

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: The Ownership Income of Management

Volume Author/Editor: Wilbur G. Lewellen

Volume Publisher: UMI

Volume ISBN: 0-870-14222-4

Volume URL: <http://www.nber.org/books/lewe71-1>

Publication Date: 1971

Chapter Title: 2. The Methodology and the Data

Chapter Author: Wilbur G. Lewellen

Chapter URL: <http://www.nber.org/chapters/c6439>

Chapter pages in book: (p. 13 - 37)

THE METHODOLOGY AND THE DATA

THE MOST APPROPRIATE FRAME of reference for an analysis of the ownership-related income of senior corporate executives is a comparison with the remuneration they receive in their capacity as employees. Accordingly, a brief summary of the procedures utilized in arriving at the findings of the initial compensation study seems in order. It will also serve as an introduction to the methodology of the current investigation, since the same procedures have been extended to the two additional samples examined here. The techniques adopted in generating measures of annual ownership income, and in relating the various earnings flows to each other, will be seen to follow directly from the original analytical framework.

The Compensation Figures

As indicated earlier, the motive for undertaking the compensation study was to improve upon the prevailing empirical treatment of executive pay, which implicitly assumed that salary and bonus payments alone provided an adequate index of remuneration for purposes of drawing conclusions about inter-company or inter-industry patterns of reward. The rapid growth in popularity of several key forms of deferred and contingent compensation during the years immediately following World War II suggested, however, that a more comprehensive approach might well be required if developments in corporate policy were to be appraised properly. With that in mind, the objective established was to develop and apply a set of techniques which would permit measurement of the remuneration furnished by *all* the major items in the managerial pay package. The intention was that this be

accomplished in a manner that would not only allow the resulting values to be compared meaningfully but would produce a workable figure for total annual compensation.

The magnitude of the income accruing to an individual in a given year from his salary and bonus earnings was easily determined, simply by subtracting from the observed pre-tax amounts the relevant statutory personal income tax liability for the year. The latter must reflect the deductions and exemptions from taxable income which the man is likely to claim, but estimates of those quantities, by income bracket, were obtainable from IRS *Statistics of Income* tabulations.

A more imaginative approach was necessary in connection with rewards which had more complex timing, taxation, and contingency features. For each such "noncurrent" instrument, the valuation framework consisted of specifying what was denoted its "current income equivalent." This concept was defined to be the amount of additional current income—additional salary and bonus, if you will—which would be as valuable, after taxes, to the executive in question as the particular arrangement being considered. In effect, the hypothesis was that the most useful way to go about measuring on a common scale the compensation provided by the disparate supplements to direct cash payments to executives was to calculate the size of the cash increments which, if *substituted* for those supplements, would leave the men involved equally well off. "Equally well off" was, of course, perceived in after-tax terms.

As an illustration, in the case of a pension plan the question was asked: How much of an increase in annual after-tax salary would the prospective pension recipient require in order to be able to purchase therewith an individual retirement annuity from an insurance company which would be similar in form and equal in value to the benefits promised him under his corporation's retirement plan? The indicated annual premium payments to the insurer were taken to be the "after-tax current income equivalent" of the man's pension expectations. They measure very precisely the amount of additional immediate cash income he would need in order to meet the purchase price of an alternative market instrument guaranteeing him the same level of economic security in retirement that his pension was designed

to provide. By extension, the increase in his annual *pre-tax* salary which would have produced the required after-tax increments was interpreted as the pension's "before-tax current income equivalent."

While pension promises were especially easy to handle in such a framework due to the existence of a close market substitute readily available to an individual executive, other supplementary compensation arrangements were amenable to valuation by essentially the same approach. The current income equivalent of a post-retirement deferred pay contract, for example, was defined as that stream of annual payments which, if begun in the year the contract was entered into and continued up to retirement age, would have an after-tax present value matching that of the prospective deferred payments themselves. The equivalent of a stock option was specified to be a series of cash increments spread over the formal term of the option and having a value equal to the difference—net of capital gains taxes—between the option price of the shares involved and their market price on the date the option was exercised by its recipient. Similar procedures were employed in valuing the other components of the pay package. The result is a set of indices of remuneration which permit convenient and accurate statements about the absolute magnitude and relative importance of a group of originally quite different rewards.

The details of those procedures are sufficiently extensive that the interested reader is referred to the original treatise for their complete description.¹ An illustration of the kind of profile of the managerial pay package which emerges from their application to a typical individual's experience will be provided below. For present purposes, however, it should be enough to stress that in designing the relevant valuation techniques, the following principles were adhered to throughout: (1) "Equivalence" between a series of hypothetical increments to current income on the one hand, and the benefits anticipated from a given deferred or contingent compensation arrangement on the other, was always defined in terms of the after-tax present values of the two streams of payments. (2) The current income equivalent amounts were established according to that approach by

¹ Lewellen, *op. cit.*, see especially Chapters 2 through 6.

specifying that they be spread over the period of the executive's working life, during which he was earning the right to receive the applicable deferred payments.² (3) Secular increases in benefits pursuant to a particular compensation plan were taken into account by constructing an additional current income equivalent "layer" for each such increase. (4) Every current equivalent thereby created was designed in a manner that would allow it to become an operational alternative to the arrangement being evaluated in an actual scheme of executive rewards. Corporations could, in practice, literally replace their officers' pensions, deferred pay, or stock options with the respective current income equivalents and generate precisely matching levels of annual after-tax remuneration. If these principles are kept in mind, the bulk of what is important about the character of the compensation figures which serve as background to the ownership income analysis here can be understood.³

