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ADMINISTERED PRICES

DRUGS

REPORT

OF THE

COMMITTEE ON THE JUDICIARY

UNITED STATES SENATE

MADE BY ITS

SUBCOMMITTEE ON ANTITRUST AND MONOPOLY

PURSUANT TO

S. Res. 52

EIGHTY-SEVENTH CONGRESS, FIRST SESSION

TOGETHER WITH INDIVIDUAL VIEWS

To Study the Antitrust Laws of the United States, and Their Administration, Interpretation, and Effect

STUDY OF ADMINISTERED PRICES IN THE DRUG INDUSTRY



JUNE 27, 1961.—Ordered to be printed

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*The Hon. Thomas J. Dodd was not a member of the subcommittee when the hearings were held on the subject matter covered by this report.

LETTER OF TRANSMITTAL

MAY 8, 1961.

HON. JAMES O. EASTLAND,
Chairman, Committee on the Judiciary,
U.S. Senate, Washington, D.C.

DEAR SENATOR EASTLAND: I am transmitting herewith for the information of members of the Committee on the Judiciary a report of the Antitrust and Monopoly Subcommittee entitled "A Study of Administered Prices in the Drug Industry," together with the views of Senators Dirksen, Hruska, and Wiley.

The inquiry of the subcommittee into administered pricing into specific areas has now embraced four major industries: steel, automobiles, bread, and now drugs. The selection of the drug manufacturing industry was made because of the great importance of the cost of drug products to most Americans, particularly to our older citizens. The study of administered pricing is continuing.

I want to acknowledge with appreciation the efforts of Paul Rand Dixon, formerly counsel and staff director, and Dr. John M. Blair, chief economist, both in the work of the hearings on which this report is based and in the assistance they rendered the committee in the preparation of this report.

Special acknowledgment should be made to Drs. E. Wayles Browne, Jr., Walter Measday, and Irene Till for their contributions, and to Mrs. Lucile B. Wendt for her technical assistance.

Sincerely,

ESTES KEFAUVER.

[illegible] OF [illegible]

May 8, 1961

[illegible]

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CONTENTS

MAJORITY VIEWS

	Page
Introduction	1
Part I. The reasonableness of price	6
Chapter 1. The cost standard	6
Costs of bulk powder	6
Costs of tableting, bottling, and packaging	7
The meaning of unit direct costs	9
The treatment of research expenditures	11
The meaning of "gross profit" and "margin"	13
"Percentage margin" versus "percentage markup"	14
Computed unit production costs: Corticosteroids	15
Computed unit production costs: Tranquilizers	17
Computed unit production costs: Orinase	19
Computed unit production costs: Tetracycline	21
Comparisons with other industries	25
Gross margin, drug operations only	29
Chapter 2. Prices in foreign countries as a standard	32
Corticosteroids	32
Tranquilizers	33
Oral antidiabetics	36
Antibiotics	38
Rationalizations of foreign price variations	42
Chapter 3. The profit standard	46
Profits on individual products	46
Profits in drugs versus all manufacturing	48
Ranking of drug companies among 500 largest industrial corporations	51
Ranking of drug industry against other industries	53
Trends of profit rates	55
Profits compared with net worth	55
Stock prices and dividends	61
Drug operations versus nondrug business	63
Part II. The control of the market	65
Chapter 4. Economic concentration in ethical drugs	65
Concentration of production	66
Concentration of sales	69
The position of small business	72
Chapter 5. The behavior and determination of price	80
The behavior of price	80
Sales to the drug trade	81
Sales to institutional buyers	88
The determination of price	97
Part III. Patents and research in drugs	105
Chapter 6. Patents and prices in world markets	105
Patent protection in foreign countries	105
Prices in countries with and without patents	107
Chapter 7. Patents and drug discoveries	114
Drug discoveries with and without patents	115
History of discovery in individual product groups	120
Corticosteroids	121
Tranquilizers	121
Oral antidiabetics	123
Antibiotics	123
Basic research versus product development	126
Chapter 8. Patents and restriction of competition	138
Monopoly	141
Duopoly	143
Oligopoly	145
Patents as the base for international cartels	147
Patent applications used as patent grants	150
Private settlement of interferences	152

▼

Page

Part IV. Advertising and promotion of drugs 155
Chapter 9. Magnitude of promotion expense 156
Chapter 10. Physicians' criticisms of promotional practices 165
Types of misleading advertising 165
The use of useless drugs 169
Difficulties in drug evaluations 171
Role of medical director 173
Overemphasis of trade names 174
Drug companies and medical journals 180
Drug companies and the lay press 183
Need for determining efficacy 187
Chapter 11. The special problem of detail men 190
Physicians' comments 190
The nature of the problem 191
Chloromycetin: A case example 192
Chapter 12. The special problem of side effects 198
The case of Decadron 202
Advertising to physicians 204
Testimony of Merck officials 207
The case of Diabinese 210
Opinion of medical experts 212
Pfizer data on side effects 217
Pfizer's position in hearings 219
Part V. Generic names versus trade names 223
Chapter 13. The confusion of names 223
Chapter 14. The promotion of trade names 231
Collective activities: National Pharmaceutical Council 235
New concept of "substitution" 235
Attack on hospital formularies 238
"Educational" pamphlets 241
Chapter 15. The substantive issue of drug quality 245
Appendix A:
Status of patent protection on drugs—18 countries 254
Appendix B:
Table A–1. Drug company profits compared with all manufacturing, 1959 257
Table A–2. Rates of return after taxes: Identical companies in three industries, and all manufacturing, 1947–59 257
Table A–3. Schering Corp.: Purchase price 1952, and profits after taxes, 1952–June 1957 258
Table A–4. Smith Kline & French Laboratories: Net worth January 1, 1949, and profits after taxes, 1949–59 258
Table A–5. American Home Products Corp.: Net worth January 1, 1949, and profits after taxes, 1949–59 258
Table A–6. Carter Products, Inc.: Net worth April 1, 1957, and profits after taxes, 1957–58 to 1959–60 259
Table A–7. Leading antibiotics—1959, percent of market 259
Table A–8. Antibiotic prices: Broad versus narrow spectrum, 1951–60 260
Table A–9. Penicillin—Lilly: Bulk prices compared with prices to druggists, 1948–60 260
Table A–10. Penicillin: Wholesale prices by size of company, 1960 261
Table A–11. Prednisone: Wholesale prices by size of company, 1959 261
Table A–12. Prednisolone: Wholesale prices by size of company, 1959 261
Table A–13. MMSA drug procurement: Relationship of number of bidders to MMSA price expressed as percent of commercial price, 1959 and early 1960 262

CHARTS, TABLES, AND OTHER EXHIBITS

Letter from Richlyn Laboratories, November 2, 1959, containing charges for steroid hormones 8
Nysco Laboratories, fall-winter, 1959, catalog, charges for drugs 9
Table 1. Prednisolone, 5 mgm. tablets, computed production cost based on bulk price transaction and contract processing charges 15
Table 2. Prednisone, 5 mgm. tablets, computed production cost based on bulk price transaction and contract processing charges 16

