9

HISTORICAL COMPARISONS

A fuller appreciation of the data described in Chapter 8 can be obtained by comparing those time series with the changes that have taken place during the same interval in the surrounding economy. Three standards of comparison in particular appear relevant: increases in the earnings of certain other occupational groups; changes in the prices of the goods and services which executives as consumers confront; and the growth of the corporations which employ the executives.

The Employer Companies

While it may, in general, seem reasonable to believe that the remuneration associated with a given position in a firm should be expected to increase as the firm grows in size and profitability, the rationale for postulating such a relationship depends on some very specific assumptions about the nature of the organization in question. A corporation should be willing to increase the compensation of one of its employees only if his value to the firm—his "marginal revenue product"—rises over time.[1] Were it possible to measure the actual contributions to output of the executives who comprise the sample studied here, a comparison of the resulting rates of growth with the secular increases in earnings outlined above would tell us very quickly whether those earnings have kept pace since the early 1940's. Because the desired figures cannot be obtained directly, however, it is necessary to attempt to estimate the pattern of changes in them from some more visible index of the rate

[1] That is, if the addition of one extra unit of labor input to the firm's production process results in an increase in output, in physical terms, equal to Δx units, which can then be sold at a price (P_x) per unit, the owners of the firm can afford to pay up to the amount $P_x \Delta x$ (its marginal revenue product) for that input.

of growth of the corporations examined: the growth in their sales, assets, or profits, for example. This, of course, is an appropriate alternative only if a case can be made for the proposition that an expansion in the scale of a firm's activities implies a roughly proportionate increase in the productive contributions of each of its senior officers. On that basis, a historical comparison of top executive pay and employer-company size would be meaningful.[2]

As it happens, two considerations offer at least some support for the validity of such an assumption. One is the nature of the services rendered by the individuals whose compensation is at issue. Since it is possible as a firm grows larger for it to add correspondingly to its labor force, it would obviously be improper to contend that the scope—and the impact on profits—of the tasks performed by most of its employees will also increase in proportion. The firm can simply hire more workers for many of its various job categories, and a particular individual's responsibilities may undergo very little change. Top executive functions, on the other hand, are rather less easily shared. A corporation can have only one chief executive, one chief financial officer, one general counsel, regardless of its size. Their distinctive policy-making and over-all administrative responsibilities cannot really be delegated, even though certain details of their day-to-day activities may be.[3] As a company expands, therefore, it is not unlikely that the marginal revenue products of individuals at the level with which the empirical analysis here is concerned may increase at approximately the same rate.

A second factor is the role that inflation has played in generating the historical patterns we observe. To the extent that firms appear to grow larger over time merely because the price level in the community rises, the current-dollar value of the productive contributions of their employees should grow in proportion. If, for example, nothing about a corporation's selling or production activities changes during a particular interval except that the product and factor prices associated therewith increase by a given percentage, the marginal revenue products attrib-

[2] Only in terms of *rates* of growth, however. It is clearly not possible to compare absolute magnitudes.

[3] Indeed, the inability to delegate the key top executive functions is one of the explanations frequently given by economists for asserting that the long-run cost curves of a firm should be expected to rise eventually as it increases in size.

utable to each input employed will increase by that same percentage when measured—as they are here in current dollars. Insofar as a broad rise in prices has been an element in the apparent expansion of the firms in the sample, then, it is appropriate to use the indicated company rates of growth as estimates of the rates of growth in the value of their top executives' services.

Neither of these arguments, of course, is conclusive, and the link between the historical trends which is hypothesized cannot be more than speculation at this point for lack of an adequate empirical test. In fact, the further issue as to *which* measure of the secular increase in employer-company size is the most suitable proxy for marginal revenue product growth rates remains open, i.e., should a senior officer's value to his firm be expected to grow in proportion to its assets, its sales, its profits, or yet another characteristic of its circumstances? Fortunately, it is not necessary in the present context to attempt to settle the issue. The compensation of the executives in the sample studied has grown substantially less rapidly during the last quarter century than *any* of the observable attributes of the companies they worked for. Whatever our choice of criteria, therefore, the answer we get is unambiguous.

Table 8 lists, for each year from 1940 through 1963, the aggregate figures for the fifty employer companies in six categories of data: total assets, net worth, sales, profits before taxes, profits after taxes, and the total market value of their common stock.[4] When the implied compound annual rates of growth in each of these items are compared with the rates of growth suggested by the compensation time series derived in Chapter 8, the outcome is as shown in the tabulation on page 160. A significant "lag" in remuneration is clearly evident, even when the value of the major supplements to salary and bonus is taken into account.

To the extent, then, that executive marginal revenue product growth rates are similar to those of the various corporate characteristics tabulated, our conclusion must be that compensation has been falling behind since the early 1940's. The explanation may lie simply in higher

[4] The figures were obtained from *Moody's Industrials* and incorporate the results of all mergers and acquisitions during the period.

Total market value was defined for the individual firm as the mean of the high and low prices observed in each year for its stock multiplied by the mean number of shares it had outstanding in that year.

	Annual Growth Rate 1940–1963 (per cent)
Company parameters:	
Assets	7.0
Net worth	6.8
Sales	9.1
Profits before taxes	9.1
Profits after taxes	8.1
Equity market value	10.2
Top executive rewards:	
Before-tax salary and bonus	1.8
After-tax salary and bonus	0.5
Total after-tax compensation	3.2 [a]
Top five executives' rewards:	
Before-tax salary and bonus	2.5
After-tax salary and bonus	1.3
Total after-tax compensation	3.3 [a]

[a] Computed using average compensation for the years 1955 through 1963 as the 1963 figure. See Chapter 8 for the rationale.

personal tax rates, which have not been entirely undone by the use of deferred and contingent rewards,[5] or it may in part be traceable to imperfections in the market for managerial services. Certainly it would not be difficult to identify some possible sources of imperfection. The compensation bargains struck between a large corporation and its top executives may well be subject to so many external pressures (like those generated by the necessity to report the dimensions of the bargain in proxy statements, for instance), may be influenced so much by internal organizational considerations, and may suffer so heavily from a lack of accurate information as to the actual value of the services being purchased that what we might like to think of as the more objective underlying market forces suggested by the theory of the firm in its

[5] It is worth noting that if, despite tax increases, the aggregate after-tax remuneration of top executives *had* grown as rapidly as our best estimate of their marginal revenue products, we might conclude that corporations had been able to "shift" the burden of those taxes to others in the community—either by passing on the cost of higher compensation outlays directly through product price increases or lower profits or by adopting forms of reward which are available only to executives and which enjoy favorable tax treatment, thereby indirectly redistributing the community's total tax bill.