Parameters of the Study

As part of the computational process, a number of assumptions about the personal economic circumstances of the men included in the sample were necessary. As noted above, estimates of deductions and exemptions from currently taxable earnings were taken from *Statistics of Income* records covering the appropriate period,⁴ the convention being that senior corporate executives' experiences follow the averages for their various income brackets each year. In the absence of any definite evidence to the contrary, it was further assumed that the individuals involved were married and, therefore, that the income-splitting feature of the federal personal tax applied. Where possible, this assumption was checked by consulting one of the available *Who's Who* compilations.⁵

² Thus, the elements in the current income equivalent of a pension promise were spread over the interval beginning with the time the executive first came under the plan and ending with age sixty-four.

³ For a description of some alternative methodology, directed generally toward the same objective, see Burgess, *op. cit.*

⁴ U.S. Treasury Department, Internal Revenue Service, *Statistics of Income: Individual Tax Returns*, Washington, D.C., Government Printing Office.

⁵ E.g., *Who's Who in America* and *World Who's Who in Commerce and Industry*, both published in Chicago by Marquis-Who's Who, Incorporated.

Since it seemed probable that most highly paid executives would enjoy at least some additional income from sources other than their employer companies, external receipts amounting to 15 per cent of the observed annual salary and bonus payments were specified in every instance. The feeling was that this might represent something like a 4 to 5 per cent annual pre-tax return in the form of dividend and interest income on an investment portfolio three to four times the man's yearly cash compensation. The point of recognizing these flows was to arrive at a set of marginal tax rate calculations reflecting the fact that executives almost certainly received their remuneration as employees in concert with other receipts; accordingly, correspondingly higher effective marginal brackets than compensation payments alone would suggest should be prescribed, given a progressive rate structure. In that context, of course, any capital gains realized can be ignored, since the alternative flat 25 per cent tax rate thereon would have been chosen by men at the income levels empirically relevant here. As it happens, the resulting predictions of taxable "outside income" appear to have been somewhat on the low side in the light of subsequent information. We shall return to this issue below.

In computing the various present values required in the analysis, a $2\frac{1}{2}$ per cent per annum after-tax discount rate was utilized when dealing with secure benefit promises of the type associated with pension and cash deferred compensation arrangements. A 5 per cent per annum after-tax rate was used for the more uncertain stock options, stock deferred pay, and other stock-based schemes. These parameters were picked to approximate the kinds of returns that might have been expected from, on the one hand, a pure bond portfolio and, on the other, a diversified equities fund, during the period 1940 to 1963 for which data were collected.⁶ While these are obviously arbitrary choices open to a range of possible criticisms, the figures decided upon do not seem unreasonable and any alternative assumptions could be similarly attacked.

⁶ The idea was to specify opportunity costs which would be characteristic of the returns promised by investment vehicles embodying degrees of risk comparable to the rewards in question. It will be noted that the time period examined precedes the severe credit pressures and rising interest rates of the mid-1960's.

Nevertheless, to avoid being too cavalier, in the case of these percentages and each of the other parameters indicated, a thorough sensitivity analysis was performed to test the likelihood that the compensation figures generated might depend significantly on the particular parametric values incorporated in the computations. The clear conclusion was that any meaningful set of substitute choices—e.g., doubling the two discount rates to 5 and 10 per cent per annum after taxes—would have had little impact on either the historical trends or cross-sectional patterns which emerged. The saving feature of the situation turned out to be the fact that most assumptions influenced *both* sides of the many compensation-benefits vs. current-income-equivalent equations to just about the same extent, thus creating offsetting effects on the earnings measures produced.⁷

Coverage

Given the framework described, the only noteworthy items of remuneration that had to be excluded from the empirical analysis for lack of sufficient information were life and medical insurance programs and executive expense accounts. Corporate proxy statements do not list the benefit structures or receipts enjoyed by individual officers under either category of reward. Fortunately, for executives at the level we will be concerned with here, such devices should not bulk large in the compensation totals nor should their absence compromise the usefulness of the findings.⁸ With these minor exceptions, it was

⁷ For example, if a 5 per cent discount rate were used in calculating the present value of an executive's pension expectations instead of a 2½ per cent figure, the same 5 per cent rate should be adopted in finding the individual retirement annuity whose purchase would provide a matching present value. Since it necessarily is the comparison *between* the resulting present value figures rather than their respective absolute magnitudes which establishes "equivalence" in this manner, a fairly wide range of discount rates will, if applied simultaneously to both sides, yield roughly the same answers. See Lewellen, *op. cit.*, Chapter 12, for the details.

⁸ Support for this contention in connection with expense accounts can be found in C. A. Hall, Jr., *Effects of Taxation on Executive Compensation and Retirement Plans*, Cambridge, Massachusetts, Riverside Press, 1951, where he states on p. 14 that: "According to executives interviewed, company-paid-for expenses of the type which really reduce executives' buying costs and repre-

possible for the large manufacturing companies—and is possible for the retailing and small manufacturing firms—to develop a good chronological record of the size and composition of the senior corporate executive pay package dating back to the year 1940. Since the SEC and its proxy statement reporting requirements are both relatively recent phenomena, consistently reliable and comprehensive information for earlier periods is simply not available.

