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THE COMPENSATION PACKAGE

The various elements of the executive's compensation package having been considered separately, it remains then to integrate their analysis. Since the valuation procedures relevant to each reward are largely self-contained, it should not be necessary to devote much additional space to an examination of conceptual matters. This chapter will therefore concentrate on a numerical example, applying the techniques developed earlier to the compensation history of a single executive. The figures presented are entirely fictitious and are designed primarily to illustrate the handling of a wide range of circumstances involving changes in compensation that can and do arise. They are not intended to represent a "typical" executive in the sample analyzed below in any meaningful sense. On the other hand, the experience described is not an unrealistic one, and it may legitimately be used to convey a feeling for at least the orders of magnitude that will be dealt with empirically.

Interdependence Among Rewards

If the federal income tax were proportional rather than progressive, it would be possible to appraise each of the corporate executive's rewards in complete isolation. The size and pattern of his other income would have no effect on the value to him of whatever item of compensation were being considered at the moment. A progressive rate structure, however, creates an interdependence among certain forms of reward which must be taken into account in fitting the pieces of the pay package together.

Stock options, profit-sharing plans, and all other schemes which provide benefits taxable only at capital gains rates present no problem in this connection. The relevant tax *is* a flat percentage—at least for the

executives in the sample here—and such devices may therefore be evaluated without reference to their immediate context.

Pensions and deferred compensation arrangements are less conveniently handled. Since the benefits they confer are viewed as ordinary income by the IRS, the taxes due thereon are in part a function of how much other income is being received by the executive concurrently. The tax liabilities applicable to an executive's pension benefits, for example, were seen above to be influenced by the amount of "outside income" that was anticipated for him in retirement.¹ They will also be affected by the presence of any deferred compensation payments. Under a schedule of increasing marginal tax rates, the larger the executive's income, the higher is his tax bill as a per cent of that income—and the less valuable to him is each dollar represented there. Thus, if aggregate tax liabilities are apportioned among several different sources of income in relation to their respective before-tax magnitudes, a given reward will necessarily have associated with it a smaller after-tax counterpart the greater are the amounts of any other benefits received simultaneously.² Each time an executive is promised a larger pension by his company, therefore, the after-tax value of his prospective deferred compensation falls. In response, the after-tax current income equivalent contrived for the arrangement must also be reduced. Increases in deferred compensation awards have a symmetrical effect on the worth of a constant pension benefit. Accordingly, this sort of adjustment process will be built into the analysis as an appropriate expression of the interrelated nature of the executive's portfolio of rewards. Its impact will become evident in the calculations that follow.

An Illustrative Case History

Let us then turn to an application of the techniques developed in the preceding chapters. For this purpose, the compensation experience of a

¹ See Chapter 2.

² To illustrate: Suppose an individual's annual income is \$20,000 and he pays \$8,000 in taxes each year. Suppose further that he suddenly enjoys an increase to \$30,000 before taxes, due to a new source of income, and that his total tax bill becomes \$15,000 as a result of a progressive tax structure. If 20/30 of this new tax is attributed to the original income stream, its after-tax amount drops from \$12,000 to \$10,000 per annum.

fictitious executive will be offered—one which exemplifies most of the important and interesting combinations of circumstances that are confronted empirically. While it would be possible to illustrate literally all the peculiar situations that can occur, it would not be particularly efficient to attempt to do so. An understanding of the analysis and an adequate appraisal of its validity can be provided with a more modest body of data.

Consider the following case history:

Year	Salary	Noncontributory Pension	Contributory Pension	Deferred Compensation
1945	\$ 75,000	—	—	—
1946	75,000	\$10,000	—	—
1947	75,000	12,000	—	—
1948	90,000	12,000	—	—
1949	90,000	12,000	\$15,000	—
1950	90,000	12,000	15,000	—
1951	90,000	12,000	15,000	\$5,000
1952	90,000	15,000	15,000	5,000
1953	90,000	15,000	15,000	6,000
1954	100,000	15,000	15,000	6,000
1955	100,000	15,000	15,000	6,000
1956	100,000	15,000	15,000	6,000
1957	100,000	15,000	15,000	6,000
1958	100,000	15,000	15,000	6,000
1959	100,000	20,000	15,000	6,000
1960		—retired at age 65—		

The column entitled "Salary" refers in this instance only to before-tax salary but should in general be interpreted to include the before-tax amounts of any cash or stock bonus payments as well. Since, as we have seen, all three rewards take the form of current income and are taxed identically, they may be so combined.

The noncontributory pension figures record the amount of the annual retirement benefit promised the executive by his company as of the indicated years. The contributory pension column does the same for the prospective annual benefit under that arrangement. Thus, in 1951, our man, who is then 56 years old, expects to receive \$15,000 of contributory and \$12,000 of noncontributory pension benefits yearly be-

ginning at age 65. The contributions required of him in return are not tabulated but are, of course, relevant to the analysis. In this connection, it will be assumed that initially the plan calls for an employee to contribute 4 per cent of his gross salary—a figure which is subsequently reduced to 3 per cent as a means of increasing the value of the arrangement (more on this later).