TABLE 8

Characteristics of the Sample Corporations, 1940–63
(million dollars)

Year	Assets	Net Worth	Sales	Before-Tax Profits	After-Tax Profits	Market Value of Equity
1940	16,261	13,283	12,567	1,607	1,085	12,030
1941	18,215	13,786	17,313	2,738	1,251	11,391
1942	19,650	14,315	21,411	2,672	1,020	10,251
1943	20,841	14,830	27,891	3,148	1,063	12,850
1944	21,235	15,057	30,220	3,013	1,143	13,978
1945	20,007	15,522	26,371	2,063	1,159	16,343
1946	20,966	16,692	20,894	1,666	1,267	17,881
1947	24,444	18,935	29,848	3,280	2,031	16,978
1948	27,900	21,598	35,589	4,489	2,780	16,913
1949	28,156	22,891	35,610	4,436	2,794	19,215
1950	31,200	24,393	41,786	6,817	3,557	23,634
1951	35,655	26,897	48,884	7,596	3,088	31,025
1952	38,688	30,061	51,810	6,584	3,013	31,002
1953	41,596	32,065	59,850	7,656	3,417	32,618
1954	43,480	34,768	57,551	7,161	3,888	43,765
1955	48,171	38,609	65,850	9,519	5,009	63,203
1956	53,060	42,629	69,218	8,778	4,816	71,940
1957	57,443	46,298	74,667	9,150	5,091	70,917
1958	60,184	49,650	70,373	7,549	4,344	77,889
1959	63,601	51,420	76,442	8,879	4,909	97,839
1960	66,644	54,212	79,733	9,196	5,058	94,148
1961	71,022	57,694	79,717	9,047	5,116	108,689
1962	74,001	60,003	87,896	10,579	5,908	98,810
1963	77,758	62,545	93,759	11,923	6,552	112,951

traditional form are seldom reflected in the figures we observe. In fact, the situation in question may be close enough to that of bilateral monopoly that we should not expect even in theory a result approaching the purely competitive solution to emerge.[6]

An equally plausible interpretation of the data, however, would be

[6] Especially since the individuals involved are often on *both* sides of the bargaining table.

that employer-company and executive marginal-product rates of growth are quite unconnected and that the comparison with compensation presented is merely a curiosity devoid of analytical content. Given this possibility, it does not appear very fruitful to speculate further here on the probable causes of what may be a completely irrelevant phenomenon. Nonetheless, because there is at least some chance that a valid relationship does exist, and because the lag in earnings growth that this would imply is so pronounced, the comparison seems worth calling attention to.[7]

Professional Incomes

Increases in the earnings of other important occupational groups over the last quarter century provide a second set of standards by which to appraise the observed rates of growth in compensation. Have executives done as well in their chosen field as they might have had they decided instead to channel their energies in other directions? The most logical approach to that question would seem to be by posing as the relevant vocational alternatives lines of endeavor which require a generally similar level of education and professional skill and which might reasonably have been thought of as attractive possibilities by individuals who in fact became executives. By that test, secular changes in the earnings of physicians, lawyers, and dentists appear to be appropriate criteria.

It should be emphasized, however, that if executive incomes turn out to have grown less rapidly than those in the indicated occupations—as we shall see *is*, in fact, the case—our interpretation of such a development must be carefully phrased. The argument which is usually presented by persons concerned with the possibility that managerial rewards are not all they might be runs as follows:[8] The proper administration of the resources which executives in their capacity as stewards of shareholder interests control depends on a continuing supply of talented and energetic individuals to the ranks of management. If the

[7] It should also be pointed out that the indicated lag, if real, might be eminently desirable in terms of resource allocation. It is possible that executives were earning *too much* in 1940, and we may simply have witnessed the restoration of more sensible levels of remuneration in recent years.

[8] U.S. Joint Committee on the Economic Report, *Federal Tax Policy for Economic Growth*, pp. 137–164.

rewards such individuals can expect are no longer sufficient to induce them to become executives, the performance of our economy will eventually suffer.

Arguments of this sort are valid, of course, only if it is also established that one or the other of the markets which determine the compensation received in different occupations is functioning improperly and therefore causing any redirection of talent to be a misallocation. There would be nothing wrong, for example, with more bright young men deciding to become doctors instead of businessmen because of a change in relative earnings possibilities, if that change were the result of a market mechanism which efficiently matched compensation with productive contribution in each activity. Indeed, if the market's decisions are to be respected, there *should* be an increasing supply of doctors under those circumstances, and the economy would not suffer in any meaningful sense.

While the discussion in the preceding section raised the possibility that the compensation of top executives may not have increased as rapidly since 1940 as their marginal revenue products—and that there is likely to be considerable friction in the market for managerial services—the same may be true of other professions. There is also reason to suspect that, even if all the relevant markets were operating smoothly, the results generated would not necessarily fully reflect the value of the several occupations being compared. The benefits to society of having an adequate number of doctors, lawyers, and dentists may not be accurately measured solely by the incomes those individuals stand to receive from the pursuit of their professions. A similar argument could be made for executives who, by their decisions, create employment for others and promote economic growth. Left to its own devices, therefore, the private market's perceptions of value might not be a reliable guide to the appropriateness of earnings in various occupations, and the community as a whole might logically decide to subsidize one or the other as a matter of policy in order to bring about a result in which its *collective* preferences were given expression. Judgments about the possible undesirability of historical trends in income must therefore confront this issue as well as that of market imperfections.

The only conclusion, then, that can legitimately be drawn here from such trends is that if, for whatever reason, the compensation of top ex-

ecutives has grown less rapidly over the years than have earnings in other leading professions, the relative attractiveness of those professions will have increased and there should be a movement toward them and away from management by men who are now starting their careers. While there are obviously a wide range of nonpecuniary considerations on which job choices are based, this movement should occur if those considerations have remained fairly stable over time and if income opportunities are taken into account at all in career decisions. The latter assumption at least seems a reasonable one.

Despite its limitations, the information which is available about the incomes of physicians, lawyers, and dentists strongly suggests that all three groups have indeed experienced a more substantial increase in pay since the early 1940's than have senior corporate executives. Physicians and dentists, in particular, have done very well by comparison. The data are summarized in Table 9.

The first, fifth, and eight columns present the results of a series of surveys of the incomes of selected professional occupations conducted by the Department of Commerce and reported on in its *Survey of Current Business*.[9] The figures denote the mean income of nonsalaried lawyers, physicians, and dentists (net of all business expenses but prior to personal income tax payments) as determined from a sample selected by the National Income Division of the Office of Business Economics. Because the last such survey was conducted in 1956, the data in the case of lawyers end in 1954 and for physicians and dentists in 1951.

