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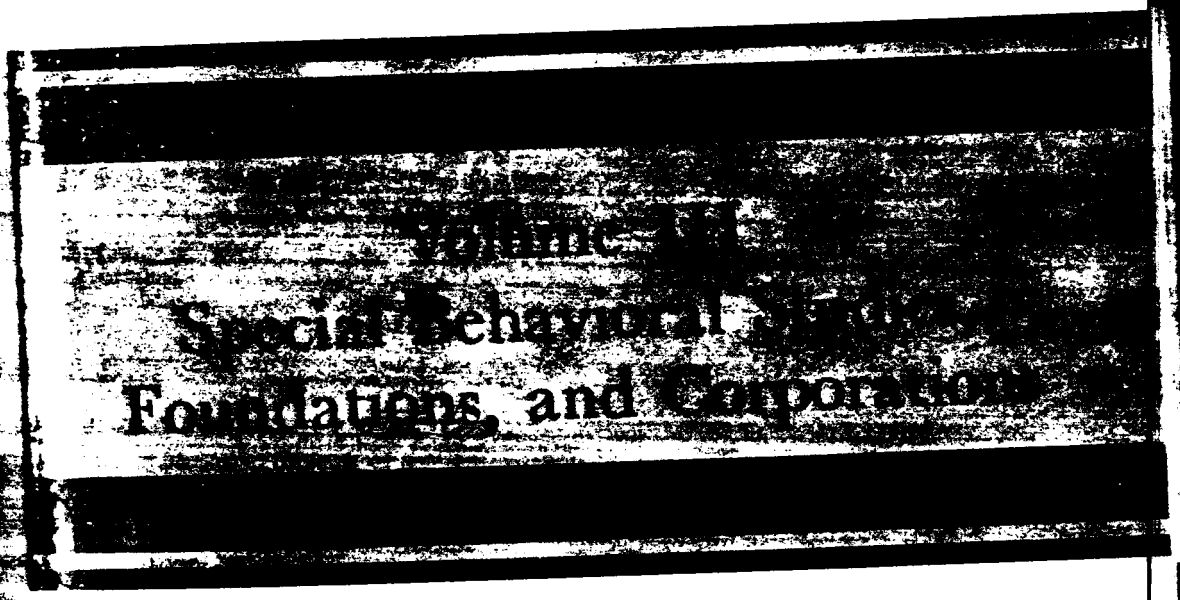

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PAY-OUT REQUIREMENTS FOR FOUNDATIONS

Eugene Steuerle†

Introduction

The Tax Reform Act of 1969 requires private foundations to make minimum annual charitable distributions equal to their actual income or a stated percentage ("applicable percentage") of their investment assets.[1] The applicable percentage for each taxable year is to bear the same relationship to 6 percent (the rate set for each foundation's taxable years beginning in 1970) as money rates and investment yields for the calendar year immediately preceding the taxable year bear to money rates and investment yields for the calendar year 1969.

The purpose of this paper is to examine these minimum distributional requirements for foundations. The first chapter presents a brief historical review of the current law and proposals to change it. The second chapter deals with serious technical problems in the pay-out requirements which lead to inequities across foundations and inefficiencies in the distribution of their funds. Some proposals to amend the 1969 act so as to eliminate these problems are presented in Chapter III. The fourth chapter discusses from a broader perspective the role of public policy in requiring minimum distributions and analyzes the effect of such requirements on the growth (and perpetuity) of the foundation sector. In Chapter V we examine the impact of these requirements upon the broader charitable sector. Finally, a brief conclusion is contained in Chapter VI.

I

HISTORICAL REVIEW

A 1965 Treasury Report[2] noted that federal tax laws encourage and, in substantial measure, finance private charity. It therefore took the view that society was entitled to current benefits from these tax laws. Contrary to this view, the report found that a number of foundations were making substantial deferrals of grants for charitable purposes and instead were accumulating the income that was earned on their assets. Recognizing that this income could be accrued both directly through dividend or interest payments and indirectly through appreciation in the value of assets, the report recommended that each private non-operating foundation be required to distribute net income on a reasonably current basis and that where actual income was below a "reasonable" rate of return for a diversified portfolio, each foundation be required to distribute a percentage of its investment asset value equal to that "reasonable" rate of return. The Treasury Secretary was to be given authority to adjust the applicable rate from time to time depending upon market conditions.

Both the Johnson Administration in 1968 and the Nixon Administration in 1969 supported this proposal. The April 22, 1969, Tax Reform Proposals of the Nixon Administration suggested a 5 percent minimum distribution requirement but made no mention of annual or periodic adjustment. While the House of Representatives accepted this 5 percent rate, the Senate did not, and a fair amount of debate ensued there on the question of the appropriate rate for pay-out. The Commission on Foundations and Private Philanthropy,[3] chaired by Peter G. Peterson, reported to the Senate Finance Committee its conclusion that the 1959-1969 experience of balanced

† Office of Tax Analysis, U.S. Department of Treasury, Washington, D.C.

investment funds indicated that a reasonably managed foundation could maintain its size in *real* dollars with a pay-out of about 6 to 8 percent. While the Senate Finance Committee kept the 5 percent minimum pay-out that was contained in the House bill, Senator Percy successfully advanced an amendment on the floor to raise the minimum pay-out to 6 percent. Since a previous unsuccessful effort had been made to impose a "limited life" on foundations, support for the 6 percent rate came not only from those who felt that such a rate reflected the real rate of return on assets held by a typical foundation, but also from those who did not wish to grant an indefinite life to foundations. Similarly, opposition to the 6 percent rate was supported by those who felt that a lower rate more appropriately reflected returns on assets, as well as by those who did not wish to inhibit the growth of foundations by any means. In any case, the Treasury Department supported the 6 percent rate before the Conference Committee, and the Percy amendment was maintained in the final act.

