.4 billion.

Two conclusions seem inescapable from this survey of the (i) objectives of the 1942 legislation as described by Robbins, (ii) the contrasting analysis of the general principles of tax law of Goetz and Surrey, and (iii) a realistic examination of the practical situation:

(1) The present deferred tax treatment is the natural treatment since, for the vast majority of plans, there is no workable reasonable or acceptable alternative, and

(2) The alleged \$3 billion of "tax cost," developed by the Treasury Department from a fanciful excursion into an unreal world, would not, by eliminating the present tax treatment of qualified plans, be recovered in the form of additional revenues.

ECONOMIC CONSIDERATIONS

In addition to theoretical mathematical considerations and practical and legal considerations, it is appropriate to recognize that, if advance funding of pension plans provides additional capital and, in turn, increased productivity, Federal revenues will be enhanced by taxation of the income associated with this increased productivity. It is then fair and reasonable to recognize, also, that any such additional revenue can be a significant offset to any net loss of revenue resulting directly from advance funding, whether such loss is of a theoretical mathematical character or results from extending the principle of deferred taxation to employee pension plan contributions and to retirement provisions of persons not covered by such plans, as recommended in this paper.

As evidenced by the recently published studies of Cagan and Katona, private pension plan coverage is associated with higher individual discretionary savings. Cagan reached this conclusion:

Our analysis . . . suggests that when households come under a pension plan, offsetting reductions in other saving do not occur. *The net addition to aggregate personal savings apparently equals the full amount of employees' and employers' contributions.* In chapter 6 it was concluded that business and Government saving is probably reduced by 10–20 percent of the growth in pension funds. Though there is no direct evidence for this conclusion, general considerations support it. Hence, *80–90 percent of pension fund growth constitutes a net addition to national saving.* We found no evidence that this addition will be temporary; at least it was not lower for older persons, or for those covered a longer period of time, who would be more aware and more sensitive to provisions for

retirement, as the rest of the population will be in time.¹⁴
[Emphasis added.]

Here is Katona's conclusion as to the effect of private pension plan coverage on individual savings behavior:

Under the conditions that prevail today, coverage by private pension plans stimulate individual saving. The notion that people tend to reduce the amounts they voluntarily save by the amounts they are compelled to save through their own and their employer's contributions to pension plans has been contradicted. So has the argument that expectation of retirement income from pension plans weakens motivation to save and induces more liberal spending.¹⁵

The determination of the extent of increased Federal revenues from this source is a project worthy of careful research. Only with this knowledge, along with an appreciation of the limited significance of theoretically calculated "tax losses" and an understanding of the practical and legal aspects, can a comprehensive and total view of the Federal income tax treatment of provisions for retirement be obtained.

IV. SUMMARY

The facilitation of lifetime income spreading by deferred taxation of contributions and investment income thereon is a natural and logical means of assuring income in old age. Such deferred taxation should be available to all persons in our society and should apply to all genuine programs of retirement income provision. Three areas require attention in order to remove undesirable discrimination and categorical taxation:

- (i) Employee contributions under employer-instituted plans;
- (ii) Contributions, and associated investment income, by persons not covered by such plans; and
- (iii) The OASDI system.

Furthermore, the deferred taxation principle should be made available to persons who have attained age 65 in order to encourage productive second careers, to facilitate the leveling out of old-age income and to afford a means of offsetting the erosion of inflation.

The present Federal income tax treatment of employer contributions and investment income for qualified pension plans, a long existing application of the principle of deferred taxation, is the natural method of treatment since—

- (i) There is no workable or equitable alternative for the vast majority of plans as they operate today;
- (ii) There are persuasive arguments that the treatment conforms to the general principles of tax law; and
- (iii) This treatment, as to the employee, has been accepted for many years, without question and without special legislation, for plans covering Government employees.

¹⁴ Phillip Cagan, "The Effect of Pension Plans on Aggregate Saving," National Bureau of Economic Research, Occasional Paper 95, 1965, p. 82.