Page
Letter from Dart Drug Co., January 4, 1960, re prices for prednisone and prednisolone 17
Table 3. Meprobamate, 400 mgm. tablets, computed production cost based on bulk price transactions and contract processing charges (exclusive of selling and distribution costs) 18
Table 4. Orinase, 0.5 gram tablets, computed production cost based on bulk price transactions and contract processing charges (exclusive of selling and distribution costs) 20
Bristol Laboratories, cost of goods sold, 1958 21
Chart 1. Tetracycline capsules, price to druggists and estimated production costs, 1958, 100 capsules, 250 mgm 23
Table 5. Tetracycline phosphate complex capsules, 250 mg., computed production cost (exclusive of selling and distribution costs) per bottle of 100 capsules, 1958 24
Table 6. Comparison between computed production cost and prices 1958 (Bristol and Upjohn) 24
Table 7. Cost of goods sold and gross margin as percentages of sales for 15 drug companies, 1959 27
Table 8. Cost of goods sold and gross margin as percentages of sales for 50 companies in 50 "three-digit" industries, 1959 28
Table 9. Breakdown of sales dollar for 22 drug companies (drug operations only) 31
Table 10. Prednisone, Merck's price to druggists, comparative U.S. and foreign prices, 1959 32
Table 11. Tranquilizers, comparative U.S. and foreign prices, 1959 33
Table 12. Sparine, comparative U.S. and foreign prices, 1959 34
Table 13. Meprobamate, comparative U.S. and foreign prices, 1959 35
Table 14. Serpasil, comparative U.S. and foreign prices, 1959 36
Table 15. Tolbutamide, comparative U.S. and foreign prices, 1959 37
Table 16. Chlorpropamide, comparative U.S. and foreign prices, 1959 38
Table 17. Penicillin V, Eli Lilly & Co., comparative U.S. and foreign prices, 1959 39
Table 18. Chloromycetin, comparative U.S. and foreign prices, 1959 40
Table 19. Aureomycin, comparative U.S. and foreign prices, 1959 41
Table 20. Tetracycline, comparative U.S. and foreign prices, 1959 42
Miltown costs and profit per tablet 46
Table 21. Bristol Laboratories, Government order, profit and loss 47
Chart 2. Drug company profits compared with all manufacturing, 1959, percent of sales and percent of net worth 49
Table 22A. Fortune ranking of major industrial corporations by net profit after taxes as percent of invested capital, 1958 52
Table 22B. Fortune ranking of major industrial corporations by net profit after taxes as percent of sales, 1958 53
Chart 3. Comparison of rates of return after taxes in selected industries, 1957 54
Chart 4. Rates of return after taxes—identical companies in three industries, and all manufacturing, 1947–59 56
Chart 5. Schering Corp., purchase price, 1952, and profits after taxes, 1952–June 1957 58
Chart 6. Smith Kline & French Laboratories and American Home Products Corp., net worth January 1, 1949, and profits after taxes, 1949–59 59
Chart 7. Carter Products, net worth April 1, 1957, and profits after taxes, 1957–58 to 1959–60 60
Table 23. American Home Products Corp., stock prices and dividends, 1949–59 61
Table 24. Smith Kline & French Laboratories, stock prices and dividends, 11 years, 1949–59 62
Table 25. Carter Products, stock prices and dividends, 1957–59 62
Table 26. Eleven conglomerate drug corporations, profits after taxes as percent of sales; drug operations only versus corporations as a whole minus drug operations, 1958 63
Chart 8. Selected ethical drugs; sales by, and concentration of production of, 15 major drug companies 67
Table 27. Fifty-one ethical drugs; number of companies required to produce total U.S. output 68
Chart 9. Leading antibiotics—1959, percent of market—new prescriptions and hospital purchases 70
Table 28. Corticosteroid plain tablets, leading brands by percent total new prescriptions, January–September 1959 71

Chart 10. Antibiotic prices, broad versus narrow spectrum, 1951–60 82
Chart 11. Penicillin, Lilly, bulk prices compared with prices to druggists, 1948–60 83
Chart 12. Penicillin, wholesale prices by size of company, 1960 84
Table 29. Identity of prices to druggists—Tetracycline, Aureomycin, and Terramycin 85
Table 30. Identity of suggested resale prices to consumers—Tetracycline, Aureomycin, and Terramycin 86
Chart 13. Prednisone, wholesale prices by size of company, 1959 87
Chart 14. Prednisolone, wholesale prices by size of company, 1959 87
Table 31. MMSA procurement of tetracycline, all forms, November 1956–October 1959 91
Chart 15. Schering and Premo, prices on Government bids and on commercial sales, prednisone 93
Chart 16. MMSA drug procurement, relationship of number of bidders to MMSA price expressed as percent of commercial price, 1959 and early 1960 95
Table 32. Number of suppliers compared to lowest MMSA price expressed as percentage of major brand prices to retail druggists, 44 drug products, 1959 and early 1960 96
Table 33. Prices for corticosteroids to consumers and druggists, and computed costs, 1959 103
Table 34. Comparison of average prices in countries without and with patent protection in drug products, spring, 1959 108
Table 35. Comparison of average prices in countries without and with patent protection in drug products patented by U.S. firms and sold abroad by U.S. firms, spring, 1959 109
Table 36. Prices of leading seller in seven industrialized countries grouped according to status of patent protection and price control, spring, 1959 110
Table 37. Comparison of prices of inventing company in home country and of American licensee in United States 113
Table 38. Listing of drugs according to place of discovery 116
Table 39. Examples of foreign discoveries in countries without product patents 119
Research and development: steps, activities, and promises for the future 131
Table 40. Nobel Prize winners in medicine and physiology, 1945–59 132

INDIVIDUAL VIEWS OF SENATOR EVERETT McKINLEY DIRKSEN AND SENATOR ROMAN L. HRUSKA

Preface 263
I. Introduction 264
II. The drug industry 284
III. Administered prices 295
IV. Minority analysis of majority's charges 299
Point 1 299
Point 2 311
Point 3 318
Point 4 333
Point 5 336
Point 6 339
Point 7 348
Point 8 350
Point 9 354
Point 10 356
Point 11 358
V. Conclusions 362

CHARTS, TABLES, AND OTHER EXHIBITS

Chart No. 1. Your babies and children live longer 279
Chart No. 2. Drugs have slashed death rates 280
Table No. 1. Discovery of corticosteroids, United States versus Soviet Union 281
Chart No. 3. Tranquilizing drugs are cutting mental hospital population 282
Chart No. 4. Drug prices held down while business costs soared 286

INDIVIDUAL VIEWS OF SENATOR ALEXANDER WILEY

Views 369

ADMINISTERED PRICES, DRUGS

JUNE 27, 1961.—Ordered to be printed

Mr. KEFAUVER, from the Committee on the Judiciary, submitted the following

REPORT

together with

INDIVIDUAL VIEWS

INTRODUCTION

With this study of ethical or "prescription" drugs, the Subcommittee on Antitrust and Monopoly has now issued its fourth report on administered prices in specific industries. Since the inquiry into administered prices was launched on July 9, 1957, the subcommittee, in addition to issuing these reports, has published 26 volumes of hearings, numbering 16,505 pages. These hearings have been concerned with definitions and concepts, alternative public policies, specific legislation designed to meet the problem, and the nature and behavior of administered prices and related factors in four important industries.