The figures in the second, sixth, and ninth columns of Table 9 were obtained from reports of the Bureau of the Census.[10] They represent the median income in 1949 and 1959, respectively, of those individuals in the "experienced civilian labor force" who were classified as (1) physicians and surgeons, (2) lawyers and judges, and (3) dentists. Corresponding figures for prior years are not available, since the 1940

[9] In August 1949, pp. 18–24; January 1950, pp. 8–16; July 1950, p. 4; July 1951, pp. 9–26; July 1952, pp. 5–7; and December 1956, pp. 26–35.

[10] U.S. Bureau of the Census, *U.S. Census of Population: 1950, Volume IV, Special Reports*, Part I, Chapter B, "Occupational Characteristics," Table 19, Washington, 1956, and *U.S. Census of Population: 1960, Subject Reports*, "Occupational Characteristics," Final Report PC(2)-7A, Table 25, Washington, 1963.

TABLE 9

Average Incomes of Physicians, Lawyers, and Dentists, 1940–62
(dollars)

	Physicians				Lawyers			Dentists		
Year	SCB	Census	Med. Econ.	IRS	SCB	Census	IRS	SCB	Census	IRS
1940	4,441	–	–	–	4,507	–	–	3,314	–	–
1941	5,047	–	–	–	4,794	–	–	3,782	–	–
1942	6,735	–	–	–	5,527	–	–	4,625	–	–
1943	8,370	–	9,186	–	5,945	–	–	5,715	–	–
1944	9,802	–	–	–	6,504	–	–	6,649	–	–
1945	10,975	–	–	–	6,861	–	–	6,922	–	–
1946	10,202	–	–	–	6,951	–	–	6,381	–	–
1947	10,726	–	11,300	–	7,437	–	–	6,610	–	–
1948	11,327	–	–	–	8,003	–	–	7,039	–	–
1949	11,744	8,302	–	–	7,971	6,284	–	7,146	6,448	–
1950	12,324	–	–	–	8,349	–	–	7,436	–	–
1951	13,432	–	15,262	–	8,855	–	–	7,820	–	–
1952	–	–	–	–	9,021	–	–	–	–	–
1953	–	–	–	–	9,392	–	–	–	–	–
1954	–	–	–	–	10,258	–	–	–	–	–
1955	–	–	18,122	–	–	–	–	–	–	–
1959	–	15,013	23,888	19,099	–	11,261	11,246	–	12,392	11,385
1960	–	–	–	19,522	–	–	11,373	–	–	11,873
1961	–	–	–	20,222	–	–	12,513	–	–	12,594
1962	–	–	–	21,354	–	–	12,689	–	–	13,710

NOTE: SCB denotes *Survey of Current Business* data; Med. Econ. denotes *Medical Economics* data; IRS denotes Internal Revenue Service data. All figures are mean values except the Census data, which are medians.

and earlier Census data do not provide the same sort of breakdown of income by occupations.

The third column tabulates the findings of a continuing survey by the journal *Medical Economics* as reported in the *Industrial and Labor Relations Review*.[11] The figures once again refer to the mean income of a sample of nonsalaried physicians, but only individuals under sixty-five years of age are included therein.

Finally, the fourth, seventh, and tenth columns are derived from data which have recently begun to be published by the Internal Revenue Service in its *Statistics of Income* series. A breakdown of proprietorship and partnership income receipts by occupational categories, among them physicians and surgeons, dentists, and lawyers, is now available.[12] From these figures it is possible to compute the average earnings of all individuals engaged in private practice in the three professions in each year.[13] This, on a much larger scale, is the same sort of "nonsalaried" group to which the *Survey of Current Business* samples apply. Because the IRS figures allow proprietorships and partnerships reporting net profits to be separated from those having net losses, the former are singled out here as best suited to comparisons with executives, and the averages presented refer only to such individuals.

The difficulty with all these data is, of course, the fact that no one set of figures covers the full range of years in which we are interested. A variety of other sources periodically provides similar information, but each draws on its own particular sample and each presents the same problem. It is necessary, therefore, to superimpose several of the tabulations in order to complete a story which can be compared with the compensation experience of executives.

This will be a legitimate procedure if we can assume that the distribu-

[11] Elton Rayack, "The Supply of Physicians' Services," *ILRR*, January 1964, pp. 221–237.

[12] U.S. Treasury Department, Internal Revenue Service, *Statistics of Income, Business Tax Returns*.

[13] Data which permit accurate computations exist only from 1959 on, however, and the 1963 figures were not yet available at the time of this writing. A useful supplement to the IRS tabulations is research note #13-1965 of the U.S. Department of Health, Education, and Welfare, Social Security Administration, Division of Research and Statistics, entitled *Incomes of Physicians and Dentists from Private Self-Employment Practice: 1960–1962*, Washington, 1965.

tion of incomes within the three professional groups indicated has not changed significantly over the last quarter century. Should that be the case, virtually any sample from among each group which is chosen on a consistent basis from one year to the next will produce a time series for earnings that will closely approximate the rate of growth of the average—whether mean or median—for the whole profession. In consequence, the stringing together of *successive* time series segments, derived from different samples in different periods, will be appropriate to construct a longer historical record, since it is only growth rates and not absolute levels of earnings that are our concern. Strong support for such a solution can be found in the *Survey of Current Business* studies just cited. The relative income distributions (the so-called "Lorenz curves") for all three professions at issue were found to have changed very little over the period for which data were collected by the Department of Commerce.[14] On that evidence, and for lack of an alternative, a sequential approach to estimating earnings increases *will* be undertaken.

The procedure is as follows: The *Survey of Current Business* figures are chosen as the basis for the historical record beginning in 1940. Because these compilations end in the early 1950's, the rate of growth in average professional incomes between 1949 and 1959 will be approximated from the change in the numbers reported by the Bureau of the Census in those two years. For example, the *SCB* survey indicates that the average income of physicians in 1949 was $11,744. According to Census data, the 1959 figure for such individuals was 1.808 times its 1949 value.[15] At that rate of increase, the *SCB* average would have risen to $21,237 by 1959. Similar projections can be made for dentists and lawyers, and the patterns of growth from 1959 on can be derived from the secular changes in the *Statistics of Income* figures. The result (see Table 10) is three time series which—albeit with a few gaps—in effect predict what would have been the outcome of the *SCB* survey had it been conducted in every year from 1940 through 1962. Given

[14] *Survey of Current Business*, January 1950, p. 10; July 1951, p. 12; and December 1956, p. 27.