¹⁵ George Katona, "Private Pensions and Individual Savings," Survey Research Center, Institute for Social Research, University of Michigan, 1965, p. 90.

If the 1942 legislation identifying qualified plans were repealed, there is no evidence that Federal revenues would be increased by the \$3 billion a year of "tax loss" alleged by Treasury officials as arising from the "favorable" tax treatment of qualified plans although such repeal would alter the incidence of tax collections over the years. Furthermore, until there is better understanding and knowledge of the total economic effects of advance funding versus pay-as-you-go financing, no one can say what, in fact, will be the ultimate long-range effect on Federal revenues of the advance funding of provisions for old-age income.

APPENDIX I

TAX-EXEMPT STATUS OF OASDI BENEFITS

Statement by Gerard M. Brannon, Director, Office of Tax Analysis, U.S. Treasury Department, at hearing before Special Committee on Aging, U.S. Senate, June 15, 1966 (p. 4 of Hearings Report):

Social Security benefits were exempted from tax not by law but by revenue ruling on the theory that they were gifts—a theory inconsistent with the treatment of pension income and with the general view of OASDI as a contributory pension system. In the 1930's, it was still true, however, that the income tax applied only to the moderately high-income people; and it still did not make much practical difference whether Social Security payments were excluded. For both social security and railroad retirement, the usual tax rules would indicate that the recovery of the employee's own contribution should be tax free. For people retiring in 1966, this would at most result in about 89 percent of OASI benefits being included in income for tax purposes and 78 percent of railroad retirement benefits; that would be the result if they were treated like other kinds of pensions.

Statement by Hon. Stanley S. Surrey, Assistant Secretary of the Treasury for Tax Policy, at hearings before the Committee on Ways and Means, March 1, 1967 (p. 196 of Hearings Report):

There is no sound principle that supports a complete exclusion for social security and railroad retirement benefits. These benefits are essentially in the nature of retirement income benefits and are comparable to those paid from a private retirement plan. The exclusion of social security retirement benefits is a tax anachronism granted administratively in the days when benefits were low, and the social security system was in its infancy and viewed as a "welfare" program. The exclusion of railroad retirement benefits was granted by a different committee to create parity of treatment with social security. To continue these exclusions as benefits grow will accentuate (1) the greater tax benefits given to the wealthy and (2) the arbitrary differences in tax treatment of elderly individuals with the same total incomes which now result from treating various kinds of income differently.

Opinion of Fred B. Smith, General Counsel of the Treasury Department filed with the Committee on Ways and Means, March 3, 1967 (pp. 374-377 of Hearings Report):

Annuities under the Social Security Act, as amended, are not statutorily exempt from tax, as are comparable annuities under the Railroad Retirement Acts. However, the Internal Revenue Service has ruled, without discussion, that they are not subject to Federal income tax (I.T. 3447. C.B. 1941-1.191). But this ruling's position does not reflect any constitutional mandate, as an analysis of Revenue Ruling 66-34 reveals. * * * It has been suggested that social security benefits are "gifts or gratuities".¹

The Government so argued in *Helvering v. Davis*, which sustained the validity of the Social Security Act. But this argument was simply the logical corollary of the Government's theory of that case—that the Act involved the exercise of two separate and distinct powers, the taxing power and the power to spend for the general welfare. In other words, the taxes collected under title VIII were not earmarked to pay title II benefits. The Court upheld the act as a valid exercise of Congress' power to spend money in aid of the general welfare and its power to tax, against the contention that it violated the 10th amendment, but said nothing about the character of the benefits in the hands of the recipients. The decision has been cited many times in other court opinions, but never for the proposition

¹ The argument that social security benefits are gifts or gratuities seemingly ignores the fact that the social security system is financed entirely out of contributions via taxes by employers, employees and the self-employed. The fundamental concept of this program of social insurance has been that the individual contributes part of his earnings during his working life in order to keep receiving income during his retirement years as a matter of earned right rather than as a gratuity.

that it held social security benefits to be gifts or gratuities. In the 1939 amendments to the Social Security Act, Congress clearly tied the taxes to the benefits by earmarking the amount of the social security taxes collected for the benefits granted.