Application

A concrete illustration of the kind of output which is generated when the computational procedures outlined are applied to a particular executive's employment circumstances is provided in Appendix A. As can be seen from that illustration, the analytical framework adopted requires a very "personalized" approach to valuation. In order to appraise an executive's rewards, his age and marital status must be known, and data on his compensation must be processed, from the moment he first becomes eligible for benefits under any of his firm's important deferred or contingent pay plans. It is these requirements which dictate that only the rewards of those men whose earnings histories are reported on in corporate proxy statements can be analyzed; such documents are the sole public repositories of information on the pay of particular individuals. This explains why the concern here will be exclusively with the topmost segment of the managerial hierarchy.

Stock Ownership Data

Those same executives' stockholdings in their own companies comprise the other—and at the moment, more important—portion of the story. As was indicated above, the possibility that the income consequences of senior corporate officers' equity investments in their employer firms might be quite substantial was raised by a casual inspection of stock ownership positions while the initial data on com-

sent extra income are of negligible importance in large companies." Admittedly, the age of this finding may by now cast some doubt on its credibility, but no more recent evidence seems to be available.

pensation were being collected. Upon completion of that effort, a more careful appraisal of the dimensions and implications of the ownership phenomenon—as well as an extension of the entire analysis to a broader range of enterprises—seemed a logical next step.

The approach was simply to go through the appropriate proxy statements and record, for each man whose circumstances were of interest, the number of shares of his company's common stock that he owned at the beginning of every year for which compensation data had been compiled.⁹ The published figures pertain to those securities which are either directly or beneficially owned by the executive and his immediate family. An example of beneficial ownership, as interpreted by the SEC, would be a situation in which shares are temporarily held in trust for the man in question under an arrangement calling for his receipt of the annual dividends thereon and for the subsequent distribution of the shares to him upon, say, the demise of a relative. Alternatively, the securities might be nominally owned by a private holding company, which in turn would be controlled by the man and his family. In either case, the pecuniary rewards and contingencies of a direct ownership position are effectively transmitted to the individual executive, and the shares at issue properly considered a part of his total portfolio. However, the vast majority of stockholdings observed empirically were owned outright by the men in the sample.

On the other side of the coin, the "immediate family" definition noted encompasses only the executive, his wife, and their unmarried children. The likelihood, therefore, is that the resulting data somewhat understate the true intensity of management's ownership involvement. Securities held by married children and by other fairly close family members are excluded—and these could, of course, be sizeable on occasion. The omissions are worth pointing out. They imply that a more comprehensive set of figures, were it available, would necessarily identify additional holdings whose influence would reinforce many of the conclusions offered here.

⁹ Employer-company preferred stock and/or bond holdings by executives were not included in the investigation, both because they were of negligible size in the aggregate, and because, in principle, it is the identification of executives with *common stockholder* interests which is at issue here.

Since most senior corporate executives are also members of their respective firms' boards of directors, the proxy statement information on directors' stock ownership makes it possible to obtain data for all but a very few men whose compensation places them among their companies' top employees. In situations where the proxy statement listings are inadequate, a secondary source of information is the monthly SEC publication *Official Summary of Security Transactions and Holdings*.¹⁰ This document contains a record of the securities owned—again, either directly or beneficially—by corporate officers and directors who buy or sell any of their firms' common or preferred shares within a given thirty-day period. While the data frequently lag behind the actual transactions by several months, for purposes of an historical analysis an executive can often be located among those tabulations for the years during which he was an officer but not yet a director.¹¹ In all, reliable annual stock ownership figures could be compiled for fully 552 of the 558 men who comprised the original large-manufacturing compensation sample, and for every one of the nearly 400 additional highly paid executives in the small-manufacturing and retail trade samples. The characteristics of each of these three groups will be discussed below.

Computational Framework

When the resulting stockholding data are supplemented by records of past share prices and corporate dividend declarations, a variety of elements of senior management's secular ownership experience may be examined. By the nature of our objectives, the market value of the indicated holdings at particular points in time, the capital gains and losses to which the individuals involved were subjected, and the cash dividends they received would appear to be the most significant components of that experience.

Since corporations report the relevant stock ownership positions every year, it is both a logical undertaking and an easy task to con-

¹⁰ U.S. Securities and Exchange Commission, Washington, D.C., Government Printing Office.

¹¹ The same tabulations also assisted in identifying the dates of stock option exercises by executives as part of the compensation investigation.

struct an annual record of the market value of top executives' equity investments in their own firms. The first of the year seems a convenient valuation date, and the figures generated in subsequent chapters therefore are produced by multiplying the number of shares of his company's common stock owned by the executive as of January 1 of each year by the corresponding January 1 market price per share.¹² Because certain firms list directors' stockholdings for other dates, the *Official Summary of Transactions* bulletin cited above was used, where necessary, to retrace the relevant data to the start of the year.