The 1969 act also allowed for annual adjustments in the pay-out rate by requiring that "the applicable percentage for any taxable year beginning after 1970 shall be determined and published by the Secretary of Treasury or his delegate and shall bear a relationship to 6 percent which the Secretary or his delegate determines to be comparable to the relationship which the money rates and investment yields for the calendar year immediately preceding the beginning of the taxable year bear to money rates and investment yields for the calendar year 1969."[4]

Thus, the required pay-out would rise or fall as the previous year's "money rates and investment yields" rose and fell. As discussed in Chapter II, there was far too little debate on the problems that would arise with this method of adjustment.

Table 1 presents the pay-out requirements that were applied to foundations for the years 1970 to 1975.

Table 1

Pay-Out Rates for Foundations[a]

Year	Foundations Organized Before May 26, 1969	Foundations Organized After May 27, 1969
1970	6.0%	NA
1971	6.0	NA
1972	5.5	4.125%
1973	5.25	4.375
1974	6.0	5.5
1975	6.0	6.0

a. Foundations must distribute this percentage of net worth or actual income, whichever is higher.

In applying the prescribed formula for determining these pay-out rates, the Treasury Department in recent years has been using the yield on five-year Treasury securities[5] as its measure of "money rates and in investment yields." However, the application of the formula has not always been strict.[6]

Note that transitional rules applied to foundations established before enactment of the 1969 law. No "applicable percentage" was applied to these foundations before 1972, and thus they were not required to distribute 6 percent of net worth until 1975. Along with this increase in pay-out requirements for "older" foundations came the steep stock market declines of 1973 and 1974. Combined, these changes served to enhance the view of many foundation trustees that the pay-out requirements were forcing a decline in foundation net worth.

Since adoption of the 1969 act, several attempts have been made to reduce distributional requirements. For instance, in 1971 a bill was introduced in the House

to allow foundations to compute their minimum pay-out using the acquisition date value of their assets rather than current fair market value. This type of proposal would work to nullify the intent of the actual law to take into account all returns of the foundation's portfolio, whether realized or not. Other attempts usually involved simple proposals to lower the basic 6 percent rate to 5 percent, 4 percent, or less.

In November 1974 the Subcommittee on Foundations of the Committee on Finance of the Senate held hearings on the "Impact of Current Economic Crisis on Foundations . . ." Again, arguments against forced "invasion of corpus" were heard, along with the contention that the basic 6 percent rate was unrealistic when compared with current market conditions and rates of return. A later statement of the Senate subcommittee recommended that a definite standard be set for setting the applicable percentage, although the subcommittee made no recommendation as to the appropriate rate around which that percentage would revolve.

In December 1975 the Commission on Private Philanthropy and Public Needs stated that the current "payout rate is higher, by a significant degree, than the yield that can be anticipated from a balanced investment portfolio."[7] It therefore recommended that a flat pay-out rate of 5 percent be fixed by Congress. However, there were dissents from that opinion. The dissenters in particular noted that "the slow dispersal of a foundation is not necessarily a bad thing if new ones are being continually created."

At about the same time as the release of the Filer Commission Report, the Treasury Department stated in a letter to Senator Curtis that it supported his bill to establish a fixed minimum pay-out of 5 percent. Part of this support reflected a position that 5 percent more closely approximated the long-term rate of return on foundation assets. However, no matter what rate was chosen, the Treasury voiced considerable support for elimination of the annual adjustment in the pay-out rate and its replacement with a flat rate.

Finally, early in 1976, Treasury ruled that based upon money rates and investment yields in 1975, the minimum pay-out rate would be raised to 6.75 percent for 1976.

As one can see from this brief historical review, much of the public debate regarding distributional requirements for foundations centered on the empirical question of the actual rate of return received by foundations on their portfolios. This paper does not direclty address that question, but assumes that the actual rate can be appropriately measured by the historical rate of return received on the assets of a typical foundation portfolio. It is important that the empirical question of rates of return received by foundations be separated from the policy question of the appropriate level of pay-out for foundations. The answer to the empirical question provides information by which the policy question can be addressed, but the empirical question is in no way dependent upon the answer to the policy question. In the remainder of this paper, alternative policies toward foundations (for example, "limited life," "no growth," or "growth and perpetuation") will be expressed in terms of the *relationship* between the long-term pay-out rate and the long-term rate of return received by the foundations. A more restrictive policy (limited life) is one in which the pay-out rate exceeds the rate of return while a more liberal policy (growth and perpetuation) is one in which the rate of return exceeds the pay-out rate. Chapters II and III treat the difference between the two rates as given by a predetermined national policy toward foundations. These chapters address the question, How should the current formula for required pay-outs be adjusted so as to promote equity among foundations and efficiency in the distrubution of their funds? The remaining chapters will separately discuss how the growth of individual foundations and the foundation sector is affected by any difference between these two rates.

II

EQUITY AND EFFICIENCY OF CURRENT DISTRIBUTIONAL REQUIREMENTS

No matter how large or how small the required rate of pay-out over the long run, a policy of required distributions for foundations should meet certain tests of efficiency and equity. First, any law should meet a standard of horizontal equity – that is, foundations should not be forced to make greater distributions because of a conservative investment policy in any particular year. Second, the pay-out rate itself should not vary with short-term fluctuations in interest rates nor with changes in nominal yields due to inflation. Finally, required distributions (as well as the pay-out rate itself) should not fluctuate greatly from year to year. Unfortunately, the current set of distributional requirements fails to meet all of these tests.