Deferred compensation denotes the annual payment to be made to the executive after his retirement under the terms of a specific deferred-pay contract with him, of the type discussed in Chapter 3. Let us suppose that ten years is the duration of this particular agreement, i.e., he stands to receive the amount indicated each year from age 65 through age 74. Once again, it is irrelevant to the calculations whether such payments are to be in the form of cash in the amounts listed or in shares of the corporation's common stock having the same prospective value. In the latter case it would have been necessary prior to the tabulations to estimate the size of the anticipated payments from the stock's market price and the given number of shares promised in the contract. Whichever way the data were obtained, their magnitude is our only concern here. The tax treatment of both types of payments is identical, and their "current equivalents" are constructed in the same manner.

In addition to the rewards shown, the executive in question will be specified to have been granted two stock options: One in 1952 for 1,000 shares at \$95 per share, having a term of seven years; one in 1954 for another 1,000 shares at an option price of \$110 and with a five-year term. In both cases the option price is assumed to have been at least 95 per cent of the stock's market price on the date of granting, and both options thus are eligible for capital gains tax treatment of any profits realized therefrom. The end-of-year market prices of the company's stock (adjusted for all stock splits or stock dividends that occurred during the relevant interval) were as follows:

1952	\$120
1953	130
1954	110
1955	95
1956	120
1957	150
1958	150
1959	180

Sometime in 1957 the first option was exercised on a day when the stock's market price was \$150 per share. In 1958 the second option was exercised under identical conditions. These two instruments and the salary, pension, and deferred compensation payments depicted therefore comprise the executive's complete compensation package over the period of interest.³

THE YEAR 1945

The man is 50 years old. His remuneration consists only of payments made in the form of current taxable income in the amount of \$75,000. Assuming that he enjoys \$11,250 of income from other sources (15 per cent of \$75,000) and imputing to him nontaxable deductions and exemptions equal to \$8,625 (10 per cent of the total \$86,250 current income), we find that his 1945 tax bill, at the rates then in effect, would have been \$50,625. If 7,500/8,625 of this tax is attributed to his salary, an after-tax figure of \$30,978 is obtained.

THE YEAR 1946

The executive's salary remains at \$75,000, but the company he works for adopts a pension plan for the first time. The plan is noncontributory, and according to its provisions he stands to receive \$10,000 per year for life upon his retirement at age 65. An "outside" income of \$11,250 is projected for him in retirement—the same amount as he currently is estimated to receive—and deductions and exemptions are assumed to continue at 10 per cent. The pension, which is fully taxable except for such deductions, is credited with 1,000/2,125 of the resulting expected after-tax income (computed using 1946 rates). If this annual figure is discounted for its futurity and the man's hypothesized mortality prospects, we find that the after-tax present value of the pension to him as of 1946 is \$48,705. It turns out after some testing that an individual annuity policy of the type suggested in Chapter 2, which provided an annual retirement benefit of \$6,717, would have the same present value.

This figure is substantially less than the original \$10,000 pension

³ The fact that he is shown not to come under a pension plan until he is 50 years old should not, parenthetically, seem unusual. Most of the firms in the sample studied—indeed, most American corporations—did not begin to provide pensions for their employees until the 1940's. Consequently, many executives came under such plans relatively late in their careers.

benefit for two reasons. First, an individual annuity is less heavily taxed than a noncontributory pension because its purchaser is allowed to recoup his premium payments tax-free after retirement by excluding a portion of the benefits he receives from taxable income.⁴ Secondly, there are certain preretirement death benefits associated with the annuity, and these also have a significant present value.⁵ Thus, the 51-year-old owner of a \$6,717-annual-benefit individual retirement annuity was, in 1946, as well off as a 51-year-old executive who was promised a \$10,000 noncontributory pension.

It would have required an annual premium of \$4,868 beginning in 1946 and continuing through 1959 (the last expected year of the man's employment) to purchase such an annuity from an insurance company under the schedule of premium rates then in effect.⁶ The figure \$4,868 therefore constitutes the first element in the after-tax current income equivalent of the executive's pension. It defines the expenditure out of each succeeding year's after-tax income that would be necessary on the part of the executive were he to seek to put himself in the same position his pension puts him—and also, in consequence, specifies the amount of additional after-tax current income from his employer that could be substituted for the pension and just maintain the total value of the compensation package.

Finally, tax rates in 1946 being somewhat lower than in 1945, the after-tax amount of the man's salary becomes \$35,094, using the same rule for apportioning tax liabilities between salary and outside income as before.

THE YEAR 1947

The company's pension plan is liberalized, and, as a result, our executive's promised annual retirement benefit increases to \$12,000. His anticipated postretirement income therefore rises to \$23,250 since, with salary unchanged, the prediction of \$11,250 of outside income still applies. Now 1,200/2,325 of the estimated annual after-tax total is credited to the pension, 1947 tax rates being used in the computations.

⁴ As indicated in Chapter 2 and in Appendix D.

⁵ See again Chapter 2.

⁶ The derivation of this schedule from the premiums quoted by two large insurance companies is described in Appendix K.

After discounting, the extra \$2,000 benefit is observed to add \$8,844 to the after-tax present value of the pension, i.e., \$8,844 is the difference between the present value, *as of 1947*, of the new, higher pension benefit and the present value that would have been in prospect had that benefit still been \$10,000. As might be expected, given a progressive tax structure, an increase of 20 per cent in pretax annual benefits generates an increase of less than 20 per cent in after-tax present value ($8,844/48,705$). The disparity would be even greater were the executive not one year closer now to retirement.