[15] That is, an increase from a median income of $8,302 to one of $15,013 (see Table 9).

no substantial change in intraprofessional income distributions over time,[16] these series should constitute fairly accurate indexes of the "true" rates of growth in the before-tax earnings of the several professions. Even if they are only rough approximations, the evidence that executives have lost ground relative to the income from these occupations turns out to be sufficiently compelling that considerable errors in the estimates can be tolerated without endangering that conclusion.

The corresponding—and, for comparisons, more relevant—after-tax figures present an additional problem. They depend not simply on the rate of increase but on the magnitude of before-tax earnings. In that connection, it does not seem reasonable to offer the averages compiled in Table 10 as meaningful benchmarks for an appraisal of the time pattern of senior executives' rewards. The same talents and energies which enabled these individuals to reach the top of their chosen field would very likely have produced a similar result in other vocations. Accordingly, the earnings of, say, the top 1 per cent or so of the nation's physicians, lawyers, and dentists might be more appropriate criteria in the present context. As long as the Lorenz curves for the various professions retain their shapes over time, the rates of growth of before-tax earnings for such men will match those of the averages for their contemporaries, but the same will not be true after taxes. In particular, the graduated personal income tax will cause the observed after-tax increases to be less the higher the level of pretax income in question. It would be misleading, therefore, to compute tax liabilities on the basis of the data in Table 10, since this would tend to overstate after-tax growth rates vis-à-vis top executives.

Unfortunately, information of the sort which would permit us to identify the earnings of the most successful individuals in each activity is not available, and it is necessary to attempt to remove the indicated bias in some indirect manner. One possible approach would be to "factor up" the figures derived above by assuming that the average before-tax

[16] An assumption which is reinforced when the *Medical Economics* figures listed in the third column of Table 9 are used as a check on the indicated estimate of the 1959 average income of physicians. The values for 1951 and 1959 from that source were $15,262 and $23,888, respectively—a gain of 56.5 per cent in eight years. If the 1951 *SCB* figure of $13,432 is projected to 1959 on that basis, an average income of $21,020 in the latter year is obtained. This figure is within about 1 per cent of the $21,237 estimate derived from the growth in the Census averages.

TABLE 10

Derived Average Before-Tax Earnings of Physicians, Lawyers, and Dentists, 1940–62
(dollars)

	Physicians		Lawyers		Dentists	
Year	Average Earnings	Index (1962 = 1.000)	Average Earnings	Index (1962 = 1.000)	Average Earnings	Index (1962 = 1.000)
1940	4,441	.187	4,507	.280	3,314	.200
1941	5,047	.213	4,794	.297	3,782	.229
1942	6,735	.284	5,527	.343	4,625	.280
1943	8,370	.353	5,945	.369	5,715	.346
1944	9,802	.413	6,504	.404	6,649	.402
1945	10,975	.462	6,861	.426	6,922	.419
1946	10,202	.430	6,951	.431	6,381	.386
1947	10,726	.452	7,437	.461	6,610	.400
1948	11,327	.477	8,003	.497	7,039	.426
1949	11,744	.495	7,971	.495	7,146	.432
1950	12,324	.519	8,349	.518	7,436	.450
1951	13,432	.566	8,855	.549	7,820	.473
1952	–	–	9,021	.560	–	–
1953	–	–	9,392	.583	–	–
1954	–	–	10,258	.636	–	–
1959	21,237	.894	14,284	.886	13,733	.830
1960	21,707	.914	14,445	.896	14,322	.866
1961	22,485	.947	15,893	.986	15,192	.919
1962	23,744	1.000	16,117	1.000	16,538	1.000

income of the top professional men in the country in recent years has been equal to the average before-tax salary and bonus received by the executives in our sample. The historical record for such men could then be reconstructed simply by hypothesizing a pattern of pretax earnings increases like that suggested by Table 10 but which ends up instead at the higher level specified. In this way, something very much like the impact of heavier progressive taxes on executives' rewards over time would be attributed to the professions as well.

To illustrate: The before-tax direct current remuneration of senior corporate executives was discovered to reach a plateau in 1955 and

remain at just about the same level through 1963.[17] Over that period the five highest-salaried men in each of fifty companies studied here enjoyed, on average, an annual before-tax salary and bonus of $143,548. If we assume that the individuals at the upper end of the income distribution within the medical profession, which is apparently the most affluent nowadays of the three examined, had average earnings in 1962 equal to that figure, their prior experience can be estimated by making use of the index numbers recorded in Table 10. Thus, for 1961, a value of $135,938 ($143,548 × 0.947) is obtained; for 1960, one of $131,234 ($143,548 × 0.914); and so on, back to 1940. If it is further assumed that the most successful lawyers and dentists had incomes in 1962 which stood in the same relationship to those of top physicians as the over-all averages for that year for the three professions would suggest, their earnings histories can be developed along similar lines. On this basis, the 1962 figure for lawyers will be 16,117/23,744, and for dentists 16,538/23,744, of that for physicians—which values come to $97,439 and $99,984, respectively. Corresponding figures for earlier years can then be generated from the observed rates of growth of incomes in the legal and dental professions. In effect, the convention is that for lack of more concrete evidence, the same degree of progressivity in tax rates which has recently been associated with top executive salaries and bonuses should also be applied to professional incomes. While the procedure adopted to accomplish this is certainly an arbitrary one, and is by no means the only possible solution, it at least operates in the right direction to remove the bias that clearly would be present were the figures in Table 10 used as they stand. The resulting before- and after-tax time series are recorded in Table 11. The after-tax figures were obtained by assuming the same percentage of deductions and exemptions,[18] and of "outside income," [19] as in the case of executives.

A comparison, therefore, of these data with the compensation history of the executive sample documents the differences in the several rates of growth. In Table 12 and Chart 15, the after-tax incomes of the three professional groups and the total after-tax compensation of senior executives are collected. For convenience and ease of interpretation, the

[17] See Table 1 and Chart 1.
[18] That is, 10 per cent of total income up to 1950; 15 per cent thereafter.
[19] 15 per cent of earnings from professional employment.