Horizontal Inequity in Distributional Requirements

A foundation's minimum required distribution is not merely a stated percentage of its investment assets, but rather the maximum of that number and actual income. Since actual income is based upon an accounting concept of realization which ignores non-realized capital gains and losses, actual income could be greater than economic income. This occurs when the average price of the foundation's assets decline in value. Thus, introduction of an extraneous "actual income" rule means that foundations will on average distribute more than an "applicable percentage" of their net worth. While in principle there is no reason why the average required distribution rate should not rise above the minimum pay-out rate, use of an "actual income" rule is not an equitable nor efficient means of increasing the average percentage of assets distributed. Certainly those foundations most affected by the "actual income" rule are ones that actually realize a greater proportion of their total income, that is, those foundations that invest primarily in bonds and similar assets rather than stocks. Since bonds in general average lower rates of return over time than do common stock equities, foundations with a lower rate of return are in effect required on average to distribute a larger portion of their net worth. If the purpose of including actual income in the distribution rule is to raise the average distribution rate somewhat above the minimum pay-out rate, then that can be accomplished more easily by increasing the pay-out rate itself. In any case, foundations should not be penalized as under current law for conservative investment policies.

Deficiencies of the Current Formula

Recall that the Secretary of the Treasury is required annually to adjust the pay-out rate so that it bears the same relationship to 6 percent as money rates and investment yields for the calendar year immediately preceding each taxable year bear to money rates and investment yields for calendar year 1969.

Since "money rates and investment yields" were never specifically defined in the law, the Treasury Department decided to measure these rates by the yield on five-year Treasury securities. Most foundations, however, invest primarily in assets whose yields are not closely correlated with the yield on Treasury securities. Consequently, the annual adjustments to the pay-out rate did not reflect changes in the real rate of return on assets held by foundations.

Why, then, did the Treasury Department use five-year Treasury securities to measure money rates and investment yields? The Treasury Department was constrained by the requirement that the pay-out rate be adjusted to reflect market returns *for the calendar year immediately preceding each taxable year.* Prices of assets such as stocks vary a great deal from one year to the next. If Treasury were to

calculate yearly investment yields by including price changes as well as dividend yields, then pay-out rates of -33 percent, -20 percent, or +50 percent would be common. The alternative available to Treasury is to use an asset that has less price fluctuation and whose interest varies less than short-run interest rates (a bond with a few years to maturity, for example) and to let its investment yield approximate the average investment return of foundations. Treasury's use of interest rates on certain Treasury obligations thus represented an unsatisfactory, although simple, resolution to its dilemma.

The current formula for calculating the "applicable percentage" is deficient in another respect: it fails to take into account the effect of changes in the rate of inflation upon the rate of return on assets. With an increase in the rate of inflation, nominal yields can easily rise at the same time that real yields remain constant. If the pay-out rate is indeed supposed to adjust to the real rate of return on assets, then inflation must be explicity taken into account in any formula for determining that pay-out rate.

In summary, the Internal Revenue Service Code sets an initial pay-out rate equal to 6 percent for 1970, and then proceeds to require adjustments in that pay-out rate according to a yearly rate of return which Treasury interprets as the nominal rate of interest on some of its own obligations. Thus, the pay-out rate now fluctuates with changes in nominal interest rates and yields without regard to whether changes in nominal interest rates represent changes in the long-run real rate of return received by foundations on their assets.

Instability of Distributions

Even if the wording of the law was changed so that the "applicable percentage" was made constant or changed only as the long-term real rate of return on assets was perceived to change, one major problem would remain. Because the "applicable percentage" is applied to the aggregate fair market value[8] of all assets (less acquisition indebtedness) of the foundation, the size of required distributions may fluctuate from one year to the next whether or not the "applicable percentage" changes. The percentage change in the size of required distribution will be equal to the percentage change in the aggregate fair market value of assets even when the pay-out rate remains constant.[9] Given the volatility of stock and bond prices, the present formula subjects minimum foundation distributions to similar volatility.

This sizable fluctuation in required distributions creates two problems. First, it leads to suboptimal planning on the part of the foundations. Many projects need substantial lead time to develop. Sudden increases in the value of a foundation's portfolio may require a foundation to make distributions for which it may have inadequately planned.[10] On the other hand, sudden decreases in valuation may encourage a foundation to abandon projects and commitments if it felt that required distributions had been too high in previous years.

Second, because foundations are heavily invested in the stock and bond markets and because changes in stock and bond prices generally act as a leading indicator of a similar directional change in national production,[11] minimum foundation distributions are pro-cyclical in nature. That is, a decline (increase) in stock prices will lower (raise) the amount of distributions that foundations must make, and this reduction (increase) in distributions will likely accompany a downswing (upturn) in the economy. Required distributions are thus pro-cyclical in terms of national income and counter-cyclical in terms of needs. When unemployment, national income, and similar measures indicate that the needs of society are greatest, distributions from foundations are likely to be reduced along with other private charitable giving. Later in the paper, it is argued that the principal justification for the separate existence of private foundations within the charitable contribution sector is that foundations must be able to fulfill functions and meet needs unlikely to be met by other parts of that sector. Yet, the current formula for calculating minimum distributions requires

increased pay outs when least needed, encourages decreased payouts when most needed, and thus effectively acts as a disincentive to foundations to play a significant and separate role during recessionary periods.