In this instance an additional individual annuity benefit of \$1,141 would raise the total present value of that instrument to the executive by the same amount as his pension increase, taking into consideration the proportionately smaller tax bill for annuities and their attendant death benefit provisions. The purchase of this second annuity contract by our man would, in turn, necessitate annual premiums higher by \$1,048 than those indicated in 1946—again with the expectation that they run through 1959. This means that his aggregate pension current equivalent for 1947 becomes \$5,916. Annual payments in this amount to an insurance company would permit the acquisition of an individual retirement annuity providing benefits now totaling \$7,858. Since tax rates in 1947 were the same as those in 1946, after-tax salary remains \$35,094.

The results of the analysis thus far, then, may be summarized in the following manner:

Year	Before-Tax Salary	After-Tax Salary	Pension After-Tax Current Equivalent
1945	\$75,000	\$30,978	—
1946	75,000	35,094	\$4,868
1947	75,000	35,094	5,916

And we begin to see take shape the sort of profile of the executive's compensation package toward which our efforts are directed.

THE YEAR 1948

The one change that occurs is an increase from \$75,000 to \$90,000 in the man's annual salary. By convention, the estimate of his outside

income is therefore raised to \$13,500 per annum. When the applicable taxes are recomputed at 1948 rates, which were lower than in 1947, a figure of \$52,760 is obtained for his after-tax salary.

This is not quite the whole story, however, because of the impact of a change in *current* income on our prediction of the size of *future* receipts. If the practice of projecting today's "outside income" into retirement is continued, we must also now adjust our assessment of the worth of the executive's pension. We expect him to enjoy a larger total postretirement income than we did last year—\$25,500 vs. \$23,250—and it follows that the after-tax annual benefit his unchanged before-tax pension promise will provide must decline. The calculations show a resulting loss in present value as of 1948 of \$704.⁷

Even as it stands, this loss is not very great (on the order of 1 per cent of the pension's total present value), and its impact on the current equivalent is further diminished by the effect of the additional outside income on the value of the individual annuity offered as an alternative to the pension. Thus, any extra income anticipated in retirement raises the over-all tax bill on the hypothesized annuity benefits as well, since they are expected to occur in the same environment the pension would have. The present value of the individual annuity therefore also falls slightly in response to an increase in current salary. Because it does not fall by as much as that of the pension,⁸ the current equivalent must still be adjusted downward in order to restore balance between the two instruments. Calculations—using 1948 tax rates throughout—indicate that the executive would be as well off as he is now with his pension if he had in prospect an annuity benefit smaller by \$72 per annum than the one suggested last year. Lowering the benefit by that amount calls, by coincidence, for a reduction also of \$72 in the annual premiums payable to the insurance company in 1948 and in each of the next eleven years. The revised pension current income equivalent for 1948 is, accordingly, \$5,844.

⁷ The present value as of 1948 of the after-tax annual benefit a \$12,000 pension would provide if received in concert with \$11,250 of outside income is first determined. A second present value, assuming outside income equal instead to \$13,500, is then computed. The difference between the two turns out to be \$704. At each stage the 1948 income tax schedule is used.

⁸ This will always be true, since a portion of the annuity benefits are tax-free and thus unaffected by any changes in "outside income."

THE YEAR 1949

A contributory pension plan is added to the existing noncontributory one. Under it the executive is promised an extra \$15,000 annually at retirement and is required to contribute 4 per cent of his before-tax salary toward its financing—a total of \$3,600 per annum at present levels. His salary and noncontributory pension rights do not change.

The contributory plan provides benefits in two forms: the \$15,000 lifetime annual payment beginning at age 65; and a return of the interest-accumulated value of the executive's contributions if he should die before retiring or before receiving retirement benefits in total equal to that accumulated value.⁹ The two can be evaluated separately.

The retirement benefit, which is taxable only to the extent that it is deemed by the IRS to be a product of the company's and not the executive's contributions, may be combined with the noncontributory benefit, and a joint incremental after-tax present value as of 1949 calculated. This figure comes out to \$86,944, utilizing \$13,500 once again as the estimate of annual postretirement outside income. The net present value of the man's expected contributions through age 64—which are not tax-deductible—and the prospective death benefits they provide is a *negative* \$27,436.¹⁰ The result is an over-all increase in the present value of the pension equal to \$59,508.

It would take an additional individual retirement annuity of \$7,175 payable to the same executive to match this increase. The extra yearly premiums necessary for its purchase, starting in 1949, are \$8,040, which pushes the after-tax current equivalent of the combined pensions up to \$13,884 per annum. There will be no attempt to separate that figure into amounts attributable to contributory and noncontributory pension benefits, since the procedures involved in doing so are not only tedious but more than a little arbitrary. Apart from this, there seems little real reason to make the distinction. Corporations clearly plan their retire-

⁹ See Chapter 2 above and Appendix D.