It seems fruitless to engage in conceptualization regarding the essential nature of social security benefits as earned rights or gratuities. The only question which is constitutionally relevant is whether such benefits are income under the 16th amendment. As I have indicated above, they are * * *.

Based upon the above analysis, it is my opinion that annuities or pensions received under the Railroad Retirement or Social Security Acts may be included in gross income as proposed without violating the 16th amendment or any other constitutional requirement.

Excerpt from Ways and Means Committee hearing, March 3, 1967.
(Exchange between Congressman Curtis and Assistant Secretary Surrey, p. 378 of Hearings Report:)

Mr. SURREY. Even if for the sake of discussion social security is called a gratuity, the tax treatment would present only a question of interpretation of present law which has a statement in it that gifts and gratuities are not taxable.

Mr. CURTIS. That is right.

Mr. SURREY. It would not deal with the question of whether Congress if it cared to, wanted to say these were taxable.

Mr. CURTIS. I am simply saying in establishing the basic theory of social security it was clear that these were gratuities, not rights that could be enforced, something that Congress could take away tomorrow. Congress can't take away the rights under the civil service retirement program. These are contractual rights. * * * They can alter this, and this was the basis, I am suggesting, or had a great deal to do with the Treasury rulings that social security benefits were not to be taxed * * *. Congress can come along and say that we want to tax this form of gratuity.

APPENDIX II

THEORETICAL BENEFIT OF DEFERRED TAXATION

A. ILLUSTRATION OF EFFECT OF DIFFERENT RATES OF TAX AND TIMING OF TAX WITH RESPECT TO CONTRIBUTIONS AND INVESTMENT INCOME.

Case	Tax rate and timing		Annual contribution to produce \$1,200, net—	
	Contributions	Investment income	For 25 yr.	For 40 yr.
I(a).....	18.5 percent; current.....	18.5 percent; current before and after age 65.	\$413.50	\$195.00
I.....	do.....	18.5 percent; current before age 65; 7½ percent, current after age 65.	400.50	188.50
II(a).....	do.....	18.5 percent; deferred after age 65.	396.00	178.00
II.....	do.....	7½ percent; deferred after age 65.	369.50	163.50
III(a).....	18.5 percent; deferred after age 65.	18.5 percent; deferred after age 65.	353.50	155.00
III.....	7½ percent; deferred after age 65.	7½ percent; deferred after age 65.	311.50	136.50

B. FORMULAS

Case I(a):

$$X(0.815)\bar{S}_{\bar{n}/(3.26\%)}=Y\bar{a}_{65}^{(4\%)}$$

where

$$Y-0.185\left(Y-\frac{X(0.815)\bar{S}_{\bar{n}/(3.26\%)}}{e_{65}}\right)=1,200.$$

Case I:

$$X(0.815)\bar{S}_{\bar{n}/(3.26\%)}=Y\bar{a}_{65}^{(4\%)}$$

where

$$Y-0.075\left(Y-\frac{X(0.815)\bar{S}_{\bar{n}/(3.26\%)}}{e_{65}}\right)=1,200.$$

(Corrected formula for case I of appendix B of Cabinet committee report.)

Case II(a):

$$X(0.815)\bar{S}_{\bar{n}/(4\%)}=Y\bar{a}_{65}^{(4\%)}$$

where

$$Y-0.185\left(Y-\frac{X(0.815)(n)}{e_{65}}\right)=1,200.$$

Case II:

$$X(0.815)\bar{S}_{\bar{n}/(4\%)}=Y\bar{a}_{65}^{(4\%)}$$

where

$$Y-0.075\left(Y-\frac{X(0.815)(n)}{e_{65}}\right)=1,200.$$

(This formula for case II, as shown in the appendix B of the report, is incorrectly stated therein although it was correctly applied.)