III

RECOMMENDATIONS FOR REVISION IN REQUIREMENTS FOR DISTRIBUTION

In the previous section it was concluded that distributional requirements could meet certain tests of equity and efficiency only if (1) foundations were not forced to distribute a greater portion of their assets because of conservative investment practices, (2) pay-out rates adjusted only to changes in the long-term expected real rates of return on assets, and (3) minimum required distributions did not fluctuate too much from year to year.[12]

How might the current law for minimum distributions by foundations be revised so as to meet these standards of equity and efficiency? First, the "actual income" part of the minimum distribution rule should be eliminated. It makes no sense to have a pay-out rate based upon a concept of economic income that recognizes unrealized capital gains and losses and then to have an alternative distribution rule based upon realized income only. All distributional requirements should be consistently based upon a concept of total income and not nominal realized income. Besides, as noted in the previous chapter, the actual income rule in general requires greater distributions from those foundations that have a lower real rate of return.

The second revision necessary is to eliminate the requirement that the pay-out rate reflect money rates and investment yields for the preceding calendar year. The mandatory pay-out should be related to the long-term real rate of return on foundation investments; that rate can be approximated by geometric mean of the total real rate of return to an "average" foundation portfolio held over an extended time span. There exists a fair amount of information by which such a calculation can be made. For instance, both the dividend and price change components of all stocks listed on the New York Stock Exchange for a period of about five decades is currently available. A suitable arrangement could be made whereby the pay-out rate would be recalculated every few years (or every year if desired) so that returns for the most recent years would be included in the computation. The beginning year for calculating the geometric mean rate of return could be either fixed or adjustable, for example, the rate could be calculated by the geometric mean of annual returns from 1926 to present or from 40 years ago to present.

Since a measure of a long-run rate of return based upon a historic series will vary much less than will annual "money rates and investment yields," adoption of this revision will eliminate much of the annual variation in the pay-out rate itself. More importantly, this revision would assure that changes in the pay-out rate reflected only changes in the long-run real rate of return rather than short-run nominal yields.

Nonetheless, even with adoption of this second revision, there will remain sizable fluctuations in required distributions from year to year because of the fluctuations in the base to which the pay-out rate is applied. To increase stability of distributions, minimum distributions should not equal the pay-out rate times the monthly average of the value of foundation portfolio in the previous year – the procedure adopted in the current law. But rather, the base to which the pay-out rate is applied should be a weighted average of the value of the foundation's net worth over several years.

Two minor problems arise when the base is thus expanded. First, inflation understates the value of the portfolio in a past year if that value is not converted (inflated) to present value. Secondly, new contributions must be treated separately from that portion of net worth that is due to past contributions. These procedures are dealt with later. At this point, however, assume that the world is one with no inflation

or deflation and that no new contributions are received by the foundation. How then might such a minimum distribution formula be derived?

The simplest and, administratively, the most feasible way would be to let the size of the previous year's distribution serve as a summary measure of the value of the portfolio in previous years. In other words, let

D_t = Minimum distribution in year t;

A_t = Asset value at beginning of year t;

α = Pay-out rate;

β = An arbitrary number indicating the proportion of the total base to be determined by the value of the portfolio in the current year.

Then let (1)

$$D_{t+1} = D_t + \beta\,[\alpha A_{t+1} - D_t]$$

If the rate of return on the portfolio for each year t equals the minimum pay-out rate, and the foundation only distributes the minimum required by law, then formula (1) can be seen to collapse to the requirement that $D_{t+1} = D_t$.

Equation (1) can also be rewritten as (1')

$$D_{t+1} = (1 - \beta)\, D_t + \beta\,[\alpha A_{t+1}]$$

thus inferring that required distributions in time period t + 1 are a weighted average of distributions in time period t and the pay-out rate times value of assets during period t+1. It can also be noted that

$$\begin{aligned} D_{t+2} &= D_{t+1} + \beta\,[\alpha A_{t+2} - D_{t+1}] \\ &= \beta\alpha A_{t+2} + (1 - \beta)\,\beta\alpha A_{t+1} + (1 - \beta)^2\, D_t \end{aligned} \qquad (2)$$

$$D_{t+n} = \beta\alpha A_{t+n} + (1 - \beta)\,\beta\alpha A_{t+n-1} + (1 - \beta)^2\,\beta\alpha\, A_{t+n-2} + \ldots + (1 - \beta)^{n-1}\beta\alpha A_{t+1}\,(1 - \beta)^{t+n} D_t$$

In formula (2) the last term $[(1 - \beta)^{t+n}\, D_t]$ approaches zero as n becomes large. Thus, required distributions in a given year can be viewed as equal to the pay-out rate (α) times a weighted average $(\beta, (1-\beta)\, B, (1-\beta)^2\, \beta \ldots)$ of total asset value of the foundation $(A_{t+n}, A_{t+n-1}, A_{t+n-2})$ in the current year and previous years.

The advantage of using a weighted average of previous asset values as shown in (2) is twofold. First, greater weight is given to current asset values than to past asset values. A simple averaging method would require assignment of equal weights to asset values for each year included in the average. Secondly, formula (2) collapses to the administratively simple formula shown in (1'). A foundation need know only its net worth in the current year and required distributions in the previous year to calculate its required distributions for the current year.

So far it has been assumed that the value of the dollar was constant and that the foundation received no new contributions. By successively relaxing these restrictions, modest revisions are added to formula (1).