TABLE 11

Adjusted Average Incomes of Physicians, Lawyers, and Dentists, 1940–62
(dollars)

	Physicians		Lawyers		Dentists	
Year	Before-Tax	After-Tax	Before-Tax	After-Tax	Before-Tax	After-Tax
1940	26,849	22,425	27,248	22,701	20,035	17,525
1941	30,513	20,983	28,983	20,150	22,865	16,778
1942	40,718	23,187	33,415	20,079	27,961	17,583
1943	50,603	24,366	35,942	19,458	34,551	18,919
1944	59,260	26,911	39,321	20,676	40,198	20,984
1945	66,352	28,834	41,480	21,436	41,848	21,565
1946	61,678	30,849	42,024	23,723	38,578	22,309
1947	64,846	31,904	44,962	24,865	39,962	22,876
1948	68,480	42,962	48,384	32,852	42,556	29,746
1949	71,001	44,185	48,190	32,748	43,203	30,091
1950	74,507	45,852	50,476	33,960	44,956	31,025
1951	81,206	47,248	53,535	34,839	47,277	31,567
1952	–	–	54,538	32,912	–	–
1953	–	–	56,781	33,877	–	–
1954	–	–	62,017	38,690	–	–
1959	128,393	64,973	86,357	49,378	83,026	48,001
1960	131,234	65,929	87,330	49,780	86,587	49,473
1961	135,938	67,515	96,084	53,246	91,846	51,601
1962	143,548	70,071	97,439	53,771	99,984	54,759

patterns over time are recast in the form of index numbers, 1940 being the base year for all series.[20] Since, in that respect, the record of after-tax remuneration received by both the top executive in each of the fifty companies studied and by the top five together is almost identical, only the experience of the latter is depicted in Chart 15.[21]

It can be seen from these tabulations that executives *have* trailed other professions over the last quarter century in the rate of growth of

[20] The figures for executives are those compiled in Table 3. As has been done on several previous occasions, the rewards generated by stock options during the period 1955 through 1963 have been averaged over that period.

[21] Also in that chart, the pattern of growth in professional earnings in years for which data are unavailable is approximated by a straight line.

TABLE 12

Comparative Growth in After-Tax Incomes: Executives vs. the Professions, 1940–63
(1940 = 1.000)

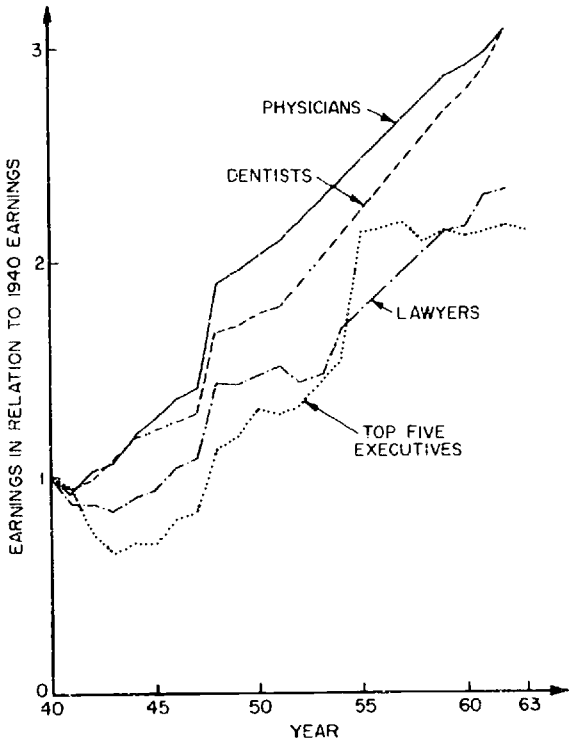
Year	Physicians	Lawyers	Dentists	Top Executives	Top Five Executives
1940	1.000	1.000	1.000	1.000	1.000
1941	0.936	0.888	0.957	0.898	0.952
1942	1.034	0.884	1.003	0.647	0.742
1943	1.087	0.857	1.080	0.554	0.651
1944	1.200	0.911	1.197	0.624	0.701
1945	1.286	0.944	1.231	0.604	0.692
1946	1.376	1.045	1.273	0.677	0.801
1947	1.423	1.095	1.305	0.768	0.837
1948	1.916	1.447	1.697	0.978	1.129
1949	1.970	1.443	1.717	1.033	1.186
1950	2.045	1.496	1.770	1.204	1.322
1951	2.107	1.535	1.801	1.072	1.294
1952	–	1.450	–	1.144	1.330
1953	–	1.492	–	1.292	1.442
1954	–	1.704	–	1.407	1.558
1955	–	–	–	2.105	2.153
1956	–	–	–	2.099	2.168
1957	–	–	–	2.146	2.200
1958	–	–	–	2.030	2.100
1959	2.897	2.175	2.739	2.065	2.164
1960	2.940	2.193	2.823	2.014	2.136
1961	3.010	2.346	2.944	2.043	2.162
1962	3.125	2.369	3.125	2.088	2.180
1963	–	–	–	2.001	2.162

after-tax incomes—even when the value to them of the major supplements to their salaries and bonuses is recognized.[22] Physicians and den-

[22] The question as to whether these relationships may be affected by items of income which could not be included therein is a difficult one to answer. Self-employed professional men such as physicians, lawyers, and dentists almost certainly have a greater opportunity that do executives to mix elements of personal consumption with their actual business expenses in reporting the net

CHART 15

Growth in After-Tax Earnings of Executives and Other Professional Groups, 1940–63



income figures recorded above. While to that extent their earnings are really higher than the figures suggest, this does not present a problem here unless the *degree* of underreporting has changed significantly over the years. Thus, as long as growth rates and not absolute levels are at issue, only changes in the relative importance of any missing data are of concern. Even though increases in personal tax rates over the period studied may have encouraged the self-employed to rely more heavily on "hidden" consumption expenditures and caused the rate of growth of their incomes to be somewhat greater than it appears from the available data to have been, it should be remembered that there may be a similar bias contained in the executive compensation time series. Because of the limitations of the information available in corporate proxy statements, certain rewards enjoyed by executives—e.g., company-provided life and health insurance benefits—could not be appraised empirically. Since the value of those rewards is also likely to have been increasing over time, the historical trend in total executive pay may be mildly understated as it stands, and this understatement should offset, at least in part, any which is associated with the earnings of the professions.

tists did substantially better, enjoying between 1940 and 1962 a compound annual rate of earnings growth equal to approximately 5.2 per cent as compared with 3.3 per cent for executives. While lawyers in general did less well,[23] they still managed a 3.9 per cent rate of growth. These comparisons are, of course, strengthened by the fact that average annual professional earnings have been and apparently continue to be steadily rising over time, whereas the compensation of corporate executives seems at the moment to have reached a plateau.[24] Moreover, the indicated gap between executives and the professions is sufficiently wide that any errors in estimating the relevant data would have to be fairly large in order to undo the conclusions offered.[25]

Other Corporate Employee Groups

Another occupational "category" whose earnings—or, at least, secular changes therein—are of interest in connection with the experience of top executives is the group of individuals who labor at lower levels within the corporate organization. The question is whether the compensation differentials between the senior officers of large manufacturing firms and the rest of their firms' employees have narrowed or widened over time.