The first industry examined, steel, represents the Nation's basic raw material and has long been referred to as the bellwether of the economy. This was followed by an inquiry into automobiles which is not only the Nation's largest industry but one that exercises a pivotal influence upon the rate of activity in the economy generally. Bread, the "staff of life," is among the Nation's half dozen most important industries and in addition presents the interesting case example of a field in which there is no technological basis whatever for the concentration of sales in the hands of a few large companies but which is nonetheless in a process of change from a market-determined to an administered-price status. The importance of drugs lies not so much in the overall size of the business (which, however, with annual sales of $2.5 billion is hardly negligible) but more in its crucial relationship to health and indeed life itself.

All of these industries share certain characteristics which have come to be associated with administered price industries. They con-

form to the criteria of such industries as set forth by Gardiner C. Means, the originator of the term, in that their prices are "set by administrative action and held constant for a period of time." [1] As the subcommittee stated in its first report on this subject:

> Prices which are "administratively set," "administratively maintained" and are insensitive to changes in their market, e.g., they are maintained when demand falls off through a curtailment in output, are the "administered prices" with which most of the historical literature on the subject is concerned; these are the prices with the potential for inducing economic distress; and these are the prices which are of concern to this subcommittee in its inquiry into "administered prices." [2]

Prices in all of the four fields examined by the subcommittee—the basic materials industry, the consumer durable goods industry, and the two consumer nondurable goods industries—are "set by administrative action," and "held constant for a period of time" and are "maintained when demand falls off through a curtailment of output." In addition they share other common characteristics, such as price identity among the leading producers despite differences in costs and profits, price leadership and price followership, relatively high profit rates as compared to industry generally, relatively low "breakeven points," etc.

Moreover, in each there remains unsolved the problem of how to effect an equitable distribution of productivity gains made possible by scientific progress. Labor lays claim to these gains on the grounds that it is labor which is displaced by technological progress. Management bases its claims on the grounds that the installation of new and better machinery and equipment requires greater profits. But the consumer has a claim, too, on the grounds that there is no purpose to scientific progress in industry unless it ultimately results in lower prices or better products. In the past there has been no pressing need to be concerned with this problem. Under the theory of competition, on which our public policy toward industry has been based, the problem simply does not arise. It is assumed that as soon as any firm in a competitive industry makes an improvement which reduces its costs, it will make a corresponding reduction in price. The other firms will either have to make the improvement themselves or lose their business to the innovator. In any event the pioneering company gains the reward of increased business at least for a time, while the consumer receives the benefit of the innovation in the form of a lower price. But all this presumes the existence of price competition. Where prices are administered and where there is no price competition, the theory is not applicable. The question of how to bring about an equitable distribution of the fruits of scientific progress in such industries is thus essentially a new problem, for which there is no existing public policy.

But while sharing these and similar characteristics with other administered-price industries, the ethical (or "prescription") drug industry has a number of features which tend to make it unique.

[1] 74th Cong., 1st sess., S. Doc. 13, "Industrial Prices and Their Relative Inflexibility," Jan. 17, 1935, p. 10.
[2] 85th Cong., 2d sess., "Administered Prices: Steel," Report of the Subcommittee on Antitrust and Monopoly to the Senate Judiciary Committee, S. Rept. 1387, 1958, p. 6.

For one thing there is its critical bearing on public health and welfare. It is somewhat illogical to presume that drug makers should be primarily concerned with the matter of consumer comfort and pleasure; to a degree not approached by any other industry they deal quite literally in matters of life and death. It is this underlying consideration which is responsible for the fact that most nations (including the majority of the highly developed nations) have traditionally followed a policy of refusing to grant product patents on pharmaceuticals. It is this same consideration which is responsible for the existence of price control on drugs in countries which do not impose such controls on the general run of products.

A second unique characteristic is the difference between buyer and orderer; in the words of Chairman Kefauver, "He who orders does not buy; and he who buys does not order." Or, as one witness observed before the subcommittee, the physician acts as "purchasing agent" for the consumer. Regardless of how well intentioned the physician may be, another party can never be expected to be as interested in price as the individual who has to spend his own money. Once the physician has written his prescription (usually in terms of a brand name), the consumer is limited to the product prescribed under that brand name; he cannot "shop around" for the same product under a different (or no) brand name at a lower price. Hence in ethical drugs the ability of the ordinary consumer to protect himself against the monopoly element inherent in trademarks by being able to choose from a number of competing brands is nonexistent. The consumer is "captive" to a degree not present in any other industry.

The drug industry is also unusual in the extent to which the demand for its products is inelastic, i.e., unresponsive to changes in price. While there are undoubtedly some consumers who simply cannot pay the prices charged and must of necessity go without needed medication, they appear to constitute a small minority. Lower prices of drugs would enable consumers to expand their purchases of other products, but insofar as the drug industry alone is concerned, it appears to be relatively unresponsive to price reductions. This was emphasized by industry spokesmen during the hearings; Mr. Francis C. Brown, president of Schering Corp., testified:

> Unlike consumer marketing, Schering cannot expand its markets by lowering prices. Cortisone proved this. After all, we cannot put two bottles of Schering medicine in every medicine chest where only one is needed, or two people in every hospital bed where only one is sick. Marketing medicine is a far cry from marketing soft drinks or automobiles.[3]

The fact that demand is inelastic means that one of the checks which might serve as a possible constraint upon corporate price policies is absent in ethical drugs. When demand is elastic, prices may become so high as to result in a significant reduction in sales volume. Although other factors such as the importation of foreign cars were at work, the operation of this check undoubtedly had some influence on the automobile industry's recent shift of policy in the direction of product simplification and the offering of lower price models.

[3] Hearings, on Administered Prices in the Drug Industry before the Antitrust and Monopoly Subcommittee, 86th Cong., pt. 14, p. 7854.

These unique characteristics of ethical drugs, plus one other feature, make it both possible and reasonable to consider remedial legislation pertaining to this industry alone, without waiting upon the devising of a satisfactory solution to the problem of administered prices in industry generally. That additional factor is the extremely small size of plant required for economical production. In industries with a small number of very large plants there are reasonable grounds for questioning whether any measures (assuming the existing technology) can be successful in infusing therein a satisfactory degree of price competition. This obstacle is conspicuously not a problem in the ethical drug industry.

Granted the appropriateness of considering legislation relating specifically to the drug industry, there still remains the question of its underlying need. The case that measures are needed to stimulate price competition in this field rests primarily upon the assumption that drug prices are unreasonable. This question is examined in part I of the report, which appraises prices against three standards—direct costs, prices in foreign markets, and profits. The extraordinary margins and profits, as shown in part I, are made possible by a tight control of the market, which is the subject of part II. Where the control is not effective, vigorous price competition tends to prevail, resulting in the type of price behavior usually associated with competitive industries. The control of the market in turn stems principally from three sources of what in economic literature is referred to as "monopoly power." These are the monopoly grant inherent in patents, the exceptionally large expenditures by the major companies on advertising and sales promotion, and the success of the large companies in persuading physicians to write their prescriptions in terms of trade names rather than generic names. Any effort to bring price competition into the ethical drug industry must come to grips with these three sources of monopoly power, which are the subjects, respectively, of parts III, IV, and V of this report.

Reference has already been made to one of the possible constraints upon the pricing policies of corporate management; this is the nature of demand which for ethical drugs is inelastic with respect to price and therefore cannot be expected to operate in any significant degree to protect the public interest. A second possible constraint is of course the existence of price competition.