To account for inflation, formula (1) can still be used, except that D_t would be converted to reflect the level of prices in time period t + 1. Thus if the rate of inflation in period t is i_t, then $D_{t+1} = (1 - \beta)\,(1 + i_t)\, D_t + \beta\,(\alpha A_{t+1})$. (3)

It can be seen that such an inflation adjustment effectively converts each A_{t+Z} term in equation (2) into the term $A_{t+Z}\left[\frac{t+n-1}{t+Z}(1+i_m)\right]$ by period n, or that the minimum distribution is still α times a weighted average of the net worth of the foundation in previous years, only now net worth in past years is converted to current dollars.

Again, there is no added work for the foundation to calculate its minimum distribution, since the numbers $(1-\beta)(1+i_t)$ and $\beta\alpha$ can be calculated yearly by Treasury, and the foundations need only plug the values of D_t and A_{t+1} into formula (3). In fact, with low rates of inflation, the difference in required distribution between formula (1) and (3) is of a low enough order of magnitude that it may be simpler to forego the adjustment altogether.

Next, there must be an appropriate method for separating new contributions in period t from the net worth of the foundation in period t + 1. Otherwise, distributions from new contributions will be required at a rate that is only a fraction[13] of the pay-out rate. Formula (3) can be revised so that

$$D_{t+1} = (1-\beta)(1+i_t)D_t + \beta[\alpha(A_{t+1}-C_t)] + \alpha C_t \qquad (4)$$

Where C_t = value of contributions in time period t.

Note, however, that the reformulation proposed in (4) is not necessary to limit eventually the growth of the foundation's portfolio from the reinvestment of its income. If a new contribution were merely treated as part of A_{t+1} as in (3) or (1), then in the first few years the required distributions deriving from the contribution alone would be less than the pay-out rate. Thus, at first, there is a lower pay-out for new contributions than there is for other retained assets of the foundation. However, eventually the rate of required distributions on all assets approaches the pay-out rate.

In Chapter V we argue that foundations receiving new contributions would be more likely to distribute funds toward currently recognized needs of society. Pay-out requirements for foundations were established by Congress to limit the growth of foundations from income, not contributions. For new contributions, therefore, it may be reasonable at first to lower the pay-out rate (for example, by foregoing the adjustment in formula (4)) or to allow a carryover of the required pay-out (αC_t) for a short period of time. Since foundations often need time to plan for expenditures from new contributions, such an alternative treatment of contributions could improve the efficiency of the distribution process.

The revised distribution rules proposed here would succeed where the current formula fails. The minimum pay-out rate would adjust to the long-term rate of return on assets, and minimum distributions would become more stable over economic cycles. Efficiency in distributions would be enhanced and equity across foundations would be promoted.

A summary of the recommendations of this section are as follows:

1. Eliminate the requirement that distributions must equal actual income whenever actual income is greater than the pay-out rate multiplied by the net worth of the foundation. Adoption of this recommendation will lower average distributional requirements. An equivalent rise in the pay-out rate may then be desired.

2. Adjust the pay-out rate periodically to reflect the long-term real rate of return on a typical foundation portfolio rather than the nominal rate of return on Treasury notes.

3. Determine each foundation's minimum required distribution by a weighted average of the previous year's distribution and the current net worth of the foundation multiplied by the pay-out rate. Equivalently, apply the pay-out rate to a weighted average of the net worth of the foundation in previous years. In addition, allow an extension of the time during which distributions required because of the previous year's contributions must be paid.

IV

A QUESTION OF PERPETUITY

Any pay-out requirement, no matter how small, affects the ability of an organization to grow. Certainly, the greater the amount of income that is disbursed, the lesser the accumulation of funds in a foundation's portfolio. Some individuals have extracted from this simple relationship an argument that the current pay-out rate will "bring about a slow but certain death sentence" to foundations.[14]

So far in this paper this argument has been ignored in order to focus better on inadequacies in the present law which are present no matter what the average pay-out rate over time. Now, however, we must turn to this argument because nowhere, it is felt, has the relationship between growth and a required pay-out been systematically analyzed.

The effect of the pay-out rate on a foundation receiving no new contributions will be discussed first. Then the relationship between the pay-out rate, the rate of return on assets, and the rate of contributions will be analyzed in order to examine the effect of this relationship on the growth and survival of the foundation sector as a whole.

Growth of Individual Foundations

What will the pay-out rate mean to an established foundation receiving no new contributions and distributing the minimum required by law? Clearly, the answer depends upon the rate of return on its assets. The relationship between these two rates and the net worth of the foundation is demonstrated in Table 2. In this Table the half-life of a foundation indicates the amount of time it will take for the *real* net worth of the foundation to halve, given the difference between the pay-out rate and the real rate of return on assets. This simple calculation reveals that when the pay-out rate is marginally greater than the real rate of return on assets, the net worth of a foundation receiving no new contributions will be reduced at a very gradual pace.

Recall from the first chapter the current efforts to reduce the basic pay-out rate to 5 percent. One of the principal arguments given for this reduction was that 5 percent represented the real rate of return achievable by a foundation portfolio and that pay-out requirements were therefore about 1 percent higher than this rate of return. Table 2 reveals that if this argument is correct, the real net worth of an "average" foundation receiving no new contributions will halve in about 70 years.