One very simple way to attempt to answer this question would be to examine the circumstances of those individuals who are in effect at the opposite end of the corporate hierarchy: the wage-earning production labor force and firms' newly-hired management trainees. The latter are by no means likely to be the lowest-paid employees in a company, but they do occupy the bottom rung on the *management* ladder and are relevant for that reason. While it would also be desirable to examine

[23] In fact, in 1940 lawyers earned more on average than either physicians or dentists but by 1962 were the lowest-paid of the three professions (see Table 10).

[24] And, as noted earlier, the maintenance of even that "plateau" depends either on a continuing opportunity for executives to realize stock option profits comparable to those of the late 1950's and early 1960's, or an offsetting rise in the value of their other rewards.

[25] Appendix L discusses some alternative assumptions about the tax rates on professional incomes. Under any reasonable set of possible conditions, executives consistently appear to have fallen behind. Because the rate of growth of their rewards has been so uneven over the interval studied, however, there are subperiods in which they have done better than the professions—1945 to 1950 and 1952 to 1955, for example (see Chart 15).

the rewards of middle-management personnel, information that would permit us to do so is not available in any published source. Data relating to the other two groups of employees do exist, however, and should serve to indicate whether senior executives are losing ground within their own companies as well as within the professional community.

According to the Bureau of Labor Statistics, the average gross weekly wages of manufacturing production workers rose from $24.96 in 1940 to $99.63 in 1963, an increase of some 300 per cent.[26] While these figures incorporate the effect not only of higher hourly wage rates but also of changes in the length of the average work week, they are not affected significantly by the second factor. The number of hours worked per week per employee in manufacturing was only slightly greater in 1963 than in 1940—40.5 and 38.1 hours, respectively.[27] The story would therefore not be much different if it were cast in terms of hourly wage rates instead.[28] Because the weekly figures seem a better measure of changes in actual gross earnings, they will be adopted for the comparisons here.

An important class of rewards which is not included in these figures, however, is the so-called "fringe benefit" package. Production workers clearly enjoy more in the way of such items as pensions, life and health insurance, vacations and holidays, and sick leave, nowadays than they did in the early 1940's. The Chamber of Commerce estimates that the additional cost of such arrangements to a typical employer company currently comes to approximately one-fourth of the basic wage bill itself.[29] Wage data alone will, as a result, understate the true rate of growth of workers' total compensation, especially when compared with the earnings of top executives for whom supplements to salary and bonus have been very carefully taken into account. The problem which is confronted in performing a similar analysis for production workers is that the data which are available relate to the *cost* of fringe benefits, not to their *value* from the employees' standpoint. The total compensa-

[26] *Employment and Earnings Statistics for the United States, 1909–64*, Bulletin No. 1312-2, Washington, 1964. Table 3, p. xvi.

[27] *Ibid.*, p. xvi.

[28] The relevant values are: $0.655 per hour in 1940 and $2.46 in 1963, a gain of 276 per cent on that basis. *Ibid.*, p. xvi.

[29] Including payments required under Social Security, workmen's compensation, and unemployment compensation legislation. Chamber of Commerce of the United States, *Fringe Benefits: 1963*, Washington, 1964, p. 9.

tion time series derived above for executives consist of estimates as to how much various deferred and contingent forms of reward are worth as judged by their recipients' alternative market opportunities to secure equivalent arrangements on an individual basis. An effort of that sort is impossible for a large and anonymous body of wage-earners. Fortunately, it also turns out that it is not really necessary for purposes of the present discussion. Manufacturing production workers' wages alone grew at a sufficiently rapid pace since 1940 to permit us to conclude that the rate of growth of their aggregate remuneration—whatever that figure might be—comfortably exceeded the corresponding rate for top executives.

Table 13 presents, for every year from 1940 through 1963, the BLS calculations of average gross weekly earnings in manufacturing and, more importantly, average "spendable" weekly earnings.[30] The latter is estimated by the BLS by deducting the federal income and Social Security tax liability that would be applicable to a married worker with two children employed all year long and receiving the indicated gross before-tax income each week.[31] The third column in the table is the spendable income series in index number form, with 1940 chosen as the base year. The fourth column reproduces, again with 1940 as the base, the total after-tax compensation history of the top five senior executive sample recorded previously in Table 12. A comparison of these last two series reveals very clearly the higher rate of growth in earnings realized by production workers, even in the absence of any allowance for the value of their wage supplements.

A similar story emerges if we examine the secular increase in the starting salaries of management trainees—which in the view here means the starting salaries of MBA graduates. While again it is impossible to say much about such individuals' fringe benefits, there is an additional problem in developing a meaningful time series. Most of the schools of business which are now regarded as among the nation's best did not really attain that status until midway through the time period under consideration. The historical record of growth in the starting salaries of their graduates will therefore reflect not only the general economic forces

[30] *Employment and Earnings Statistics*, p. 646.

[31] The fact that Social Security taxes are deducted in these computations but were not in determining the amount of executives' after-tax income means that a slight additional bias in favor of executives is built into the comparisons.

TABLE 13

Comparison of Manufacturing Production Workers' and Top Executives' Earnings, 1940–63

Year	Workers' Gross Weekly Earnings (dollars)	Workers' Spendable Weekly Earnings (dollars)	Workers' Spendable Earnings Index (1940 = 1.000)	Executive Compensation Index (1940 = 1.000)
1940	24.96	24.71	1.000	1.000
1941	29.48	29.19	1.181	0.952
1942	36.68	36.31	1.469	0.742
1943	43.07	41.33	1.673	0.651
1944	45.70	43.76	1.771	0.701
1945	44.20	42.59	1.724	0.692
1946	43.32	42.79	1.732	0.801
1947	49.17	47.58	1.926	0.837
1948	53.12	52.31	2.117	1.129
1949	53.88	52.95	2.143	1.186
1950	58.32	56.36	2.281	1.322
1951	63.34	60.18	2.435	1.294
1952	67.16	62.98	2.549	1.330
1953	70.47	65.60	2.655	1.442
1954	70.49	65.65	2.657	1.558
1955	75.70	69.79	2.824	2.153
1956	78.78	72.25	2.924	2.168
1957	81.59	74.31	3.007	2.200
1958	82.71	75.23	3.045	2.100
1959	88.26	79.40	3.213	2.164
1960	89.72	80.11	3.242	2.136
1961	92.34	82.18	3.326	2.162
1962	96.56	85.53	3.461	2.180
1963	99.63	87.78	3.552	2.162

which impinge upon the segment of the labor market in which we are interested, but will have built into it the effect of substantial changes in the quality of the various schools as well. The result is almost certain to be an upward bias in the data over time which would distort any

comparisons with increases in top executive remuneration. Given also that the experience of the graduates of *leading* institutions would seem to be the most desirable basis of comparison, the solution is simply to concentrate on a school or schools in that category whose relative standing in the academic community —or, perhaps more to the point, whose relative reputation among prospective employers—has not changed significantly since the early 1940's. There is at least one institution, the Harvard Business School, about which most observers would probably agree in this connection, and the growth in the starting salaries of its graduates over the last twenty-five years should provide an appropriate and convenient historical standard for our purposes here.[32]