In competitive industries what would generally be accepted as a reasonable profit rate and a reasonable relationship between costs and prices is brought about automatically by the very force of competition itself. High profit margins in a given competitive industry may be enjoyed temporarily, but since they serve as a lure to attract new resources and new firms which enter the industry and compete on a price basis, excessive prices are soon driven down. Unfortunately, this possible restraint on price has been conspicuous by its absence in the ethical drug industry.

Aside from direct governmental controls, the final possible constraint would be what Prof. Adolf A. Berle has referred to as the "public consensus," a term which he uses to describe a set of ideas which he feels are generally held in our society and by the managers themselves to the effect that certain uses of economic power are improper. If, for example, the public believes that unjustifiably high prices are wrong, the "corporate conscience" possessed by manage-

ments of firms in a concentrated industry would presumably restrain them from using their economic power to establish unreasonably high prices:

> The first sanction enforcing limitations [on the use of economic power] imposed by the public consensus is a lively appreciation of that consensus by corporate managements. This is the reality of the "corporate conscience." Violation leads to loss of prestige, public standing, and popular esteem for the men in the organization itself as loyalty to it is undermined. Deprivation of prestige is one of the very ancient methods by which a society enforces its value systems upon individuals and groups within it. And if loss of prestige does not produce results more acceptable to the community, other and more forceful means of imposing the ideas embodied in the public consensus of community commonly appear.[4]

Surely if enlightened management could be relied upon in any industry to adopt pricing policies which reasonably reconcile management's drive for profit with the public interest, it would presumably be drug manufacturing, owing to its crucial relationship to the public health. If in this industry the "public consensus" has been rather ostentatiously ignored, as might logically be inferred from the data on profits and margins presented in part I, this constraint would appear to be a slender reed on which to rely for the protection of the public interest in administered price industries generally.

[4] Adolf A. Berle, Jr., "Power Without Property," New York: Harcourt, Brace & Co., 1958, p. 91.

PART I

THE REASONABLENESS OF PRICE

The reasonableness of an industry's prices is typically appraised in the light of certain yardsticks or standards, principal among which are (i) unit production costs, (ii) prices in different markets (as in different countries), and (iii) profits.

Chapter 1. The Cost Standard

The most obvious, and in many ways the most satisfactory, standard in appraising the price of a given product is the relationship to price of unit direct costs, sometimes referred to as "production" or "manufacturing" costs. Companies which were represented at the subcommittee's hearings were reluctant to disclose production cost data relating to specific products. It has been possible, nevertheless, to utilize other data to arrive at meaningful estimates of such production costs for a number of the pharmaceutical products which were discussed in the course of the hearings. These estimates further serve to provide some insight into the relationship between production costs and prices generally in the industry.

At the outset it is important to delineate the type of source data employed, the nature and the limitations of the various "computed unit production cost" figures presented by the subcommittee. This is necessary in order both to demonstrate the validity of the subcommittee's approach to the problem and to avoid misunderstandings over what is and is not implied in these figures.

Unit cost estimates have been derived for a number of products sold in tablets or capsules, the dosage forms most commonly purchased by individual consumers. The production process for these forms may be conveniently divided into three stages: production of the active pharmaceutical ingredient in the form of bulk powder, the tableting or encapsulating process (including the addition of any inert ingredients) and, finally, the packaging operations from bottling to packing the bottles into shipping cartons for delivery to wholesalers or retail druggists.

COSTS OF BULK POWDER

The "bulk powder" referred to in this report is the finished drug in bulk powder form; it does not represent raw materials out of which the finished drug is manufactured. This was brought out in the first morning of the drug hearings and was repeatedly emphasized thereafter:

> Dr. Blair. Mr. Chairman, just by way of clarification I want to indicate that the term "raw material" has been used [by the president of Schering] in connection with exhibit 2, which has just been discussed. The prednisolone pur-

chased by Schering from Upjohn was in the form of finished prednisolone itself in bulk form ready for packaging and ready for bottling and labeling.[1]

The costs of the bulk powder in most of the subcommittee's unit production cost estimates for finished products were secured from data submitted by the various manufacturers relating to their purchases and sales to and from other drug companies of the principal drugs in bulk form. The industry exhibits a high degree of manufacturing specialization in the production of active ingredients. The typical company with a broad drug line produces comparatively few of its products completely from the bulk powder to packaged tablets ready for use by consumers. For much of its line the company will purchase bulk drugs from other firms and perform only the tableting, bottling, and packaging operations in its own plant facilities. Thus, the prices reported by the company for its bulk purchases are a conservative measure of the costs of active ingredients in its finished products. It should be clear that this procedure will overstate the actual production costs (often by a substantial margin) since the bulk sale price will presumably include not only all manufacturing costs but also an element of profit. Dr. Upjohn conceded that at the least the bulk sales of prednisolone by his company to Schering were not made at a loss: "I can assure you we probably did not sell it below our bare manufacturing cost. I am sure we sold it at a higher figure than the bare manufacturing cost." [2]

COSTS OF TABLETING, BOTTLING, AND PACKAGING

Cost data for the remaining operations, finishing into tablets or capsules and packaging, were secured from two sources. In the first place, information was sought and received from a number of firms which perform these operations on a contract basis for bulk drug manufacturers and buyers. The charges quoted to the subcommittee varied somewhat from company to company; accordingly, those submitted by Richlyn Laboratories, which were approximately in the

[1] Hearings on Administered Prices in the Drug Industry before the Antitrust and Monopoly Subcommittee, 86th Congress, part 14, p. 7865.
[2] Hearings, pt. 14, p. 8287.

middle of the range of the replies received, were used in the computation of unit production costs for products sold in tablet form.[3]

Richlyn's charges include all of the costs incurred in converting a bulk drug into finished tablets packaged for shipment to the druggist: i.e., the costs of inert binding or filling materials, tableting, bottles, the bottling operation, the application of labels supplied by the customer, shipping cartons and packaging for shipment. In addition, the charges shown cover the cost of assaying both the bulk powder and the finished product as well as Richlyn's own overhead expense. Since a profit margin to Richlyn is also included, it may be presumed that the use of these charges in computing unit production costs will overstate the actual costs of finishing and packaging to integrated drug manufacturers.[4]

The estimate used for tableting charges ($2 per 1,000 for corticosteroids and meprobamate) appears to be quite generous in view of the fact that the fall-winter catalog (1959) of Nysco Laboratories

[3] Richlyn's letter setting forth its statement of charges is as follows:

RICHLYN LABORATORIES,
Philadelphia, Pa., November 8, 1959.

Senator ESTES KEFAUVER,
Chairman, Antitrust and Monopoly Subcommittee,
Committee on the Judiciary, Senate Office Building,
Washington, D.C.

DEAR SENATOR KEFAUVER: Confirming my recent discussion with Dr. E. Wayles Browne, Jr., of your staff, I am happy to state the charges and loss factors that Richlyn Laboratories uses in computing contract tableting charges for steroid hormones.

In lots of 100,000 tablets, we would figure on the following loss factors, and make these charges per thousand tablets:

	Cortisone acetate	Hydrocortisone	Prednisone	Prednisolone
Tablet size.....milligram	25	20	5	5
Wastage.....percent	5	5	5	5
Tableting charge per thousand	$2.00	$2.00	$2.00	$2.00
Bottling:				
100 per bottle	.12	.12	.12	.12
Per thousand	.20	.20	.20	.20

If the lots were 1 million tablets, the wastage and charges could be reduced to the following amounts:

	Cortisone acetate	Hydrocortisone	Prednisone	Prednisolone
Tablet size.....milligram	25	20	5	5
Wastage.....percent	3	3	3	3
Tableting charge per thousand	$1.25	$1.25	$1.25	$1.25
Bottling:				
100 per bottle	.12	.12	.12	.12
Per thousand	.20	.20	.20	.20

These charges and estimates would include assay of bulk powder and of finished tablets, affixing labels, and packing in cardboard cartons for domestic shipment. There would be no other charges for conversion from the pure powder to the appropriate prescription dosage form, in bottle.