¹⁰ This also is a predictable outcome. The probability that a man age 54 will live to make all eleven contributions up to his scheduled retirement age is quite large—on the order of 0.85 according to the 1951 Group Annuity Table. Since the complement of this figure is the probability that those same contributions will be recovered by his estate as a death benefit, the odds are heavily weighted toward the negative present value represented by the obligation to make contributions.

ment plans as a package, and it is reasonable to assume that the executive reacts in similar fashion.

THE YEAR 1950

Let us suppose that the corporation decides to liberalize its new contributory pension plan by reducing the employee contribution rate to 3 per cent of salary, while leaving benefits unchanged. Our man now foresees a series of contributions amounting to \$2,700 yearly instead of the previous \$3,600.

This reduction affects the after-tax present value of his pension not only by making the burden of contributing lighter, but also—in the opposite direction—by increasing slightly the tax bill on the plan's prospective annual retirement benefits. Smaller employee contributions mean that less of each retirement benefit will be considered tax-free as a recovery of those contributions. On balance, certainly, the result will be to raise the present value of the pension. In this case, even though the present value of the retirement benefits declines by \$1,664, the lower contribution rate is worth an extra \$6,247 to the executive.¹¹ Over-all, he gains \$4,583 in 1950 after-tax present value.

An individual retirement annuity benefit larger by \$530 than the current one and costing an additional \$664 per year for the next ten years would be as valuable to him. The pension's current equivalent, therefore, rises to a new total of \$14,548 per year. Since 1950 tax rates were the same as those of 1948 and 1949, the executive's after-tax salary remains at \$52,760.

THE YEAR 1951

The corporation and our executive enter into a deferred compensation agreement whereby he is to receive upon retirement \$5,000 a year for ten years. His pension rights, contributions, and salary continue at their 1950 levels.

The executive's total anticipated annual income during the first ten years of his retirement now becomes \$45,500: \$27,000 in pension, \$13,500 of outside income, and the new \$5,000 deferred compensation promise. Excluded from taxable income are the deductions and exemp-

¹¹ As before, this latter figure also incorporates the effect of lower death benefits all along the line.

Year	Before-Tax Salary	After Tax Salary	Pension After-Tax Current Equivalent	Deferred Compensation After-Tax Current Equivalent
1945	\$75,000	\$30,978	—	—
1946	75,000	35,094	\$ 4,868	—
1947	75,000	35,094	5,916	—
1948	90,000	52,760	5,844	—
1949	90,000	52,760	13,884	—
1950	90,000	52,760	14,548	—
1951	90,000	50,884	14,208	\$2,697

tions it is assumed he will claim¹² and the portion of the contributory pension which is tax-free as a return of his contributions. The after-tax counterpart of each receipt may then be determined and their present values as of 1951 computed. The result is a reduction of \$2,153 in the worth of the pension package due to the higher over-all tax rates brought about by the addition of deferred compensation to the package. The current equivalent of the pension is correspondingly diminished by \$340 per annum—the amount by which the annual premiums payable to an insurance company could be cut so as to bring about a reduction in prospective individual annuity benefits also having a present value of \$2,153. Equilibrium is therefore restored between the pension and its substitute, at least as both are perceived by the executive.

The after-tax present value of the deferred compensation is calculated at \$26,839, which includes the value of the death benefits it provides. Thus, if the executive should die prior to attaining age 65, his estate will receive \$50,000 from the corporation. If he dies thereafter but before reaching age 75, his estate gets the difference between \$50,000 and the payments already made to him. The after-tax current equivalent of this contract is taken to be that series of equal annual payments beginning in 1951 and continuing through 1959 which, if promised the executive by his company, would seem to him to have the same present value. Since those payments are made contingent upon his remaining

¹² Which now are set at 15 per cent of pretax income by convention. This figure applies from 1951 on (see Appendix A).

with the corporation—and living that long—\$2,697 per year for nine years, when discounted for mortality and at 2½ per cent per annum, produces the required present value.

Finally, at 1951 tax rates, which are higher than for 1950, and assuming deductions and exemptions of 15 per cent of gross income, the man's after-tax salary comes to \$50,884. His story may, therefore, be brought up to date as shown in the tabulation on page 93.

1952-54: STOCK OPTIONS EXCLUDED

Apart from the stock options he is granted, it is not necessary to examine in much detail the changes that occur in the executive's remuneration during the next three years. Similar situations have already been considered here, and the purpose in repeating them is simply to illustrate their impact when they occur in the context of an existing deferred compensation promise as well as a pension plan. The two stock options can be analyzed independently, since there is no link between them and other rewards through the tax structure.

In 1952 the executive's annual retirement benefit under his firm's noncontributory pension plan is raised to \$15,000. The result, due to higher postretirement tax liabilities, is a decrease in the value of his deferred compensation as well as a larger aggregate pension current equivalent. Because only the noncontributory portion of the pension is revised, none of the potential death benefits under either the contributory plan or the deferred compensation contract are affected, and their respective present values are unchanged. The over-all gain in the present value of the pension, however, produces a new current equivalent for it \$2,597 higher than last year—enough extra annual premium in this case to permit the purchase of an additional \$1,605 individual retirement annuity by the executive. A current equivalent just \$32 lower per year than in 1951 results for his deferred compensation.