Case III(a):

$$X\bar{S}_{\bar{n}/(4\%)}=\frac{1,200}{0.815}\bar{a}_{65}^{(4\%)}$$

Case III:

$$X\overline{S}_{\overline{n}/(4\%)}=\frac{1,200}{0.925}\overline{a}_{65}^{(4\%)}$$

Factors used:

$$\overline{S}_{25/(4\%)}=42.4743; \overline{S}_{25/(3.26\%)}=38.3143.$$

$$\overline{S}_{40/(4\%)}=96.914; \overline{S}_{40/(3.26\%)}=81.302.$$

$$\overline{a}_{65}^{(4\%)}=10.1987; \overline{a}_{65}^{(3.26\%)}=10.7827; \ell_{65}=14.206.$$

Case	Values of quantity Y	
	n=25	n=40
I(a)-----	1266.09	1266.09
I-----	1226.00	1226.00
II(a)-----	1343.48	1379.63
II-----	1254.31	1266.87

APPENDIX III

PAY-AS-YOU-GO FINANCING VERSUS ADVANCE FUNDING

A. ALGEBRAIC ANALYSIS

An employer who contributes \$1 now to his pension fund will thereby be able to discharge a benefit payment of $\$(1+j)$ 1 year later, or more generally $\$(1+j)^n$ n years later, where j is the annual net yield of the pension fund. A taxpaying employer also gets a \$1 deduction now for income tax purposes.

On the other hand, if the employer does not fund in advance, he keeps his \$1, less taxes at rate t (assuming the employer would contribute from current earnings), and can invest it in his business or elsewhere at an annual rate of return of i before taxes, or $i(1-t)$ after taxes. When, n years later, he makes the benefit payment of $\$(1+j)^n$, the resulting deduction reduces his taxes by $t(1+j)^n$.

The employer's choice of financing method has two important consequences:

(1) *For the employer.*—Making the comparison at time n , pay-as-you-go financing is better for the employer if the amount gained by not funding in advance; i.e., $\$(1-t)[1+i(1-t)]^n$ is more than the net cost of the benefit; i.e., $\$(1-t)(1+j)^n$. Advance funding is preferable for the employer if and only if $j > i(1-t)$.

(2) *For the Federal Government.*—Suppose money is worth k percent per year to the Federal Government. Then, making the comparison at time n , pay-as-you-go financing is better for the Federal Government if the value of the taxes on the original \$1 and on its subsequent earnings; i.e.,

$$\begin{aligned} \$t(1+k)^n + \$ti(1-t) \sum_{r=0}^{r=n-1} [1+i(1-t)]^r (1+k)^{n-r-1} \\ = \$t(1+k)^n + \$ti(1-t) \frac{[1+i(1-t)]^n - 1 + k)^n}{[1+i(1-t)] - 1 + k)} \end{aligned}$$

is more than the tax loss at time n , which is $\$t(1+j)^n$.

Advance funding is preferable for the Federal Government if and only if

$$t(1+j)^n > t(1+k)^n + it(1-t) \frac{[1+i(1-t)]^n - (1+k)^n}{[1+i(1-t)] - (1+k)}.$$

(NOTE.—Formulas developed by Harrison Givens, Jr., associate actuary of the Equitable Life Assurance Society.)