Very truly yours,

SIDNEY WEINBERG, *Partner.*

Hearings, pt. 14, pp. 7857-7858.

[4] A second source of information, used in cost estimates for products sold in capsule form, is found in the cost records of the Upjohn Co. for its tetracycline finishing and packaging operations. These records were made public in the proceedings of the Federal Trade Commission *In the matter of American Cyanamid Co. et al.* (FTC docket 7211). As in the case of the Richlyn data, the Upjohn cost figures include the expenses for materials, labor and overhead required to convert bulk powder into tablets packaged for shipment.

lists many types of pills at less than $1 per 1,000 in lots of 50,000, bottles extra.[6]

THE MEANING OF UNIT DIRECT COSTS

From the sources outlined above, it has been possible to arrive at the unit direct or production costs for a number of important corticosteroids, tranquilizers, oral antidiabetics, and antibiotics. Included in such costs are the costs of materials, labor, assay and quality control, and allocable plant overhead, necessary to turn out a finished drug product, packaged for shipment to the wholesaler or retailer. Obviously, they are not the only expenses which are incurred by the manufacturer; thus he must also meet selling and promotional costs, research costs, and general administrative expense. The margin between the production cost of a given product and its selling price should not be confused with net accounting profits. There are good reasons, however, for concentrating upon the relationship between production cost and price in any study relating to specific products.

Direct costs can be linked conceptually to individual products in a firm's line of output; any well-run firm keeps records of its production costs, product by product. While problems do arise in the allocation of indirect *plant* costs, such costs are relatively minor. The important fact is that the costs of materials, labor, supplies, containers, and similar items involved in producing a given amount of a particular product can largely be determined directly from the records of expenditures and without requiring arbitrary allocation. In a multiple-product company, however, other costs generally arise from the functions of the entire organization and can be assigned to specific products only by allocation. General administrative expense, for example, relates to the activities of the company as a whole and can be divided among a company's various products only by some method of allocation. The same is true of selling expense which is generated by the effort to dispose of the company's entire product line, and of research and development expense to find new or improved products which is also the cost of an organizational function. This is not to say that distributions of overhead costs made through allocation are without meaning; they can and do serve useful purposes for the guidance of management. But they can vary in response to the method of allocation used in a way that is not true of direct costs.

Direct costs are in a sense the inescapable costs of manufacturing a given amount of some product, apart from the possibilities inherent in variations in operating efficiency or alternative technological meth-

[6] Some items run below 50 cents per 1,000, of which a few are listed below:

Stock No.	Name and size	Price per 1,000
416	Ammonium chloride, 5 grain	$0.40
212	Amphetamine sulfate, 5 milligram	.45
362	Aspirin, 1 grain flavored and sweetened	.32
245	Desoxyephedrine HCl, 5 milligram, white or yellow	.45
373	Phenobarbital, ⅛ grain	.26
412	Salt 7 grains and dextrose 3 grains	.45
378	Sodium bicarbonate, 5 grain, white and pink	.25
319	Stilbestrol, 0.5 milligram	.45
343	Thyroid, ¼ grain	.45

NOTE.—These quotations are not merely tableting charges; they are the selling prices of the drugs in dosage form.

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ods. Once a company has decided to manufacture a product the magnitude of the direct costs is largely beyond the policy determination of management, except of course that some companies may utilize their resources with greater or less efficiency than others. Obviously, there are certain minimum levels of administrative expense, selling, and research costs which must be met if the firm is to continue in business at all. Nevertheless, as a practical matter the actual amounts spent in these areas by various companies depend largely upon the gross margin earned by each company in its overall operations, i.e., by the difference between inescapable production costs and the company's total sales revenue. The amounts which a company devotes to research, to advertising, and to selling expense are determined by managerial decisions as to that allocation of the gross margin which, in management's judgment, best serves the interest of the company. If the costs which are to be compared with price are to be something more than what management decides they should be, the comparison must be made with direct costs.[6]

The nature of the problem can best be illustrated by the method of allocating indirect costs employed by the American Home Products Corp. This large conglomerate corporation operates subsidiaries producing a variety of goods ranging from ethical drugs to spaghetti dinners, shoe polish, and floor wax. In submitting the breakdown of its sales dollar for its drug operations, American Home Products showed its 1958 administrative costs for the drug divisions, including both division administrative costs and the allocated costs of the parent corporation. In a footnote the company describes its procedure for allocating these latter costs:

> Subsidiaries and divisions of American Home Products Corp. are billed monthly by it for administrative services. The amounts charged to each are based on a formula, the use of which results in an allocation of amounts of certain expenses of American Home Products Corp. [the parent] to each subsidiary and division generally *in the proportion that the estimated annual gross profit of each bears to the total estimated gross profit of all.*[7]

Thus, American Home Products Corp. made a managerial decision, the result of which is that its pharmaceutical products shall have high administrative expenses because the price of its drugs relative to their cost of production is higher than is the case of its other products. That is to say, on drugs indirect costs will be high because the margin above direct costs (or "gross profit," as the company calls it) is high.[8] This illustrates a way in which, even in an industry with inelastic demand, total unit costs (or at least what management

[6] For a discussion of this point see Hearings, pt. 24, p. 14178.

[7] Company reply to subcommittee questionnaire, form I (emphasis added).

[8] The allocation of indirect expense in direct proportion to gross margins may explain in large part why American Home Products' drug divisions with 46 percent of the company's 1958 sales reported administrative expenses which amounted to 62 percent of the total administrative costs shown in the company's consolidated financial report covering its entire business. Insofar as the parent company is concerned, the question of whether or not it costs more to administer its ethical drug business than, say, its Chef Boy-ar-dee spaghetti, Griffin shoe polish or Plastic Wood is immaterial. From an accounting standpoint the company's drug products will carry higher administrative expense per dollar of sales than other products simply because the drug business is the more profitable.

regards them to be) are influenced by price,[9] and how indirect costs tend to be what the company wants them to be.

Other factors being equal, direct or production costs in the drug industry would be expected for economic and social reasons to be relatively smaller than in industry generally. In most industries advertising can be employed for two purposes—to expand the total demand for a product, and to secure for a given firm a greater share of that demand. In the ethical drug industry there is a limitation on the extent to which advertising can be effectively used for the former purpose. The demand for drugs stems from a largely unvarying reality—the real presence of illness and suffering. While those ministering to this reality, the medical profession, can be induced to make greater use of drugs, the underlying reality itself cannot be significantly expanded by advertising and promotional activities, no matter how great. Similarly the drug industry is not faced, as are many industries, with the ability of consumers to prolong their use of an existing product and the consequent need of persuading consumers to turn it in on a new model.