Table 2

Half-Life of Foundations Receiving No Contributions

Pay-out Rate Minus Rate of Return on Assets	Half-life (Years)
.00	Infinity
.01	69
.02	35
.03	23

Should the pay-out rate, then, be lowered to 5 percent? The answer depends upon the objective of public policy toward foundations. The argument was made earlier that this policy should be formulated in terms of the relationship between the pay-out rate and the real rate of return on assets. Once it is agreed what the appropriate difference, if any, between these two rates should be, then the pay-out rate can adjust as the perception and knowledge of real rates of return also change. A simple method to allow for periodic adjustment in the pay-out rate was presented in the previous chapter. In any case, a consistent public policy toward foundations requires that the relationship between the pay-out rate and the long-term rate of return on assets also be consistent. Therefore, the argument to lower the estimate of the long-term rate of return after a period in which equity prices have declined can only be valid if one is also willing to raise that estimate when those prices rise.

This micro-analysis of the effect of a pay-out rate on individual foundations receiving no new contributions will now be followed by analysis of its effect on the growth and perpetuity of the foundation sector as a whole. While the micro-analysis may be of more concern to established foundations, policymakers must be as concerned with the general effect of distribution rules sector-wide as they are with the specific effects of these rules on certain foundations.

To assume that the effects of a pay-out rule on the foundation sector would be the same as its effects on individual foundations receiving no new contributions would involve a fallacy of composition. The ability of a given foundation to grow is dependent not only upon the relationship between the rate of return on its assets and the pay-out rate, but also upon the rate at which that foundation acquires new contributions. In like manner, the foundation sector's survival is dependent upon the survival of existing foundations only if it is predicated that no new foundations will be formed.

A Model of Foundation-Sector Growth

To examine the relationship between the real rate of return on assets, the foundation pay-out rate, the rate of growth of contributions, and the size (or survival) of the foundation sector over time, make the simple assumption that each of these rates are constant over time. That is, let

r = real rate of return on foundation sector net worth;
p = foundation pay-out rate;
e = rate of growth of contributions to the foundation sector.

Also let

F = net worth of foundation sector at the beginning of time period 1;
C_t = contributions made to the foundation sector in time period t;
W_t = national wealth in time period t;
A_t = net worth of the foundation sector in time period t;
w = rate of growth of national wealth;
x = $1+r-p = 1 +$ annual rate of growth (decline) of value of foundation assets, given minimum payout and excluding increases due to contributions;
g = $1+e$ = ratio of contributions to the foundation sector in time period t+1 over those received in time period t;
a = $1+w$ = ratio of national wealth in time period t+1 over national wealth in time period t.

Suppose that the contributions are made at the beginning of each time period. Then the net worth of the foundation sector at the beginning of any time period can be calculated as follows:

$$A_1 = C_1 + F \tag{5}$$

$$A_2 = A_1 \cdot x + C_2 = C_1 [x + g] + Fx \tag{6}$$

$$A_3 = A_2 \cdot x + C_3 = C_1 [x^2 + gx + g^2] + Fx^2 \tag{7}$$

$$A_n = A_{n-1} \cdot x + C_{n-1} = C_1 [x^{n-1} + g \cdot x^{n-2} + \ldots + g^t \cdot x^{n-t-1} + \ldots + g^{n-1}] + F \cdot x^{n-1} \tag{8}$$

$$= C_1 \cdot h(n) + F \cdot x^{n-1} \text{ where}$$

$$h(n) = \sum_{t=0}^{n-1} x^{n-t-1} \cdot g^t$$

$$\text{Now } h(n) = g^{n-1} \left[1 = \frac{x}{g} + \left(\frac{x}{g}\right)^2 + \ldots + \left(\frac{x}{g}\right)^{n-1}\right]$$

$$\text{Hence } A_n = C_1 \cdot g^{n-1} \left[\frac{1 - \left(\frac{x}{g}\right)^n}{1 - \frac{x}{g}}\right] + F \cdot x^{n-1} \tag{8'}$$

These equations demonstrate that the question of the foundation sector's survival is almost superficial. No matter how high the required pay-out rate, the foundation sector will survive as long as it receives new contributions.

A more important question is, Can the foundation sector grow given a pay-out requirement? To answer that question, the short-run and the long-run effects of a pay-out rate on the net worth of the foundation sector need to be analyzed.

To deal with the short-run effect we will examine the change in net worth of the sector from one period to the next, given a stock of assets "F" in the first period. From equations (5) and (6) note that the asset value of the foundation sector will decline if

$$A_2 - A_1 < 0$$

$$\rightarrow C_1 [x + g - 1] + F [x - 1] < 0$$

$$\rightarrow C_1 [g + r - p] < F [p - r]$$

$$\rightarrow \frac{C_1}{F} < \frac{[p - r]}{g - [p - r]} \tag{9}$$

Since "g- (p-r)" is only slightly different from 1, equation (9) states roughly that the net worth of the foundation sector will decline in any year in which the pay-out rate is greater than the rate of return on assets plus the ratio of new contributions to value of assets.

The long-run effect, however, may differ from this short-run effect. From equation (8), we note that

$$A_n - A_{n-1} = C_1 [x^{n-1} + (g-1) \cdot (x^{n-2} + x^{n-3} \cdot g + \ldots + x \cdot g^{n-3} + g^{n-2})] + F \cdot x^{n-2} \cdot (x-1)$$

$$= C_1 \cdot x^{n-1} + C_1 \cdot e \cdot h\ (n-1) + F \cdot x^{n-2} \cdot (r-p)$$

Only the last term $[F \cdot x^{n-2} \cdot (r-p)]$ can be negative with stable or growing contributions (that is, where $(g-1) = e > 0$) and even then only when the pay-out rate is higher than the rate of return on assets. If $p > r$, as n becomes large, x^{n-1} and x^{n-2} become small and $A_n - A_{n-1}$ approximately equals $C_1 \cdot e \cdot h\ (n-1)$ which in turn approximately equals $e \cdot A_{n-1}$ no matter how large the pay-out rate. Thus, over the long-run, the growth rate of foundation-sector net worth will not be less than the rate of growth of contributions to that sector.