B. NUMERICAL ILLUSTRATIONS

RATIO OF VALUE OF TAXES RECEIVABLE UNDER PAY-AS-YOU-GO FINANCING TO VALUE OF TAXES FOREGONE
UNDER ADVANCE FUNDING

3 PERCENT (66⅔ PERCENT OF 4.5 PERCENT): NET VALUE OF MONEY TO GOVERNMENT

Employer's gross earnings rate (percent)	Average invest- ment earnings period (years)	Percent rate of return on pension fund							
		4	4½	5	5½	6	7	8	9
5-----	25	0.795	0.896	1.099	1.137	1.279	1.618	2.041	2.570
	30	.779	.899	1.038	1.196	1.379	1.827	2.416	3.185
5½-----	25	.757	.853	.961	1.082	1.218	1.540	1.944	2.447
	30	.735	.849	.980	1.130	1.302	1.726	2.282	3.009
6-----	25	.720	.812	.915	1.030	1.159	1.466	1.850	2.329
	30	.694	.802	.925	1.067	1.230	1.630	2.154	2.841
7½-----	25	.620	.699	.788	.887	.999	1.263	1.593	2.006
	30	.583	.673	.777	.896	1.032	1.368	1.809	2.385
10-----	25	.481	.543	.611	.688	.775	.980	1.236	1.557
	30	.432	.499	.576	.664	.765	1.014	1.341	1.768
12½-----	25	.372	.419	.472	.532	.598	.757	.955	1.202
	30	.318	.367	.424	.488	.563	.746	.986	1.300
15-----	25	.286	.323	.363	.409	.461	.583	.735	.926
	30	.232	.268	.310	.357	.412	.546	.721	.951

2.67 PERCENT (66⅔ PERCENT OF 4 PERCENT): NET VALUE OF MONEY TO GOVERNMENT

5-----	25	0.847	0.995	1.076	1.212	1.364	1.725	2.177	2.741
	30	.840	.970	1.119	1.290	1.487	1.971	2.605	3.435
5½-----	25	.806	.908	1.024	1.153	1.297	1.631	2.070	2.606
	30	.792	.914	1.055	1.216	1.402	1.858	2.456	3.238
6-----	25	.766	.864	.973	1.096	1.232	1.559	1.968	2.478
	30	.746	.862	.994	1.146	1.321	1.751	2.315	3.052
7½-----	25	.657	.741	.835	.940	1.058	1.338	1.688	2.125
	30	.623	.719	.830	.957	1.103	1.462	1.933	2.549
10-----	25	.507	.571	.644	.725	.816	1.032	1.302	1.639
	30	.458	.529	.611	.704	.811	1.075	1.422	1.874
12½-----	25	.389	.439	.495	.557	.627	.793	1.000	1.260
	30	.335	.387	.446	.514	.593	.786	1.039	1.369
15-----	25	.298	.336	.379	.427	.480	.607	.766	.965
	30	.243	.281	.324	.374	.431	.571	.755	.966

B. NUMERICAL ILLUSTRATIONS—continued

RATIO OF VALUE OF TAXES RECEIVABLE UNDER PAY-AS-YOU-GO FINANCING TO VALUE OF TAXES FOREGONE
UNDER ADVANCE FUNDING—Continued

2.08 PERCENT (52 PERCENT OF 4 PERCENT): NET VALUE OF MONEY TO GOVERNMENT

5-----	25	0.950	1.071	1.207	1.359	1.529	1.934	2.441	3.073
	30	.959	1.108	1.278	1.474	1.699	2.251	2.976	3.924
5½-----	25	.901	1.016	1.144	1.289	1.450	1.834	2.314	2.914
	30	.901	1.041	1.201	1.385	1.596	2.115	2.796	3.687
6-----	25	.854	.963	1.085	1.222	1.375	1.739	2.195	2.763
	30	.846	.977	1.128	1.301	1.499	1.987	2.626	3.463
7½-----	25	.727	.820	.924	1.041	1.171	1.481	1.869	2.353
	30	.700	.808	.933	1.076	1.240	1.643	2.172	2.864
10-----	25	.555	.626	.705	.794	.893	1.130	1.426	1.795
	30	.508	.586	.676	.780	.899	1.191	1.575	2.076
12½-----	25	.422	.476	.536	.604	.680	.860	1.085	1.366
	30	.366	.423	.488	.563	.649	.860	1.136	1.498
15-----	25	.321	.362	.408	.459	.517	.653	.824	1.038
	30	.264	.304	.351	.405	.467	.619	.818	1.078

NOTES

"Northeast" area: Advance funding favorable to both Government and employer.
Middle area: Advance funding favorable to employer, unfavorable to Government.
"Southwest" area: Advance funding unfavorable to both Government and employer.