The annual capital gains and losses associated with the observed holdings can, of course, take two forms: realized gains and so-called "paper" gains. The combined consequences of both should, in the view here, be recognized as important to a determination of the total effective ownership income of top executives—since quite clearly both can contribute to substantial changes in an individual's personal net worth. This contention is reinforced by the opportunity which is always available for investors to realize indirectly whatever paper gains they may enjoy by pledging the securities whose value has appreciated as collateral for personal loans. Accordingly, an executive's aggregate capital gain or loss as recorded for a particular year is computed by adding to his realized profits or losses from sales of his corporation's common stock during that year the increase or decrease in the market value from January 1 to December 31 of any shares he held *throughout* the year.

In order to properly implement this accrual approach to valuation and measurement, it was necessary in each instance to define the appropriate annual magnitudes in such a way as to avoid double-counting. This was accomplished by treating as the relevant *realized* gain for the year in question only the difference between the selling price of the shares disposed of and their immediately preceding January 1 market price. Thus, a significant fraction of many of the realized gains experienced by the men in the sample end up being parceled out

¹² Actually, due to the New Year holiday, December 31 closing prices were employed instead. The data were collected from back issues of the *Wall Street Journal* and the *Commercial and Financial Chronicle*.

here as accrued gains attributable to prior periods. By the same token, the paper gain tabulated for stock which is observed to be acquired after the beginning of a given year but held at least until the start of the following year is set equal to the difference between the purchase price of the shares and their market price on the succeeding December 31. These procedures provide both a consistent and comprehensive annual record of the capital appreciation patterns at issue.¹³

As a means of keeping the data collection and programming effort required within manageable bounds, however, an approximation to these procedures was decided upon in the execution of the analysis, especially where share prices were concerned. To avoid having to take into account individually all of the various stock transactions engaged in by the some 950 men in the three samples over the quarter-century period studied, the assumption was made instead that all purchases and sales took place at a price *midway* between the opening and closing prices of the year in which the transaction occurred.

For example, if an executive were found to own five-thousand shares of his firm's stock on January 1, 1960, their market value then being \$20 per share, and six-thousand shares on December 31 at a price of \$30 each, he was assumed to have acquired the observed difference of one-thousand shares at a cost of \$25 per share during the year. His total capital gain was therefore defined to be \$55,000—the imputed result of a \$10 per share increment on five-thousand shares, plus a \$5 gain on one-thousand shares. Without this simplification, the data needs for the study would have quickly gotten out of hand because of the sheer number of man-years of experience involved, despite the fact that the great majority of senior executives really undertake very little short-term trading in their employer com-

¹³ To illustrate: Consider the case of an executive who purchases 1000 shares of his company's common stock during 1960 and resells them in 1962. Let us assume that the purchase price was \$50 per share; the December 31, 1960, price \$60 per share; the December 31, 1961, price \$70; and the eventual selling price \$80. Pursuant to the computational framework adopted here, the over-all realized profit of \$30,000 before taxes would be divided up as an accrued capital gain of \$10,000 for the year 1960, an accrued gain of \$10,000 for 1961, and a realized gain of \$10,000 for 1962. The corresponding measurements for any shares both bought and sold *within* a single year, of course, are clear-cut.

panies' shares.¹⁴ There is no reason to suspect that, in the aggregate, any bias is thereby introduced into the findings or that any important information is lost.¹⁵ The necessary share price adjustments for stock splits and stock dividends are, of course, built into the computations.

Executives' cash dividend receipts are estimated in a similar manner. If a man's stockholdings are seen to change during a particular year, the convention is that he received just half the total reported cash dividend payments by the firm for that year on the *incremental* shares. In the example cited above, then, if the corporation's 1960 dividend rate had been \$1 per share, the executive described would have been credited with a total pre-tax dividend income of \$5500, this consisting of \$1 each on five-thousand shares added to 50 cents per share on one-thousand shares. In cases where stock dividends are declared, a complementary approximation is employed. The assumption is that the additional shares are distributed to the man halfway through the relevant year, causing his cash dividend receipts to be higher to that extent over the second six months. By this procedure, a 4 per cent stock dividend is translated into aggregate cash dividend flows amounting to 102 per cent of the reported per-share figure for the year.

Compensation and Ownership Income

It should be stressed that in all the foregoing calculations, a careful separation is maintained between the *compensation* which is generated in particular periods for the executive by such arrangements as stock bonuses and stock options on the one hand, and the man's subsequent *investment* income from his continued ownership of the shares thus acquired on the other. Once those shares are formally conveyed to him by his firm under a stock bonus plan, for instance, the compensa-

¹⁴ For documentation, see below, pp. 107-108.

¹⁵ Thus, it would seem that possible errors in the attendant stock price estimates are as apt to be on the high as the low side of the true values in any given situation. They may, in consequence, be expected to balance out for the sample as a whole. Indirect support for this contention can be found in C. E. Edwards and J. G. Hilton, "A Note on the High-Low Price Average as an Estimator of Annual Average Stock Prices," *Journal of Finance*, Vol. XXI, No. 1 (March 1966), pp. 112-115.

tion aspect of the interchange is regarded here as finished. Similarly, the option agreement—and the process of measuring the magnitude of the attendant remuneration—is treated as being terminated on the date the option recipient exercises his right to purchase the specified securities. The difference between the market price of the securities at that point and the stated option price the man pays definitively establishes his reward.¹⁶ Any dividend earnings or capital gains experienced thereafter from any of these holdings clearly occur as a result of the executive's decision to retain the securities in his portfolio and to pursue the associated investment in his company. Because those flows are not logically a part of the compensation transaction, they are grouped here with the ownership income attributable to other stockholdings. This distinction is worth bearing in mind in interpreting the subsequent findings.