Profits might also be expected to be relatively smaller, since if corporate management does in fact recognize its social responsibilities to the consuming public, this awareness should be uniquely felt in the drug industry. In drugs the consequences of excessive prices are simply on a different plane than in industry generally. The inability to purchase a new car or household appliance may occasion distressing consequences; however, they are not comparable to the consequence of human suffering resulting from the inability to purchase a needed drug or, alternatively, some other necessity, such as food, which is foregone that the drug may be purchased. The existence of a larger margin between direct costs and price in drugs than in other industries is significant in itself; against the background of these considerations it assumes a special force and meaning.

THE TREATMENT OF RESEARCH EXPENDITURES

A matter given particular attention during the hearings is the question of whether unit direct costs computed from bulk sales contracts include research expenses. It appears that few if any of the major drug companies keep records of their research expenditures on a product-by-product basis. Industry accounting practice seems to be such that research costs of a given product can be computed only by allocating a firm's total research expenditure among its various products on some arbitrary basis, e.g., sales. If this is the case, the sales price of a drug in bulk form would presumably include its proportionate share of the company's total research expenditures. Testimony dur-

[9] The influence of price on costs is of course even more direct in industries whose demand is elastic. In its report on the automobile industry the subcommittee noted:

"Thus, it is correct to say, as industry spokesmen have said for many years, that "standard costs" determine prices in any given model year.

"On the other hand, it may also be said that prices help to determine realized, or actual, unit costs (which may be either above or below standard costs). As will be shown in the next chapter, consumer demand for new automobiles is elastic; i.e., any given percentage change in price will create a greater percentage change in the physical volume of sales. This means, simply, that the pricing policies followed by the industry are a potent force in establishing the level of automobile sales. The number of cars sold in any year, as distinct from the industry's standard volume, will determine the actual overhead cost per unit. In brief, when overhead cost is significant and demand is elastic, price, by virtue of its influence on sales volume, will also have an important effect on unit costs." (U.S. Cong., Subcommittee on Antitrust and Monopoly "Study of Administered Prices in the Automobile Industry," 85th Cong., 2d sess., 1958.)

ing the hearings suggests that research expenditures are in fact handled in this manner:

> Mr. DIXON. You had research expenditures on the bulk product that you sold to Schering, did you not?
>
> Dr. UPJOHN.[10] Well, we had research expense on the product; yes, sir.
>
> Senator KEFAUVER. I would assume that part of your manufacturing cost, your research cost and profit and what-not, would be included in the $2.37 figure, which is lower now.[11]
>
> * * * * * * *
>
> Dr. BLAIR. It [the estimate of direct costs] is certainly exclusive of selling and distribution cost, and of profit. It includes, though, whatever research costs and administrative costs are incorporated in the bulk price of the product itself.
>
> Dr. UPJOHN. Perhaps I should interrupt there to say that ordinarily the manufacturing cost is simply the bare ingredients and labor and factory overhead.
>
> Dr. BLAIR. This is packaged in bottles ready for shipment to the druggists.
>
> Dr. UPJOHN. But does not include research costs, is what I am trying to say.
>
> Senator KEFAUVER. No, sir; it would only include that part of the research cost that had gone into the production of bulk material.
>
> Dr. UPJOHN. But I do not think that that is the way they figure it. Oh, I see what you mean—yes.
>
> Dr. BLAIR. What it means——
>
> Dr. UPJOHN. Excuse me. I think perhaps I see what you mean.[12]

Actually, this is more a technicality than a matter of substance insofar as interindustry comparisons of margins are concerned. Even under the liberal interpretation of "research" allowed by the Internal Revenue Service, research costs of the 20 major drug companies represent only 6.4 percent of the total sales dollar. As was brought out in the hearings:

> Dr. BLAIR. In the annual statement of Schering, to which Mr. Brown [13] has just made reference, there is set forth the amount which Schering spends on research expenses and the amount which it obtains from net sales. Its research expenses in the year 1958 totaled $6,403,000. Its total net sales were $75,180,000. That is a relationship, Senator, of research expenses to sales of 8.5 percent.
>
> Now if Schering's price in this particular product to the druggist were reduced by 8.5 percent, that is if there were in the price to the druggist no research expense, calculating the amount of that research expense on the basis of the relationship of your research expense to your total sales for your

[10] Dr. E. Gifford Upjohn, president, The Upjohn Co.
[11] Hearings, pt. 14, p. 8287.
[12] Hearings, pt. 14, p. 8325.
[13] Francis Brown, president, Schering Corp.

corporation as a whole, the effect would be to reduce 17.9 cents per tablet by 8.5 percent, which would bring it down to 16.4 cents, and the effect on the price to the consumer would be to reduce the list price from 29.8 cents to 27.3 cents.

Hence, even after allowing for research in this manner, we would have a comparison of from 1.6 to 16.4, and then to 27.3 [14]

THE MEANING OF "GROSS PROFIT" AND "MARGIN"

Throughout its inquiry into the drug industry the term "margin" was used by the subcommittee and its staff to denote the difference between unit production costs and the manufacturer's price. Ironically, the term customarily employed for this purpose by the industry, itself, happens to be "gross profit." The following extract from a licensing agreement in which the licensee agreed to pay royalties based upon "gross profit" is typical:

> As used herein, the term *"gross profit"* shall mean the profit remaining after deducting from the aggregate net sales value the *factory cost of production* applicable to such sales, determined in accordance with generally accepted accounting practices. Such factory cost of production shall include the cost of labor, materials, supplies, factory overhead, and depreciation (at reasonable rates) of plant investment, but shall not include such items as sales, advertising, research and general and administrative expenses, and taxes (other than direct property taxes allocable to production of the product in question).[15]

Indeed on occasion the industry will omit the qualifying term, "gross," as in advertisements in which manufacturers urge retailers to handle their product because of its profitability. A typical case in point is an advertisement by Merck & Co. for its reducing aid, Melozets, on which appears the following box insert: [16]

YOUR PROFIT PICTURE		
Your cost per dozen	$9. 90	
Your selling price (at $1.35)	16. 20	
Your profit	6. 30	(39%)

During the hearings the Schering Corp. was particularly concerned over the possibility that the difference between direct costs and price might be interpreted as constituting only profits. Yet in promoting the sale of its product to druggists, Schering makes the very use of the term which it felt might be mistakenly inferred from the subcom-

[14] Hearings, pt. 14, p. 7860.
[15] From the agreement of Sept. 25, 1956, between American Cyanamid Co. and Société des Usines Chimiques Rhone-Poulenc, hearings, pt. 25, pp. 14275ff. (Italics added.)
[16] American Druggist, Sept. 19, 1960.

mittee's presentation. For example, an advertisement for Coricidin contains the following box insert:

Floor display No. 9960:	
Your profit	$83.46
Your cost	99.60
Retail value	183.06 (46%)

Similarly, CIBA in advertising a special "Fall deal" for its nasal spray, Privine, tells the druggist that "you receive 72 units" but "you pay for 66 units," making "your profit $30.96."

In selling Lomotil, "a new therapeutic entity for diarrhea," G. D. Searle's advertisement contains the following: [17]

RFT		
Your cost	Minimum price	Your profit
$4.20	$7.00	$2.80

This use of the term "profit," when they are attempting to interest retailers in handling their products, is commonplace among the drug companies. Indeed, all of the examples, except the first, were taken from just one issue of the American Druggist.