In 1953 the reverse situation occurs. The annual deferred compensation promise goes up by \$1,000 while pension benefits remain constant. Thus, the present value of the latter is reduced through the workings of the progressive tax structure. Calculations indicate that the pension's current equivalent should, in consequence, be \$113 per annum less than in 1952 and that of the deferred compensation \$680 more.

Finally, in 1954 the man's annual salary is increased to \$100,000. This raises our estimate of his postretirement outside income to \$15,000 yearly and thereby lowers the perceived after-tax present value of *both* his pension and deferred compensation. The pension package is further influenced because the larger salary automatically generates higher annual contributions to the plan as long as the specified contribution rate continues at 3 per cent. The total effect is to reduce the annual after-tax current equivalent of the pension by \$462 and the deferred compensation by \$21.

A record of the executive's experience over this three-year period therefore reads:

Year	Before-Tax Salary	After-Tax Salary	Pension Current Equivalent	Deferred Compensation Current Equivalent
1952	\$ 90,000	\$47,553	\$16,805	\$2,665
1953	90,000	47,553	16,692	3,345
1954	100,000	54,765	16,230	3,324

The increase in his after-tax salary in 1954 was proportionately greater than the concurrent before-tax increase (approximately 15 per cent compared with 10 per cent) because tax rates that year returned to their pre-Korean war levels.

1955 THROUGH 1959

The preceding years offer examples of virtually all the circumstances worth noting from a methodological standpoint. For that reason, the executive's salary, pension, and deferred compensation benefits are, with one exception, assumed to stay the same from 1954 up to his retirement. Since tax rates did not change during these years, the after-tax salary and current equivalents established in 1954 are valid through 1958. In the following year, however, when the executive is 64 years old, the annual retirement benefit promised him under his firm's noncontributory pension plan is raised to \$20,000. The motive in hypothesizing this increment is to indicate the very large impact it has on the present value

of the pension and thereby on that instrument's current income equivalent.

If an executive happens to be working for a company which revises its pension benefit schedule significantly upward at a time when he is nearing retirement, that revision is an important "windfall" to him. It would require a sizeable premium payment to an insurance company were he to undertake the purchase of as valuable an individual annuity. The present value of the increased pension benefits is high because the man is almost ready to claim them, and the annual cost of the equivalent annuity is considerable because that cost cannot be spread over a very long period of time. Using such an annuity as a standard of comparison and its purchase price as an index of the worth of the pension is still legitimate, however. The volatility of the current equivalent as an executive approaches retirement age is merely an honest reflection of his situation rather than an indictment of the valuation procedures employed.

To return to the case at hand, the \$5,000 annual pension benefit increase has an after-tax present value to the executive as of 1959 equal to \$33,594. A single-premium payment to an insurance company of \$46,558 would suffice to add benefits having the same present value to his existing annuity.¹³ The current equivalent of the pension for 1959 is thus defined to be higher by this amount than in 1958. As a side effect, the present value of the man's deferred compensation falls due to the higher tax bill which now applies to it. The result is to lower its current equivalent for the final year by \$695.

If we exclude his stock options for the moment, then, a complete analysis of our executive's compensation history would take the following form:

¹³ The fact that the present value of the annuity purchased is less than its cost to the executive should not seem surprising. The difference is accounted for by the insurance company's charges for its administrative expenses and sales commissions. This phenomenon is widely recognized as a common one in connection with insurance policies and related instruments and has been rationalized elsewhere in terms of the expected *utility* value of such arrangements. See, for example: Milton Friedman and Leonard J. Savage, "The Utility Analysis of Choices Involving Risk," *Journal of Political Economy*, August 1948, pp. 279-304. In the case of an annuity, the policyholder is, in effect, insuring himself against the "disutility" associated with the adverse economic consequences of living too long—and is willing to pay a price for that protection.

Year	Before-Tax Salary	After-Tax Salary	Pension After-Tax Current Equivalent	Deferred Compensation Current Equivalent	After-Tax Total Compensation
1945	\$ 75,000	\$30,978	—	—	\$ 30,978
1946	75,000	35,094	\$ 4,868	—	39,962
1947	75,000	35,094	5,916	—	41,010
1948	90,000	52,760	5,844	—	58,604
1949	90,000	52,760	13,884	—	66,644
1950	90,000	52,760	14,548	—	67,308
1951	90,000	50,884	14,208	\$2,697	67,789
1952	90,000	47,553	16,805	2,665	67,023
1953	90,000	47,553	16,692	3,345	67,590
1954	100,000	54,765	16,230	3,324	74,319
1955	100,000	54,765	16,230	3,324	74,319
1956	100,000	54,765	16,230	3,324	74,319
1957	100,000	54,765	16,230	3,324	74,319
1958	100,000	54,765	16,230	3,324	74,319
1959	100,000	54,765	62,788	2,629	120,182

Such figures permit a variety of conclusions. During the fifteen-year period examined, the man's before-tax salary increased by one-third and its after-tax counterpart by 77 per cent. When the value of his pension rights and deferred compensation are recognized, however, we see that his total after-tax remuneration grew by approximately 290 per cent over the same interval—140 per cent even if the sharp jump in 1959 is ignored. In all, pension and deferred compensation were worth fully 36 per cent as much as after-tax salary. While these statements are not only unstructured but obviously peculiar to this executive's contrived case history, they do suggest the kind of information that can be obtained from actual compensation data and which can be drawn on to provide a more comprehensive picture of the corporate pay package than has heretofore been available.