The relevant data are presented in Table 14.[33] The first column records the mean before-tax starting salaries of Harvard MBA graduates from 1940 to 1963, and the second the after-tax counterpart of those figures. The latter were computed in the same manner as were executives' after-tax rewards and the after-tax earnings of the professional groups discussed in the preceding section, i.e., by assuming in determining tax liabilities the same percentages of deductions and exemptions and of outside income in relation to salary. The third column restates the second as an index based again on 1940 and the fourth is a duplicate of the after-tax series for the executive sample contained in Tables 12 and 13. Chart 16 summarizes the pertinent comparisons by combining these data with those developed for manufacturing production workers.[34]

There is evidence, then, that the compensation "spread" between the highest and lowest employee levels in large manufacturing corporations has narrowed—in relative terms, at least—during the last quarter century. Top executives' earnings have grown considerably more slowly

[32] If the same is true of several other schools, the experience of their graduates should be quite similar, and little will be lost by not considering them explicitly.

[33] The author is indebted to the Director of Placement at the Harvard University Graduate School of Business Administration, Mr. John Steele, for supplying the information for these time series.

[34] It should be noted that the use of starting salaries for an entire MBA class in such comparisons implicitly assumes that the pay of those graduates who actually join *manufacturing* firms—and who therefore comprise the particular group whose rewards are really of interest—has grown at the same rate as that of their contemporaries who chose to accept jobs in other sectors of business. There seems to be no real reason to question this assumption, but attention should be called to the fact that it is inherent in the comparisons presented.

TABLE 14

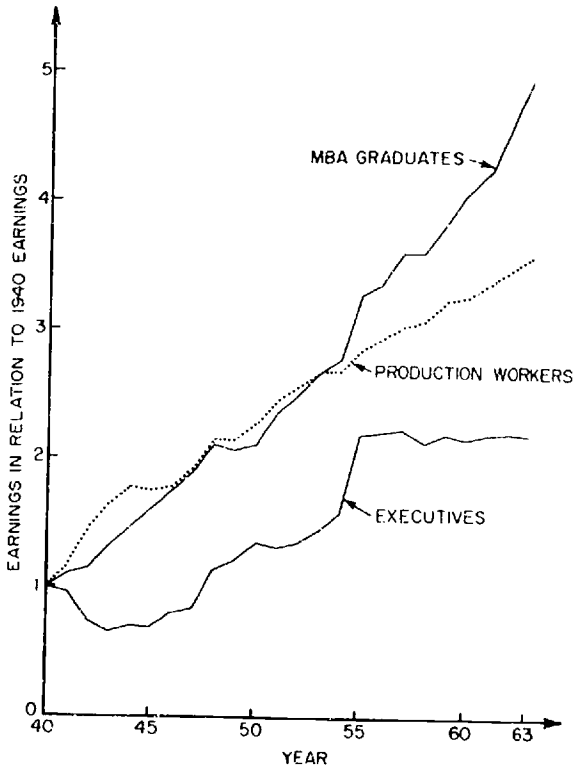
Comparison of MBA Starting Salaries and Top Executives' Earnings, 1940–63

Year	Before-Tax MBA Starting Salary (dollars)	After-Tax MBA Starting Salary (dollars)	MBA After-Tax Salary Index (1940 = 1.000)	Executive Compensation Index (1940 = 1.000)
1940	1,550	1,489	1.000	1.000
1941	1,800	1,638	1.100	0.952
1942	2,100	1,730	1.162	0.742
1943	2,490	1,964	1.319	0.651
1944	n.a.	n.a.	n.a.	0.701
1945	n.a.	n.a.	n.a.	0.692
1946	3,136 [a]	2,579 [a]	1.732	0.801
1947	3,396	2,790	1.874	0.837
1948	3,685	3,134	2.105	1.129
1949	3,602	3,063	2.057	1.186
1950	3,683	3,132	2.103	1.322
1951	4,200	3,484	2.340	1.294
1952	4,571	3,698	2.484	1.330
1953	4,894	3,954	2.655	1.442
1954	4,943	4,088	2.745	1.558
1955	5,882	4,851	3.258	2.153
1956	6,021	4,964	3.334	2.168
1957	6,483	5,340	3.586	2.200
1958	6,475	5,334	3.582	2.100
1959	6,909	5,686	3.819	2.164
1960	7,330	6,028	4.048	2.136
1961	7,666	6,302	4.232	2.162
1962	8,291	6,806	4.571	2.180
1963	8,982	7,345	4.933	2.162

[a] For September graduates: all other figures refer to June graduates.
n.a. = not available

CHART 16

After-Tax Earnings of Executives, Production Workers, and Recent MBA Graduates, 1940–63



than those of either their firms' production workers or new management trainees. Apparently, the role which unions have played in the labor market since the early 1940's and the increasing intensity of the competition for promising young managerial recruits have exceeded any similar pressures on senior executives' rewards. Whatever the explanation, the differences in the rates of growth of earnings are unmistakable and appear, if anything, to be widening in recent years.

Real Income

A final standard by which to judge the historical performance of top executive compensation is the behavior of the prices which executives,

in their role as consumers of goods and services, must confront. If, for example, we take the Bureau of Labor Statistics' familiar Consumer Price Index series as a reasonable approximation of secular changes in purchasing power, we may use that series to determine how well the men in the sample have fared over the years in terms of "real" income.[35] Table 15 and Chart 17 restate in this manner the total after-tax compensation experience of the highest-paid executive in each sample company and of the five highest-paid as a group. The year 1940 is chosen as the base for the price index, which is recorded in Table 16, and all income figures are therefore in 1940 dollars. Once again, executive stock option profits were averaged over the period 1955 to 1963 in order to highlight longer-term trends.[36]

Comparison with the undeflated experience depicted in Charts 15 and 16 reveals that the historical pattern of aggregate remuneration is transformed from one of modest, albeit uneven, growth to one of stagnation. The wartime drop in after-tax compensation appears sharper, the postwar recovery not as substantial, and the experience of the 1950's and early 1960's less impressive than the current-dollar time series indicated. A downward trend in total compensation, in constant dollars, following the peak year of 1955 is now evident.