The drug companies would undoubtedly hasten to deny any inference that the figures shown in the advertisements labeled "your profit," are intended to represent the retailer's *net* profit; that is, profits after all expenses and taxes. However, it was to avoid misleading inferences of this very type that the subcommittee and its staff deliberately abstained from using in this context the term "gross profit," to say nothing of "profit". The use of the industry's own terminology instead of the more innocuous and objective term "margin," can only lead to confusion and unwarranted attacks upon the industry itself.

"PERCENTAGE MARGIN" VERSUS "PERCENTAGE MARKUP"

The difference between price and direct costs can be meaningfully measured in terms of either costs or price. If the base or denominator of the division is the price, what is being determined is the relative importance of costs as a component of price, and the appropriate term is "percentage margin." But if the base or denominator is the cost figure, what is being determined is the relative extent to which price exceeds costs in terms of costs, and the appropriate term is "percentage markup above costs."

Both types of measurements have their legitimate uses. From a public relations point of view the former has the compelling advantage to industry that the percentage figure can never exceed 100. An analogous case in point is the long-time effort of proponents of so-

[17] American Druggist, Nov. 14, 1960.

called fair-trade resale price maintenance to have all measurements between costs and price expressed on this basis; for example, if a retailer purchases goods for $60 and sells them for $100, the figure invariably used by the trade to denote the difference is 40 percent. And there is inherently nothing wrong with such a figure as long as its meaning is understood, which is that, of the price paid by the consumer, the retailer's share is 40 percent.

But it is equally proper to express the difference in terms of the retailer's cost, which in the above example is $60, yielding a percentage markup above costs of 66 percent. What this means is that the retailer has priced the merchandise two-thirds above its cost to him. What is most improper is to divide the margin by the selling price and then to state or imply that what has been measured is the percentage markup over costs.

While placing primary reliance on the former measure, the industry itself also uses the percentage markup above costs as an operating tool. This is evident from certain subpenaed material in the subcommittee's files which was not introduced into the record because of objections that the actual figures contained therein constituted trade secrets.

COMPUTED UNIT PRODUCTION COSTS: CORTICOSTEROIDS

The first of the corticosteroid computations, exhibit No. 1 in the hearings record, related to prednisolone sold by Schering under the brand name "Meticortelone." The computed direct or production cost, which was in the nature of a maximum estimate, comes to $1.57 for a bottle of 100 tablets, sold by Schering to the retail druggists for $17.90 and by the druggist to the consumer for $29.83.[18]

TABLE 1.—*Prednisolone—5-milligram tablets*

[Computed production cost based on bulk price transaction and contract processing charges]

	Per thousand
1. Bulk price at which Upjohn sold to Schering in 1958 at $2.37 per gram, material for 1,000 tablets, 5×$2.37 [1]	$11.85
2. Allowance for wastage (5 percent)	.62
3. Tableting charge	2.00
4. Bottling charge (10 bottles of 100 tablets each)	1.20
Total	15.67

COMPARISON BETWEEN COMPUTED PRODUCTION COST AND ACTUAL PRICES

	Per 100	Per tablet
		Cents
Computed production cost, ex selling and distribution costs	$1.57	1.6
Actual prices: [2]		
To wholesalers	14.32	14.3
To druggists	17.90	17.9
To consumer (list)	29.83	29.8

[1] As reported to the subcommittee by Upjohn and by Schering.

[2] Upjohn (Delta-Cortef) from catelog; Merck (Hydeltra), Pfizer (Sterane), Schering (Meticortelone), Parke, Davis (Paracortol) from 1959-60 edition American Druggist Blue Book (Parke, Davis consumer prices 1 cent higher per bottle than others.)

[18] Hearings, pt. 14, p. 7856.

The same product is sold under a variety of other brand names by Upjohn (Delta-Cortef), Merck (Hydeltra), Pfizer (Sterane) and Parke, Davis (Paracortol), all at the same wholesale and suggested retail prices shown above, except that Parke, Davis's Paracortol carries a suggested retail price 1 cent above the $29.83 of its competitors.[19]

The pattern exhibited in the case of prednisone is almost identical to that for prednisolone, even to selling prices. For prednisone, however, computed unit production cost was calculated for bottles containing 1,000 tablets and on the assumption of a larger production run (1 million rather than 100,000 tablets); thus tableting and bottling charges per thousand tablets are lower than in the prednisolone example. The bulk powder price is that at which sales were made by Syntex Corp. in late 1959.

TABLE 2.—*Prednisone—5 milligram tablets* [1]

[Computed production cost based on bulk price transaction and contract processing charges]

[1,000,000 tablet order]	Per thousand
1. Bulk price at which Syntex sold, 3d quarter 1959;[2] $2.36 per gram material for 1,000 tablets, 5×$2.36	$11.80
2. Allowance for wastage (3 percent)	.36
3. Tableting charge	1.25
4. Bottling charge (1,000 tablets per bottle)	.20
Total	13.61
COMPARISON BETWEEN COMPUTED PRODUCTION COST AND ACTUAL PRICES	
Computed production cost, ex selling and distribution costs	13.61
Actual prices: [3]	
To wholesalers	136.00
To druggists	170.00
To consumer (list)	283.33

[1] Hearings, pt. 14, p. 8042.
[2] As reported to the subcommittee by Syntex Corp.
[3] Upjohn (Deltasone) from catalog; Merck (Deltra); Schering (Meticorten); Parke, Davis (Paracort) from 1959–60 edition, American Druggist blue book. (Parke, Davis consumer prices 1 cent higher per bottle than others.)

The 1,000-tablet bottle is offered to druggists by Merck, Upjohn, Schering, and Parke, Davis at a price of $170; a consumer who bought in this quantity would pay a suggested retail price of $283. Yet, it is clear that the drug can be produced, tableted, bottled, and packed for shipment to the druggist for no more than $13.61, leaving a margin of 90 percent of price to wholesalers for the manufacturer for his selling, administrative, and other nonproduction costs and profit.

The estimate of production costs of around 1.5 cents per tablet was supported by information indicating that the same products were being sold to retailers under their generic names for 1.7 cents for

[19] The price of bulk prednisolone has been falling since the date of the 1958 Upjohn-Schering sale used in the example above. According to Dr. E. Gifford Upjohn, his company was selling in bulk at $2.22 per gram by the end of 1959. On this basis the computed production cost for a bottle of 100 tablets would be less than $1.50. (Hearings, pt. 15, p. 8879.)

prednisone and 1.9 cents for prednisolone.[20] Here is a price to the druggist per thousand tablets which is not far above the price per hundred for the major brands.[21]

On a per tablet basis, the consumer using either prednisone or prednisolone bearing the brand name of one of the major pharmaceutical firms will pay approximately 30 cents for a pill which is sold to the druggist for some 18 cents and which can be produced for 1.5 cents or less. An arthritic patient will frequently remain for long periods on a dosage of about 100 of the 5-milligram tablets a month; thus he pays $30 a month for his medicine, for which his druggist paid around $18 but which cost around $1.50 to produce.

COMPUTED UNIT PRODUCTION COSTS: TRANQUILIZERS

The relationship between prices and production costs among the major brands of tranquilizers appears to bear many of the characteristics exhibited in corticosteroids. Computed unit production costs for meprobamate, one of the most widely used "mild" tranquilizers, may be taken as an example.