THE STOCK OPTION EXPERIENCE

During 1952 the executive was granted an option to purchase 1,000 shares of his company's stock for \$95 per share at any time within the next seven years. If it is assumed that the market price of the stock

was no more than \$100 on the date of granting, any profits accruing from the subsequent resale of the shares acquired were to be taxed at capital gains rates according to the law then in effect.

On December 31, 1952, we observe that the option has not yet been exercised but that the stock has risen in price to \$120. By the procedure described in Chapter 4, our first estimate of the prospective before-tax value of the option is \$25,000, the current \$25 price spread on 1,000 shares. Its after-tax value would be set at 75 per cent of that figure but for three factors: the additional deductions and exemptions likely to result from the realization of any profits, the deferral of the associated capital gains tax, and the possibility that the optionee may avoid the tax altogether by passing the stock on in his estate. The upshot of an attempt to take these into account was an arbitrary assumption of 15 per cent for the effective tax rate on stock option gains rather than the statutory 25 per cent. Thus, the option's after-tax worth as of the end of 1952 is specified to be \$21,250.

When discounted for futurity (at 5 per cent per annum) and for mortality, a series of seven annual after-tax payments of \$3,650 each—beginning in 1953 and continuing through 1959—would have a present value equal to \$21,250. If the executive were promised those payments, he would, in the view here, be as well off as he is at the moment with his stock option. They, therefore, are the first elements in the after-tax current income equivalent of that option.

Looking at 1953, we find the stock price standing at \$130 on December 31 and the option still unexercised. Its prospective value before taxes has thus increased during the year by \$10,000—a price rise of \$10 on 1,000 shares—and after taxes by \$8,500. In response, a second stream of equal annual payments running now from 1954 through 1959 and having a present value of \$8,500 is established. These payments come to \$1,655 per annum and form the next "layer" of the current equivalent, which now appears as follows:

Year	Stock Option No. 1 Current Equivalent
1953	\$3,650
1954	5,305

In effect, then, the developments under the option are assessed at the close of every year and the current equivalent for the coming years is adjusted to reflect whatever change has taken place.

By December, 1954, the market price of the company's stock has fallen to \$110. This decline reduces the option's after-tax value by a total of \$17,000 and its current equivalent by \$3,862 yearly. In the meantime, a second option having a five-year term has been issued at an exercise price of \$110. Since this is also the observed year-end closing price of the stock, the current equivalent of the second option is thus far equal to zero.

During 1955 a further stock price decline occurs, and by the end of the year, the market quotation is only \$95 per share. Both options are therefore worthless under present conditions. In the case of the second, this merely implies that its current equivalent remains at zero. However, our methodology indicates that the current equivalent of the first option should now be diminished by \$3,512 per annum as a consequence of the \$12,750 loss in after-tax value over the year. Since a reduction of that magnitude would make the current equivalent negative—and since such “assessments” have been ruled out¹⁴—it, too, is set equal to zero.¹⁵

“Normalcy” is restored in 1956 as the stock price rebounds to \$120 at year's end. As a result, the first option gains \$21,250 in potential value, after taxes. Three after-tax receipts of \$7,569 each in 1957, 1958, and 1959 would leave the executive as well off as this increment; they are, therefore, the next segment of the option's current equivalent. They must, however, be superimposed on what would have been a negative stream of payments but for the constraint specified above. The effect is to bring the current equivalent for 1957 through 1959 up only to \$5,500 per annum—the algebraic sum of a \$7,569 increase and the negative \$2,069 that was the theoretically correct value from 1956. Even though the latter assessment was not executed, it must be used as the basis for subsequent computations if we are to continue to deal each year with the *change* from the preceding situation. Thus the only departure from a

¹⁴ See Chapter 4 above.

¹⁵ If the second option did have a positive current equivalent at this point, the negative figure for the first would instead be subtracted from it and a net value obtained for the two combined. In either case, zero is specified to be the effective lower limit of the resulting combination.

strict adherence to the rules of the game turns out to be in the 1956 figure, and that departure is made up for in succeeding years.

The second option has also acquired a positive value, since the market price of the stock now exceeds the option price by \$10 per share. The prescribed after-tax current equivalent comes to \$3,027 yearly, and the analysis to date therefore reads:

Year	Stock Option No. 1 Current Equivalent	Stock Option No. 2 Current Equivalent
1953	\$3,650	—
1954	5,305	—
1955	1,443	\$ 0
1956	0	0
1957	5,500	3,027

During 1957 the first option is exercised by the executive at a time when the price of his firm's stock on the market is \$150 per share. The actual profit from the option is therefore \$55,000 before taxes and \$46,750 after taxes. From the latter figure is subtracted the interest-accumulated value of the payments thus far credited to the executive, leaving a net remuneration of \$30,550 still to be accounted for.¹⁶ Accordingly, payments of \$15,800 each in 1958 and 1959 complete the current equivalent.

The second option remains unexercised despite the upturn in market conditions and, by the end of 1957, has experienced a further \$25,500 increase in prospective after-tax value. The required addition to its current income equivalent is \$13,190 annually for the next two years, making the total annual figure \$16,217.