Tax Liabilities

On the presumption that the capital gains realized by senior corporate executives from trading in their own firms' common shares are predominantly long-term in nature,¹⁷ a reasonable first approximation of the applicable tax liabilities thereon would be a flat 25 per cent. In almost every case, such men have incomes large enough to lead them, when the issue arises, to choose this "alternative" tax computation in preference to including half their capital gains with inflows taxable at regular statutory rates.¹⁸ In the present context, however, it is necessary to specify the implicit tax liabilities on *accrued* as well as on actually realized gains if the hoped-for annual record of executives' ownership income is to be made meaningful in after-tax terms for purposes of a comparison with compensation. Because the payment of such taxes is, of course, deferred to the date the securities in

¹⁶ The mechanics of translating that figure into a "current income equivalent" for the option are described in Lewellen, *op. cit.*, Chapter 4.

¹⁷ Again, see pp. 107–108 below.

¹⁸ For example, during the period 1954 to 1963 which comprised the last ten years of the empirical analysis, 25 per cent was the pertinent capital gains tax rate for any individual whose taxable income exceeded \$32,000. Very few executives in the sample fell below that level.

question are sold rather than being levied on the accrual basis used here to measure many of the pre-tax gains which are of interest, some adjustment for the consequences of deferral is required. In addition, there is always the possibility that a portion of the relevant gains will turn out to be so long-term as to escape income taxation entirely—i.e., the securities may be retained in the executive's portfolio until he dies, in which circumstance no capital gains tax on the accrued profits would be paid.

For these reasons, 15 per cent was adopted as an estimate of the "true" over-all effective rate and was applied uniformly in the calculations to both realized and accrued annual before-tax capital gains. The choice was arbitrary, and was designed merely to remove in a convenient manner at least some part of what would otherwise obviously have been a persistent bias toward attributing too high a tax liability to the observed gains had the nominal 25 per cent figure been used. The reader is asked to interpret the choice in that spirit.¹⁹ As it happens, just about *any* figure between zero and 25 per cent could be employed as far as the conclusions reached in the following chapters are concerned, since the important comparisons, as we shall see, are quite insensitive to the particular tax rate chosen in the

¹⁹ As a rough guide, the feeling was that 15 per cent would be a reasonable approximation of the resulting average tax rate if one-fifth of the executives in the sample passed on their stockholdings in their estates—thereby reducing the average rate from 25 to 20 per cent—and, further, if in the face of an after-tax annual discount rate of 5 per cent, the mean length of time for the remaining individuals between the accrual and the realization of their capital gains were five years. Hence, the discount factor $1/(1.05)^5$ will diminish the effective present value of a tax liability on a gain accrued currently by about one-fourth, and lower an implied 20 per cent tax rate to 15 per cent. While basing the decision on these supplementary parameters makes the final result no less arbitrary, it does suggest the factors which were considered. Subsequent to the time the computations for the current investigation were performed, a study by Bailey (M. J. Bailey, "Capital Gains and Income Taxation," in A. C. Harberger and M. J. Bailey, eds., *The Taxation of Income From Capital*, Washington, D.C., The Brookings Institution, 1969, pp. 11–49) presented evidence suggesting that a number as low as 8 or 9 per cent would be a reasonable approximation of the actual effective tax rate on capital gains for the average investor. By that standard, the after-tax capital gains attributed here to executives—and, in consequence, the strength of the ownership-management income link—will tend to have been understated. Once again, therefore, the revision in the data which would be called for would only buttress the arguments made below.

indicated range. For consistency, 15 per cent was also designated as the effective tax rate on stock option profits in the compensation calculations. In both applications, capital gains and losses were treated symmetrically by imputing an associated 15 per cent tax *saving* to any declines in the market value of securities held, on the assumption that sufficient ultimate net profits would exist to provide a usable tax offset, should paper losses eventually emerge as realized losses.

The levies on executives' dividend receipts from holdings of their firms' shares present a slightly different problem. Given a progressive personal income tax schedule, the taxes assessed on such receipts, those on concurrent salary and bonus payments, and those on whatever additional income executives may enjoy from other sources, are interdependent. To ensure accuracy, the magnitude of each element for the relevant year for every individual should be specified prior to calculating the taxes on any one of the three. The difficulty is that in arriving at tax liabilities in connection with the original compensation study of large manufacturers, an estimate of the probable size of executives' total taxable noncompensation income (which would include inflows from investments in both their own *and* other companies' stock) had to be made.²⁰ As the dividend data, or at least that portion relating to ownership of employer-company shares, now become directly available, however, the initial outside income estimate of 15 per cent of a man's pre-tax annual salary plus bonus earnings begins to appear too low. Indeed, employer-company dividend payments to executives turn out to be sufficiently large in themselves as to suggest that a figure for total noncompensation income of approximately 30 per cent of the observed salary plus bonus payments would have been a better estimate to begin with.²¹

In the light of that evidence, the implication is that the compensation analysis should be repeated with an improved choice of parameters, and a new set of time series generated for the current investigation. Not surprisingly, that solution will be rejected here—but for reasons of principle as well as concern with the practical problem of

²⁰ See above, pp. 16–17.