Upon adjusting for price changes, therefore, we find that the several deferred and contingent compensation devices incorporated into the pay package since World War II and used extensively since the mid-1950's have resulted not in amounts of top executive remuneration higher than ever before but instead have simply enabled real incomes to be restored to approximately their 1940 levels. Put another way, the men in the sample would be just about *half* as well off now as they

[35] Ideally, a price index based on the "market basket" of goods and services purchased by high-income families should be employed. Since no such index exists, the CPI is the only possible choice. If there is any bias introduced thereby, it seems likely to be in the direction of *understating* the actual price increases faced by executives. Thus, services almost certainly represent a larger proportion of total consumption for high-income families than for those units whose expenditures are examined in compiling the CPI. Given that the prices of services have, in general, been increasing more rapidly over time than those of goods, a high-income consumer price index would be expected to indicate a sharper decline in purchasing power since 1940 than the CPI itself. If so, the consequence here will be too optimistic a picture of top executives' real income histories.

[36] That is, they were averaged in absolute dollar terms prior to being adjusted for price changes.

TABLE 15

Executives' Real Total After-Tax Compensation, 1940–63
(figures in 1940 dollars)

Year	Top Executive	Top Five Executives
1940	101,979	59,740
1941	87,093	54,125
1942	56,667	38,122
1943	45,750	31,483
1944	50,695	33,338
1945	47,962	32,163
1946	49,564	34,370
1947	49,132	31,361
1948	58,099	39,280
1949	61,911	41,637
1950	71,514	46,017
1951	58,944	41,680
1952	61,560	41,926
1953	68,996	45,121
1954	74,802	48,528
1955	112,297	67,270
1956	110,380	66,734
1957	109,000	65,464
1958	100,284	60,787
1959	101,241	62,145
1960	97,189	60,377
1961	97,589	60,487
1962	98,592	60,302
1963	93,364	59,087
Average: 1955–63	102,204	62,517

TABLE 16

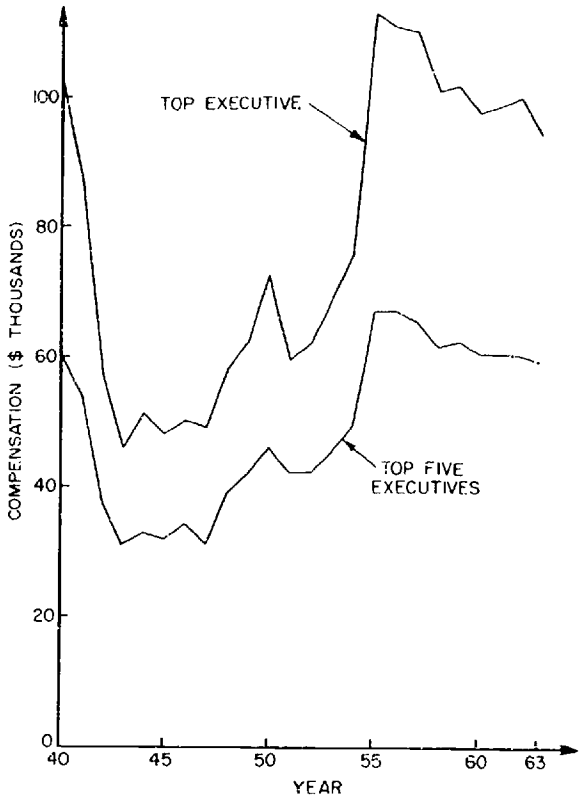
Consumer Price Index, 1940–63 (1940 = 1.000)

Year	Index Value
1940	1.000
1941	1.051
1942	1.164
1943	1.236
1944	1.256
1945	1.285
1946	1.393
1947	1.594
1948	1.717
1949	1.701
1950	1.717
1951	1.855
1952	1.895
1953	1.910
1954	1.919
1955	1.912
1956	1.941
1957	2.008
1958	2.064
1959	2.080
1960	2.113
1961	2.135
1962	2.160
1963	2.186

SOURCE: U.S. Department of Commerce. Bureau of the Census. *Statistical Abstract of the United States: 1965*, Washington, D.C., 1965, p. 361.

CHART 17

"Real" After-Tax Total Compensation, 1940–63



were before World War II had the salaries and bonuses they received been their only rewards.[37]

While a price index of the type employed in arriving at these conclusions may not tell the whole story with regard to changes in the amount and, especially, the quality of consumer-good purchasing power per dollar of expenditure, it would certainly require a major modification of that index to make the record of the executives considered look very favorable. Moreover, in its present terms their real income during

[37] Since, as was observed previously, these payments generated roughly half the aggregate after-tax compensation they enjoyed from 1955 through 1963. See Tables 4 and 5.

the later years of the study is, if anything, overstated. The current income equivalents of the various supplements to salary and bonus each year have been combined with the same year's actual receipts from the latter in deriving the time series depicted. Thus, items that permit current consumption and those that represent the possibility of future consumption have been added together without adjustment. In order to do so legitimately, it is necessary to assume that prices will not change in the interim—or, more appropriately, that the executives involved believe each year they will not. Given that the concern here is with measuring the impact of just such changes, this assumption is obviously incorrect. If prices are likely to rise over time, as they seem to, the effect is to impute too high a real income value to the current equivalent of every deferred reward. Since those rewards have provided effectively all the observed secular increase in top executives' (undeflated) after-tax compensation, the consequence is an overstatement of the growth—or an understatement of the decline—in their aggregate real income over time.[38] The task of prescribing a different set of price expectations for each of the twenty-four years of the study was sufficiently unattractive, however, that accepting and acknowledging the probable bias appeared the better alternative.

Summary

By any one of several criteria, the compensation of top executives in large manufacturing firms has not increased very rapidly during the last quarter century. The corporations whose affairs they administer—and therefore, under certain not unreasonable assumptions, the productive contributions of the executives themselves—grew considerably faster in every important respect. The after-tax incomes enjoyed by other leading professional groups in the community, among them physicians, lawyers, and dentists, now stand at anywhere from two and one-half to three times their 1940 levels, while executives' earnings have just about doubled. At the opposite end of the corporate employee hierarchy, manufacturing production workers have been awarded substantially larger pay increases, and the starting salaries paid by firms to their man-

[38] Added to which, of course, is the suspicion expressed above that the CPI is too mild a deflator of high-income families' purchasing power.

agement trainees rose by some 400 per cent over the period studied. Perhaps as importantly from the executives' standpoint, if secular increases in the prices of consumer goods and services are taken into account, the men in the sample turn out to have experienced no increase in their "real" income since 1940.