If one is concerned about an institution or a sector's impact upon the economy over time, the concern should be more with the size of that institution relative to the size of other institutions than with the institution's absolute size alone. Therefore, it may be useful to analyze under what conditions the net worth of the foundation sector rises relative to national wealth:

From (8′)

$$\frac{A_n}{W_n} = \frac{C_1}{W_1} \cdot \frac{g^{n-1}}{a^{n-1}} \cdot \frac{1 - (\frac{x}{g})^n}{1 - (\frac{x}{g})} + \frac{F \cdot x^{n-1}}{W_1 \cdot a^{n-1}}$$

Under these conditions, the size (assets) of the foundation sector relative to national wealth will have a finite limit as long as

$$x < g \leqslant a \quad \text{or}$$

$$p > r\text{-}e \geqslant r\text{-}w$$

or, in other words, the pay-out rate is greater than the rate of return on assets minus the rate of growth on contributions, and the rate of growth of contributions is less than or equal to the rate of growth of national wealth. Since this latter requirement[15] appears quite reasonable over the long-run, it will be assumed throughout the remainder of this chapter.

The effect of the pay-out rate upon the growth of foundations is summarized in Table 3.

As we have mentioned before, much debate has centered around the question of whether the pay-out rate set by the Secretary of the Treasury has approximated the real rate of return on assets or whether, given current economic conditions, the pay-out rate has been higher. This debate has much less significance to the foundation sector than it does to individual foundations. As long as the pay-out rate is greater than the rate of return on assets minus the rate of increase in contributions, the net worth of the foundation sector will stabilize at some size which is a fraction of national wealth. And as long as the foundation sector receives new contributions, its survival is assured. The case where the pay-out rate is equal to the rate of return is then merely a requirement that falls between these two extremes. The perpetuity of

Table 3

Effect of Pay-Out Rate on Foundation-Sector Growth

Case	Pay-out Rate	Effect
(1)	$p < r-e$	Both the absolute and relative of the foundation sector grows without bounds.
(2)	$p > r-e$	The wealth of the foundation sector as a whole stabilizes at some fraction of national wealth.
(3)	$p > r-w$	Foundations receiving no new contributions decline in size relative to national wealth.
(4)	$p = r$	The pay-out rate equals the real rate of return on assets. By some accounts, this rule best describes congressional intentions with regard to the pay-out rate. Foundations cannot grow in real terms without new contributions. The sector as a whole, however, will grow in absolute size without bound as long as new contributions are received, and, in fact, it will grow by exactly the amount of the new contributions.
(5)	$P_t > r_t + \frac{C_t}{A^{t-1}}$	In a given year "t," the net worth of the foundation sector will decline when the pay-out rate is greater than the rate of return on assets plus the ratio of current contributions to net worth. However, over the long-run, case (3) above will hold.

the foundation sector is not threatened, nor will it be able to grow without limit relative to national wealth.

It would be well at this point to examine the relative magnitude of the parameters we have been discussing. From equation (8'), we can derive the fact that $A_n = \frac{C_1 \cdot g^n}{e-r+p} = \frac{C_n \cdot (1+e)}{e+p-r}$ for large n. Let us assume that case (3) holds. If the rate of growth of contributions equals the real rate of growth of the economy (approximately .04) and if the pay-out rate equals the rate of return on assets, then $A_n = 26 \cdot C_n$. That is, in any given year, the value of the assets held by the foundation sector will be approximately 26 times the value of assets contributed to the sector in that year. As noted in Table 4, if the pay-out rate is greater than or less than the rate of return on assets by one or two percentage points, the relative size of the foundation sector will change. However, the sector's survival is not in doubt, and total net worth remains quite large relative to current contributions.

In summary, a model of foundation-sector growth has demonstrated that there exists a wide range of pay-out rates which allow the government to limit the relative wealth of the foundation sector without in any way threatening its survival, growth, or perpetuity. In fact, the growth of the foundation sector will be primarily dependent upon the growth rate of contributions to that sector. The base for that rate of growth will be affected by the pay-out rate, but, under reasonable assumptions, that base will still be quite large relative to current contributions. Over the long-run, most pay-out rates will limit the net worth of the foundation sector to a fractional share of national wealth. However, the size of that share will still vary with the size of the pay-out rate itself.

Table 4

Net Worth of Foundation Sector Relative to Current Contributions

Pay-out Rate Minus Rate of Return on Assets (p - r)	Rate of Growth of Contributions (e)	A_n as a Multiple of C_n
+.02	.03	20.6
	.04	17.3
+.01	.03	25.8
	.04	20.8
0.00	.03	34.3
	.04	26.0
-.01	.03	51.5
	.04	34.7
-.02	.03	103.0
	.04	52.0

V

THE EFFECT OF DISTRIBUTIONAL REQUIREMENTS FOR FOUNDATIONS UPON THE CHARITABLE SECTOR

Having examined the effects of various distributional rules and pay-out rates upon individual foundations and the foundation sector as a whole, the next step is to take a brief look at their impact upon the efficiency and growth of the broader philanthropic or charitable sector.