Finally, in 1958 this option is also exercised on a day when the relevant market price is \$150. A \$34,000 after-tax reward is thus obtained by the executive. The result is a \$15,330 payment in 1959 which makes up the difference between this figure and the cumulative value of the amounts imputed to him in past years—and, therefore, completes the current equivalent.

¹⁶ Both the prior payments and the after-tax option gain are, as was indicated in Chapter 4, cumulated at 5 per cent per annum to the end of 1957 for purposes of this comparison.

Putting the several pieces of the story together, then, we may record the man's stock option experience as follows:

Year	Stock Option No. 1 Current Equivalent	Stock Option No. 2 Current Equivalent
1953	\$ 3,650	—
1954	5,305	—
1955	1,443	\$ 0
1956	0	0
1957	5,500	3,027
1958	15,800	16,217
1959	15,800	15,330

Had he enjoyed this sequence of after-tax income receipts, he would, in the view here, have been as well off at each point in time as he was in fact as the beneficiary of the two stock option grants described.

The Before-Tax Viewpoint

After-tax current equivalents of the sort developed above provide the basis for our analysis of the compensation package. Another approach to the same objective is to determine the size of the before-tax salary increases that would have been necessary had the corporation in question actually sought to supply the executive with the calculated after-tax increments.

One issue in this connection has to do with the role of what has been termed here "outside income." If we think of raising by a certain amount an executive's current after-tax remuneration, we must decide whether the increase is to be considered marginal to salary alone or to salary and outside income both. Since the personal tax structure is progressive, it makes a difference which view is adopted, i.e., the higher the income base we start with, the larger will be the additional before-tax payment required for a given after-tax increment. It has been argued throughout that the typical executive almost certainly does receive income from sources other than his employment. The various after-tax figures calculated above all reflect an estimate of the size of those earnings. For that reason, it seems inappropriate to ignore such receipts

in the present context. The income base used in arriving at before-tax current equivalents should therefore include outside income.

A similar question concerns the manner in which the before-tax counterparts of multiple after-tax current equivalents are to be established. If, say, pensions are viewed as first in line, the progressiveness of the personal income tax will cause their before-tax current equivalents to be relatively less per dollar of after-tax value than those of other rewards. Indeed, the particular sequence in which the calculations are made for the several items in the package will completely determine the answers obtained. A way out of this problem which does not prejudice the results, however, is to first compute the before-tax increment which, when added to existing salary and outside income, would be sufficient to raise the executive's after-tax income by the sum of *all* his after-tax current equivalents. This total before-tax figure can then simply be divided up according to the proportion each reward's after-tax equivalent represents of the after-tax total. Any need to specify a particular order for the various rewards is thereby eliminated; it is assumed that they all contribute equally to the results obtained. Application of this procedure to our fictitious executive's case history should serve to illustrate its impact.

BEFORE-TAX ANALYSIS

Since, in 1945, the executive had no remuneration other than salary, we may skip that year. In 1946 his before-tax salary was \$75,000 and his outside income \$11,250. Of this amount only 90 per cent (\$77,625) is considered taxable, and therefore is the actual before-tax income subject to statutory tax rates that our computations should be based on. The portion of the man's income which is taken to be tax-free as deductions and exemptions is excluded from consideration because it does not affect the tax bill on any additions to income that may be proposed.

The after-tax income attributable to *taxable* before-tax income is \$31,734: the indicated figure of \$77,625 less \$45,891 in taxes at 1946 rates. Adding to this the \$4,868 pension after-tax current equivalent, we obtain a total of \$36,602 as the desired after-tax combined income level. It turns out that the man would require in this particular year an

aggregate (taxable) before-tax income of \$103,688 in order to generate that total. The \$26,063 difference between this figure and the original \$77,625 is thus the before-tax current income equivalent of his pension for 1946. A salary increase of this magnitude would provide him with just enough extra income—after paying the additional taxes due—to permit him to purchase from an insurance company an individual annuity policy as valuable as his pension.

This procedure is repeated in succeeding years, using in each case the tax rates applicable to the year in question. Through 1950 the result is:

Year	Before-Tax Salary	Before-Tax Pension Current Equivalent	Total Required Before-Tax Income from the Corporation
1945	\$75,000	—	\$ 75,000
1946	75,000	\$26,063	101,063
1947	75,000	32,825	107,825
1948	90,000	16,664	106,664
1949	90,000	41,426	131,426
1950	90,000	42,681	132,681

In 1951 we confront for the first time two after-tax current equivalents, one for the pension and one for a deferred compensation contract. Before-tax salary is \$90,000 and imputed outside income \$13,500. Now that our estimate of deductions and exemptions stands at 15 per cent of gross income, only \$87,975 of the total is taxable. After subtracting from this figure its 1951 tax bill, we end up with \$42,993 as the man's relevant basic after-tax income. Given two current equivalents which sum to \$16,905 (see page 97 above), the required after-tax total becomes \$59,898. A taxable gross income of \$162,107 would provide this amount, implying that an increase of \$74,132 in the executive's before-tax salary for 1951 is called for. Since 83.5 per cent (14,208/16,905) of the combined *after-tax* current equivalent results from the pension, the same proportionate share of the calculated *before-tax* increment will also be attributed to it. We therefore end up with a \$62,305

before-tax current equivalent for the pension and one of \$11,827 for the deferred compensation.