²¹ The data are presented in Chapter 4.

actually redoing the extensive calculations required. For one thing, the fact is that even if an underestimate of top management's aggregate taxable outside income has been made, the gain in accuracy which would be achieved by revising the estimate would be very small. Sensitivity tests with alternative assumptions about outside income ranging from zero to 50 per cent of salary plus bonus were undertaken as part of the original compensation study.²² The clear conclusion was that the resulting historical profile of the components of the pay package for the typical executive would not have been significantly affected even by substantial changes in those assumptions.²³

Secondly, a finding to the effect that executives' pre-tax dividend and interest income amounted on average to, say, 30 per cent as much as their pre-tax salary and bonus earnings would by no means imply that their total additional *taxable* income was of that magnitude. Just as the normal disposition of income received in the form of employee compensation gives rise to deductions for tax purposes, it is equally likely that the expenses associated with the maintenance of a large investment portfolio would cause the taxable income generated therefrom to be noticeably less than the corresponding gross income. In particular, it does not seem unreasonable to expect that fairly sizeable deductions for interest payments might frequently be claimed by executives as a consequence of having borrowed the funds to acquire some fraction of the equity portfolios we observe.²⁴ By that interpretation, the initial stipulation that effective tax rates on senior corporate officers' direct annual income could be calculated by assuming aggregate receipts equal to 115 per cent of recorded salary plus bonus payments does not, in retrospect, seem an inappropriate basis for the analysis. The tax liabilities on compensation prescribed by this assumption will, therefore, be retained here, and the relevant

²² See the earlier discussion on p. 18.

²³ Lewellen, *op. cit.*, Chapter 12.

²⁴ The prevalence of this phenomenon was suggested to the author in conversations with V. Henry Rothschild II, whose book *Compensating the Corporate Executive* (New York, Ronald Press, Editions in 1942, 1951, and 1962), written in collaboration with G. T. Washington, is the classic work in the field of executive remuneration.

liabilities on the dividend income from holdings of employer-company shares will be determined simply by applying matching over-all effective tax rates to those payments as well.

To illustrate: An executive who was paid \$100,000 in salary and bonus by his firm during a given year was specified, in the framework of the compensation investigation, to have enjoyed an additional \$15,000 worth of current ordinary income from other sources. Let us suppose that, after the probable amounts of his deductions and exemptions were taken into consideration—by utilizing IRS data on income recipients in the \$115,000 range for the year in question—the man's total personal tax liability was estimated to be \$46,000. Of that aggregate figure, the fraction 100/115, or \$40,000, would have been attributed to his salary and bonus payments, implying a 40 per cent over-all effective tax rate and an after-tax direct cash compensation of \$60,000.

Accordingly, taxes at 40 per cent will be assumed here to apply to any dividend receipts enjoyed by the executive from ownership of his firm's shares—even if they turn out to exceed \$15,000 before taxes for the relevant year. The same procedure will be followed for all three company samples examined, the compensation calculations in each case preceding the introduction of the attendant stock ownership data.

To the extent that the average executive's taxable income is thereby underestimated, the effect of these approximations will be an overstatement of after-tax salaries-plus-bonuses and after-tax dividend receipts, owing to an understatement of the pertinent tax liabilities.²⁵ This will, however, bias the findings in such a way as to make the relative importance of top management's ownership income depend-

²⁵ Some feeling for the degree of possible tax understatement which might be involved in a typical situation can be obtained from the example cited above. According to the federal personal income tax schedule that was in force from 1954 through 1963, the over-all effective tax rate on a gross income of \$115,000 would have been 45.3 per cent, assuming deductions and exemptions at the general level indicated by IRS tabulations. The effective rate on \$130,000—which might consist of \$100,000 of salary and bonus plus an additional 30 per cent rather than 15 per cent outside income—would have been 47.4 per cent. That difference does not seem a cause for concern, even if it does actually denote an error.

ence appear *less* than it really is, since salaries and bonuses happen to comprise a larger share of total *compensation* than dividends comprise of total *ownership income*. If errors have been made by overoptimism about the magnitude of executives' deductions and exemptions from taxable income, then, the appropriate corrections would only strengthen the conclusions reached below. This issue will be addressed more precisely through sensitivity analyses as the data are developed.²⁶

Net and Absolute Capital Gains

In connection with certain of the important comparisons, separate calculations will be presented for what are termed the "net" and "absolute" capital gains experienced by executives. The objective in so doing will be to go beyond the combined effects of annual corporate stock price changes on the wealth position of the entire group of men in the sample in order to highlight the *individual* profits and losses—whether realized or accrued—which comprise those aggregate figures. Thus, if it should occur that in a sample of 50 senior executives during a particular period, 25 enjoyed increases in the market value of their employer-company shareholdings amounting to \$50,000 apiece, and the other 25 each suffered simultaneous \$50,000 declines, it would follow that, on balance, no *net* capital gain was experienced by the group as a whole. On the other hand, it is also true that the mean *absolute* change in wealth for the 50 executives was fully \$50,000 per capita. The choice as to which of these two measures of ownership income flows is the more relevant in a given situation is a function of the nature of the problem being examined. Still, it seems desirable that both be available for the researcher's—and the reader's—alternative interpretation. Conveniently enough, the stock prices of the various individual firms which were included in the three samples moved in similar directions with sufficient frequency that in most years the differences—except for sign—between the average net and absolute gains figures were slight.