Recall that the foundations most severly limited in growth by a pay-out requirement are those for which no new contributions are forthcoming. Therefore, the relative importance of these foundations will decline as the importance of charitable groups receiving new contributions increases. Yet a foundation able to acquire no new contributions is one for which, at the margin, all current charitable givers find its service less valuable than some alternative use of their charitable funds. Therefore, pay-out requirements enhance the efficiency of the charitable sector by encouraging the distribution of funds toward those needs that are recognized by current or recent donors and through organizations where these donors feel that charitable dollars will be effectively spent.

To be efficient, distributional requirements should also encourage foundations to play those distinct roles within the charitable sector that can only be provided by organizations with substantial accumulation of funds. In particular, foundations can provide support for projects requiring a stable source of funds for long periods of time and can meet needs of society when distributions from the rest of the charitable sector decline during recessionary periods. Unfortunately, current distributional requirements discourage these distinct roles by creating too much variation in the amount of required pay-out from year to year. The reforms suggested in Chapter III would correct this situation by leading to a more steady flow of funds which would not decline precipitously in recessionary periods.

As for growth, it must be observed that a decline in asset value for an individual foundation or even for the foundation sector does not necessarily mean a decline in asset value for the charitable sector. Many of the distributions of foundations are made as gifts of assets, buildings, works of art, and so forth, to other organizations and public

charities. Hence, it is primarily control of assets (either by donors or through trustees) that is limited by the requirement of a minimum pay-out by foundations. The share of national wealth controlled by the foundation sector may be limited, but the net worth of the charitable sector does not face similar restriction.

VI

CONCLUSION

This paper has examined the history, status, and long-run effects of distributional requirements toward foundations. After presenting a brief historical review of the current law, the paper concluded that any pay-out requirement should meet certain tests of equity across foundations and efficiency in the distribution of their funds. In particular, foundations should not be penalized for conservative investment policies, and neither the pay-out rate nor required distributions should vary much from year to year. To accomplish these goals, (1) foundations should not be required to distribute actual income when it is greater than the pay-out rate times net worth, (2) a consistent relationship should be maintained between the pay-out rate and the long-term real rate of return on an average foundation portfolio, and (3) required annual distributions should be a weighted average of the previous year's distributions and the pay-out rate times current net worth.

With regard to the foundation sector, we have demonstrated that the pay-out rate can be used to limit the accumulation of funds by the sector relative to its current contributions and to limit the share of national wealth held by this sector. There exists a wide range of pay-out rates which will limit this accumulation without threatening the perpetuity of the sector.

Finally, with regard to the broader charitable or philanthropic sector, we noted that a pay-out rate increases efficiency by encouraging distributions toward currently recognized needs of society. However, current pay-out requirements are also inefficient since they encourage distributions to rise in prosperity and fall in recession. As for the growth of the charitable sector, it was found to be even less affected by a pay-out rate for foundations than was the growth of either individual foundations or the foundation sector as a whole.

Footnotes

1. See IRS Code Section 4942 for taxes on failure to distribute income.

2. "U.S. Treasury Department Report on Private Foundations" (Washington, D.C.: U. S. Government Printing Office, 1965).

3. "Foundations, Private Giving, and Public Policy: Report and Recommendations of the Commission on Foundations and Private Philanthropy," (1970).

4. IRS Code Section 4942(e)(3).

5. In Chapter II we deal with the propriety of that particular measure.

6. For instance, nominal yields rose in 1974, indicating an increase in the pay-out requirement for 1975. However, the volatility of most asset markets in that year led Treasury to delay the adjustment that would otherwise have occurred.

7. Commission on Private Philanthropy and Public Needs, *Giving in America*, (1975), pp. 175-176.

8. Aggregate fair market value is based on a montly average of fair market values of securities when market quotations on those securities are readily available.

9. If the pay-out rate were actually based upon the annual "real" return to all assets, the fluctuation in required distributions would be greater, since the value of all assets and the pay-out rate (calculated in part by changes in value of assets) would normally rise and fall together.

10. Stability of pay-out requirements is of course supported by the foundations themselves. For instance, Dr. John Knowles, president of the Rockefeller Foundation, has commented that "the pay-out requirement should be sufficiently stable so that foundations can plan for the management of their portfolios and the development of programs without the disruption of shortrun changes." Hearings before the Subcommittee on Foundations of the Committee on Finance, U.S. Senate, November 24, 1974 (Washington, D.C.: U.S. Government Printing Office, 1974), p. 60.

11. For instance, a 500 common stock price index demonstrates a median "lead" time of 5½ months over peaks and troughs in GNP. See Victor Zarnowitz and Charlotte Boschan, "Cyclical Indicators: An Evaluation and New Leading Indexes, *"Business Conditions Digest* (May 1975), p. XV.

12. Interestingly, revisions (2) and (3) coincide at the margin with the spending requirements devised by Litvack, et. al., for endowment income. Concerned with insuring the perpetuity of an endowment, these economists argue that the ideal spending rule adopted by an institution would "protect the real value of the corpus endowement fund" (i.e., the long-term rate of spending would not be greater than the real rate of return on assets) and "make spendable endowment income . . .relatively stable from year to year." See James M. Litvack, Burton G. Malkiel, and Richard E. Quandt, "A Plan for the Definition of Endowment Income," *American Economic Review* (May 1974) LVIV, p. 433.

13. SInce new contributions will not offset D_t in formula(1) or (3), an increase in contributions C_t will require an increase in pay-out equal to $(\beta\alpha)\,\Delta A_{t+1} = (\beta\alpha)\,C_t$.

14. Robert Smith, Pew Memorial Trust, statement before the Subcommittee on Foundations, November 25, 1974, p. 117.

15. Note that if contributions are a stable portion of national wealth, w=e.