The remaining years are operated on in the same manner, stock option current equivalents being included where appropriate. The complete analysis takes the following form:

Year	Before-Tax Salary	Before-Tax Pension Current Equivalent	Before-Tax Deferred Compensation Current Equivalent	Before-Tax Stock Option Current Equivalent	Before-Tax Total Required
1945	\$ 75,000	—	—	—	\$ 75,000
1946	75,000	\$ 26,063	—	—	101,063
1947	75,000	32,825	—	—	107,825
1948	90,000	16,664	—	—	106,664
1949	90,000	41,426	—	—	131,426
1950	90,000	42,681	—	—	132,681
1951	90,000	62,305	\$11,827	—	164,132
1952	90,000	89,951	14,264	—	194,215
1953	90,000	102,056	20,451	\$ 22,316	234,823
1954	100,000	97,792	20,028	31,964	249,784
1955	100,000	88,641	18,154	7,881	214,676
1956	100,000	84,383	17,282	0	201,665
1957	100,000	103,501	21,197	54,378	279,076
1958	100,000	133,380	27,317	263,119	523,816
1959	100,000	599,602	25,105	287,730	1,012,437

These figures permit us to assess the executive's compensation history in a way that points up perhaps even more clearly the value of the supplements to his salary. Had our executive not been the beneficiary of a pension plan, a deferred compensation arrangement, and two stock option grants over this fifteen-year period, it would have taken more than 2½ times as much salary as he actually received to provide him with the same level of reward. His pension, in particular, was extremely valuable when looked at in this manner, especially if the 1959 benefit change is included:¹⁷ A salary increase equal to 111 per cent of actual

¹⁷ As it should be, even though its consequences in terms of a "current equivalent" seem severe. It may be emphasized again that situations of this kind, when they occur, are a result of the compensation experience observed—not our model's idiosyncrasies.

before-tax salary from 1945 on would have been necessary had the corporation taken that route instead.¹⁸

Obviously, these comparisons are sharper than their after-tax counterparts because of the progressive nature of the personal income tax. The amount of any before-tax salary increase must inevitably be larger in relation to existing before-tax income than is the after-tax increment it generates in relation to existing after-tax income. To acknowledge this, however, is not to imply that a before-tax analysis is any less valid or less meaningful—it is merely different. One could, in fact, argue that it bears even more directly on the matter of the tax-ameliorating properties of deferred and contingent compensation arrangements. Were it not possible for a company to postpone and reduce its executives' tax liabilities by providing pension, stock option, and deferred-pay plans of various kinds rather than having to rely exclusively on salary payments, either the levels of remuneration indicated by the after-tax current equivalents computed would be much lower or salaries would be much higher, or both. The extent to which the use of these devices has allowed the heavy tax bite on current income to be side-stepped is brought into clearer focus by the before-tax comparisons. In this sense the notion of a before-tax current equivalent is both interesting and analytically useful.

Some Comments

The career of the executive whose experiences were examined ended with the event which is by far the most common one in practice: retirement at age 65. Had it been otherwise—through death, resignation, or early retirement—the appropriate response here would have been simply to stop the calculations at that point. Because the relevant contingencies are already incorporated in the procedures employed, none of these occurrences require, as has been discussed elsewhere, any adjustment of the figures generated.

¹⁸ It can be seen from the tabulated values that there does exist now a "feedback" between stock options and other rewards. From 1954 to 1958 the before-tax current equivalents of the man's pension and deferred compensation would, like their after-tax predecessors, have been constant were it not for the influence of the stock options' changing after-tax value on the size of the required total before-tax equivalent.

A final comment concerning environmental assumptions is also in order. While the approach taken here requires individual case histories as the basis from which to draw conclusions, it is clearly not possible to "personalize" the computations as much as might be preferred. Common discount rates, outside income imputations, and deduction and exemption percentages are mandatory. Whether standardization of this sort affects the results very greatly is difficult to determine. Certainly, if the parameters chosen are in some sense characteristic of executives as a class, the numbers they produce will not be far wrong and, in fact, may be better suited to the purpose of generalizing about compensation than very individualized ones. It could legitimately be contended that the proper subject for concern in this area ought instead to be the degree to which those numbers are, in the aggregate, sensitive to changes in the values of the several parameters required. For instance, the effect on the current equivalents of setting the outside income estimate at 25 per cent of salary and bonus or of raising the discount rate on stock options to 10 per cent might be examined. In Chapter 12, therefore, the experience of a "typical" executive, as he is described by the sample now to be developed, will be recast with different assumptions about his behavior and market opportunities in an attempt to determine how crucial those assumptions really are.

Summary

The application of the methodology outlined in previous chapters to the compensation history of a single executive has been considered in detail. Both before- and after-tax descriptions of the size and structure of the compensation package were generated and discussed, employing in each case the concept of a "current income equivalent" appropriately defined. The problems encountered in evaluating several rewards simultaneously and in combining their current equivalents were explored and, presumably, solved. We therefore stand ready to operate on the sample data and to arrive at some conclusions about executive compensation in practice.