²⁶ See, especially, Chapter 4.

The Large Manufacturing Sample

The group of corporations to whose executives' circumstances the foregoing analytical framework will be applied consists of 80 firms broken down into three distinct categories. As has been indicated, 50 of these firms are classed among the very largest of the nation's manufacturing enterprises,²⁷ and represent the sample which was compiled for the original study of executive compensation. They were chosen by a process which was designed to include literally the 50 largest such companies. However, problems with gaps in the necessary data, with mergers, and with the late stock exchange listings of certain firms prevented this goal from being achieved.

The basic reference source was *Fortune* magazine's roster of the five hundred largest industrials.²⁸ While corporations in that tabulation are ranked according to their sales volumes for the year, similar rankings by total assets, by profits, or by aggregate stock market values would result in essentially the same firms appearing on the corresponding lists.²⁹ The selection technique was simply to begin at the top and work down, including in the sample every company for whom sufficient information was available in past proxy statements to permit a meaningful historical analysis and evaluation of its top executives' remuneration. The description above, and in Appendix A, of the computational procedures employed suggests that the associated data requirements were reasonably stringent. As a consequence, the manner in which many firms chose to respond to the SEC's reporting rules for compensation made it impossible to include them in the investigation.

Similarly, because other companies of substantial size in 1963 had

²⁷ The combined sales of the 50 firms in 1963 were \$93.8 billion, and total manufacturing sector revenues in that year were \$417.3 billion. Source: United States Department of Commerce, *Survey of Current Business*, May 1965, p. S-4.

²⁸ "The Fortune Directory," *Fortune*, Vol. 70, No. 1 (July 1964), pp. 179-198.

²⁹ For example, when the corporations on the *Fortune* list were re-ranked on the basis of their total assets, only four of the initial top twenty in 1963 were not present among the top twenty on the revised list.

been formed by a series of mergers and acquisitions, the proxy statement records of their officers' pay did not always have enough consistency or continuity to allow a proper reconstruction of the relevant experience. Finally, even certain very large firms had been admitted to trading on an organized securities exchange—thereby coming under the disclosure regulations of the SEC—too recently to have generated an adequate public data history.³⁰

For these reasons, it became necessary to reach down as far as the corporation which ranked 78th in sales volume in 1963 in order to round out a list of fifty concerns whose compensation policies could be traced with the requisite precision. Despite these minor difficulties, the resulting sample clearly encompasses a sufficiently broad range of industrial categories—some fifteen in all—and is comprised throughout of firms of sufficient size—sales running from \$660 million to \$16.5 billion in 1963—that the findings therefrom can appropriately be considered a fair representation of the scale and structure of managerial rewards in the nation's large, publicly held manufacturing enterprises. The complete list of firms involved is recorded in Appendix B.

The goal established was to collect data on as many executive positions in the corporate hierarchy as was feasible, and to go as far back in time as the proxy statement evidence would allow. Operationally, it turned out that the year 1940 was pretty well the practical limit of the analysis. The SEC first demanded formal proxy information of firms in the late 1930's, but the initial rules for reporting the compensation figures which are of interest here were not rigorous enough to bring about uniform and comprehensive disclosure for several years. With the exceptions noted above, however, it was possible to assemble a good history for most large companies from

³⁰ The SEC rules were tightened in the mid-1960's to require proxy statement compensation reports of many unlisted companies as well, but this change came too late to be of any help in connection with data for earlier periods. Perhaps the most prominent case of a large firm for which such information is unavailable is Ford Motor Company, whose shares were not listed on an exchange until 1956. A comparable problem still exists for Western Electric Company, which is one of the country's largest manufacturers but is a wholly owned subsidiary of AT&T and therefore not required to report its executives' earnings separately.

1940 on. The analysis ends with 1963 simply because that year was the latest for which data were available at the time the original study was begun.³¹

The number of individuals whose earnings and stockholdings are tabulated in the typical proxy statement varies widely from company to company—and, for that matter, very often from year to year within a given company. After a few trial runs, it became evident that in considering the entire group of firms, an evaluation of the remuneration and the ownership income associated with the *five* highest-paid executive positions in each would be the maximum coverage that the data would support with any reasonable consistency. A history of those five positions will therefore be the focus of the discussion. The sample that emerges includes 552 different individuals in the 50 corporations. Of the 6000 man-years of compensation and investment experience which would comprise a complete data matrix—i.e., five positions in 50 companies over 24 years—a total of roughly 5200 were filled in. A record of the resulting population, broken down by year and by executive rank, is presented in Appendix C.³²

The Retail Trade Sample

As a counterpoint to that sample, information on a separate group of corporations engaged primarily in retail trade was compiled. While any one of a number of broad categories of firms could have provided a potentially interesting and useful contrast to the findings for the large industrials, retailers were chosen because they offered what seemed a sensible combination of characteristics for purposes of the study. The nature of their business activities differs markedly from that of manufacturers, thus allowing the structure of rewards in a

³¹ The cooperation of the staff of the Baker Library at the Harvard Business School in securing access to the extensive collection of corporation records which that library maintains is gratefully acknowledged. Those documents provided the raw materials for both this investigation and its predecessor.

³² This sample is marginally smaller than that which was included in the initial compensation study, since, as was indicated above, there were six executives for whom earnings data could be obtained but not stock ownership information.

substantially different organizational context to be examined. Convenient, up-to-date rankings of retailing enterprises by annual sales volume are furnished by *Fortune* magazine in the same way that the 500 largest industrials are tabulated each year. Since the common shares of most sizeable retailers have been listed and traded on securities exchanges for quite some time, good historical proxy statement data are available. Finally, the various elements of the executive compensation package have been developed by retail firms over the years to a degree that produces in the relevant earnings figures a rich background for an investigation of management's ownership income. If these attributes do not render retailers the *only* appropriate complementary sample choice, they do at least suggest a manifest suitability for the role.

The process of selecting particular companies paralleled that adopted in connection with the large manufacturing sample. Beginning at the top of the *Fortune* "Merchandising" rankings for 1963 and working downward,³³ the back proxy statement files of each successive firm were reviewed, and every corporation for which adequate historical information on executive remuneration and stockholdings could be assembled was included. In the interest of constructing as coherent a sample as possible, grocery chains were separated from the department-and-discount-store group, only the latter being considered. Logically, the decision could have gone either way, but the food retailers appeared to embody certain of the desirable characteristics noted above to a somewhat smaller extent than did their nonfood brethren. Consequently, they seemed a marginally less attractive choice. The 1963 *Fortune* list was employed simply to ensure maximum comparability of the findings with the original large manufacturing output. By the same reasoning, information was collected again for the period 1940 through 1963.

In all, a proper chronological analysis was feasible for the experience of the men who filled the top five executive positions at fifteen major retailers over the indicated period. The group encompasses fifteen of the first twenty-three on the *Fortune* roster—grocers and

³³ "The Fortune Directory: Part II," *Fortune*, Vol. LXX, No. 2 (August 1964), pp. 151-162.

wholesalers excluded—and it covers almost every important nationwide or regional chain of department stores currently doing business. By way of comparison with the industrial sample, the companies at issue accounted in 1963 for \$15.8 billion of the \$246.4 billion aggregate United States retail sales.³⁴ Information on 192 different executives was gathered, and a resulting total of 1757 man-years of compensation history are involved.³⁵ Thus, in most dimensions, the sample is roughly one-fourth to one-third the size and relative importance of its large manufacturing counterpart. The specific firms included are listed in Appendix B, and the sample size each year by position can be found in Appendix C.

The Small Manufacturing Sample

The third group of enterprises studied consists of a collection of small manufacturers, the objective in their selection being an attempt to determine the degree to which the patterns of compensation and ownership income observed in large industrial corporations hold more generally for the manufacturing sector. Whether by some absolute standard the firms which ended up in the sample can fairly be termed “small” is perhaps a legitimate question, since the smallest among them had sales of \$87 million, and the largest \$139 million, in 1963. It is clear, however, that they operate in a much different market context and at a much more modest scale of activity than do the corresponding fifty large manufacturers. The difficulty with seeking a sample of still smaller companies is simply one of obtaining data. Complete past proxy statement records become considerably harder to put together—as well as significantly less informative in many instances—at the under-\$100 million sales level. This occurs not only because of the later stock exchange listing of the majority of such firms, but also because their business and management history seems often to involve rather more in the way of periodic upheavals than the larger companies display. A corporation with \$100 million

³⁴ Survey of Current Business, *op. cit.*, p. S-4.

³⁵ Out of the 1800—five positions in 15 companies for 24 years—which would constitute a full set.

sales in 1963 may, of course, have been a *very* small enterprise back in 1940, when the data we are interested in begin.³⁶

The initial try at constructing the sample focused on the firms ranked 450th and below on the *Fortune* 1963 list, but of the resulting fifty-one possibilities, only four turned out in their proxy statements to provide enough consistent information on managerial earnings and stockholdings to permit the necessary analysis for their five highest-paid executive positions. The 400-to-449th category subsequently yielded another four, and it was not until the examination was extended to the companies ranked 350-to-399th that a group totaling fifteen, to at least match in size the retail trade sample, could be assembled.³⁷ Since the corporations included therein represent quite a broad range of industries, the decision was to stop at that point and to assume that the 196 executives and the 1,781 man-years of experience which emerged could be regarded as an adequate basis for drawing useful conclusions about the circumstances of the senior officers of smaller firms. Appendix B lists the relevant companies, and Appendix C tabulates, as before, the yearly sample size in each of the five positions.

Summary

An investigation of the ownership income enjoyed by professional managers seems an important undertaking because of its potential implications for both economic theory and economic practice. Not only do a great many of our normative models depend for their validity on the notion that the affairs of corporations are administered with the goal of profit maximization paramount in management's mind, but so do many of our consequent claims about the viability and vigor of the actual economy. The intention here is that the dimensions of the relationship between corporate performance and executive incomes be revealed in order that judgments about the possible effects of the prevailing separation of ownership and manage-

³⁶ Several of the firms eventually chosen, for example, had annual sales in the \$6-\$7 million range in the early 1940's.

³⁷ The largest firm was ranked 353rd in sales in 1963, and the smallest 495th.

ment may be arrived at in a more informed manner. The conceptual framework developed, and the attendant computational techniques, have been designed to cast up evidence that will foster such an understanding. They will be applied historically to three different samples, comprising a total of 80 companies, 940 executives, and approximately 8,750 man-years of income experience.