The patent rights to meprobamate were assigned to Carter Products, Inc., which sells the drug in finished form under the trademark "Miltown." Carter has licensed one other firm, American Home Products Corp., to sell finished meprobamate in the United States, and only two companies, American Home Products and American Cyanamid, have been licensed to sell throughout the world. American Home Products offers meprobamate through its Wyeth division under the trademark "Equanil." Wyeth's production role is confined to finishing and packaging, since the Carter license does not permit American Home Products to manufacture meprobamate itself; Wyeth's bulk meprobamate must be purchased from Carter to the extent that Carter is willing to supply it, with any additional amounts to be purchased from sources approved by Carter.

Interestingly enough, Carter does not manufacture meprobamate either. Bulk production is subcontracted to a number of other firms (seven in 1958), none of which is licensed to sell meprobamate in finished form.

Unit production costs were computed both for Carter's Miltown and for Wyeth's Equanil tablets containing 400 milligrams of meprobamate. As in the case of other similar computations, production

[20] The president of a Washington, D.C., retail drug chain submitted the following letter:

DART DISTRIBUTING CORP.,
Washington, D.C., January 4, 1960.

Senator ESTES KEFAUVER,
Chairman, Subcommittee on Antitrust and Monopoly,
Senate Office Building, Washington, D.C.

DEAR SENATOR KEFAUVER: You may be interested in knowing that while you were holding hearings early in December 1959 on the steroid hormone industry, quotations were being published for prednisone and prednisolone at considerably lower prices than those you brought out in the hearings.

There was offered to us, prednisone, 5-milligram tablets at $1.75 per 100, and $17 per 1,000; and prednisolone, 5-milligram tablets at $1.95 per 100 and $19 per 1,000.

The company offering these two items at the above prices has always been a firstline company, and all merchandise of the best quality. We have ordered both items in 1,000-tablet sizes, and are awaiting receipt of the shipment.

Yours very truly,

HERBERT H. HAFT,
President.

(Pt 17, p. 9622)

[21] The example given is not exceptional. The 1961 Drug Topics Red Book lists 10 firms which offer prednisolone to the druggist at prices of $3 or less per bottle of 100, and no fewer than 20 firms offering prednisone in this price range.

costs include all of the costs of bulk powder, finishing, bottling, and packaging for shipment, but exclude selling and distribution costs.

TABLE 3.—*Meprobamate—400-milligram tablets* [1]

[Computed production cost based on bulk price transactions and contract processing charges (exclusive of selling and distribution costs) (100,000-tablet order)

	Per 1,000 tablets—	
	To Carter "Miltown"	To Wyeth "Equanil"
Material, 400 grams:		
At average cost to Carter in December 1958 of $4.35 per pound [2]	$3.84	
At price Wyeth pays Carter of $10 per pound [2]		$8.82
Wastage, at 2 percent	.08	.18
Tableting charge	2.00	2.00
Bottling charge (20 bottles of 50 tablets each)	1.40	1.40
Royalty to Carter at 5 percent of selling price		2.60
Total computed production cost per thousand	7.32	15.00

COMPARISON BETWEEN COMPUTED PRODUCTION COST AND ACTUAL PRICE

	Per 1,000	Per tablet
		Cents
Computed production cost, exclusive of selling and distribution costs:		
Carter	$7.32	0.7
Wyeth	15.00	1.5
Actual prices, both brands:		
To wholesaler at $2.60 for 50	52.00	5.2
To druggist at $3.25 for 50	65.00	6.5
To consumer at $5.42 for 50	108.40	10.8

[1] Hearings, pt. 16, p. 9157.
[2] As reported to subcommittee by Carter Products, Inc.

Source of prices: 1959–60 American Druggist Blue Book.

The table above clearly illustrates Wyeth's cost disadvantage with respect to Carter. Carter, buying from its subcontractors who are barred from entering the finished product market, secured its meprobamate at an average cost in December 1958 of $4.35 per pound. Wyeth, which had to secure bulk meprobamate from its only domestic competitor in the finished product market, had to pay Carter's price of $10 per pound. As a result, Carter could manufacture and package its Miltown tablets at a cost of 0.7 cent per tablet, while Wyeth's costs were twice as great, 1.5 cents per tablet. In either case, however, there appear to be substantial margins between total production costs and the selling prices of 5.2 cents to wholesaler, 6.5 cents to retailers, and nearly 11 cents to the ultimate buyer.

It should be noted that the subcommittee's estimates of production costs were fully confirmed by Mr. Henry H. Hoyt, president of Carter Products, and by Mr. Alvin G. Brush, chairman of the board of American Home Products.

Mr. Hoyt, appearing before the subcommittee, offered in evidence (exhibit No. 157) a breakdown of Miltown price and costs per tablet based upon his company's records.[22] His price was 5.1 cents, rather than the subcommittee figure of 5.2 cents which made no allowance

[22] Hearings, pt. 16, p. 9161.

for trade discounts. His actual manufacturing cost of 0.7 cent per tablet was identical to the estimate of the subcommittee staff:

> Mr. DIXON. Mr. Hoyt, from the table that you have sent to us, exhibit 157, you say that your manufacturing costs are seven-tenths of a cent per tablet.
>
> Mr. HOYT. Practically what you have on your table.[23]

Mr. Brush, appearing for American Home Products, also agreed that the subcommittee's estimates were accurate:

> Senator KEFAUVER. We have been talking particularly about Miltown, Equanil, and Sparine. Can you break down your cost of producing either one of those?
>
> Mr. BRUSH. I think you have done an excellent job on Equanil.
>
> Senator KEFAUVER. As taken apart from the rest of your drugs.
>
> Mr. BRUSH. I think that the figures Dr. Blair worked out on Equanil are approximately correct.[24]

COMPUTED UNIT PRODUCTION COSTS: ORINASE

One of the most dramatic pharmaceutical advances of recent years has been the development of several oral antidiabetic drugs, which relieve certain types of diabetic patients from the necessity of daily intravenous insulin injections. The largest selling antidiabetic drug is tolbutamide, developed in Germany by Farbwerke Hoechst, A.G., and produced and marketed in the United States by the Upjohn Co. under the trade name "Orinase." For part of its supply Upjohn secures the active drug in bulk from a U.S. subsidiary of Hoechst, on which it performs only the tableting, packaging, and marketing functions.

Production costs for the principal dosage form are presented in the following table. Again, it must be emphasized that the subcommittee's estimate, based upon the costs of purchased bulk tolbutamide and the tableting, bottling, and packing charges of a reliable contractor, is conservative and that Upjohn's actual costs would be, if anything, somewhat less.

[23] Hearings, pt. 16, p. 9162.
[24] Hearings, pt. 16, p. 9301.

TABLE 4.—*Orinase—0.5-gram tablets* [1]

[Computed production cost based on bulk price transactions and contract processing charges (exclusive of selling and distribution costs) (1,000,000 tablet order)]

	Per thousand tablets
Material, 500 grams at average price Upjohn paid Hoechst Chemical Corp. in 1958 of $3.08 per pound [2]	$3. 39
Wastage, at 2 percent	. 07
Tableting charge	2. 00
Bottling charge (20 bottles of 50 tablets each)	1. 40
Total production cost per 1,000 tablets	6. 86
Royalty to Hoechst at 7½ percent of selling price [3]	6. 25
Total production cost and royalty	13. 11

COMPARISON BETWEEN COMPUTED PRODUCTION COST AND ACTUAL PRICE

	Per thousand tablets	Per tablet (cents)
Computed production cost, exclusive of royalty, selling and distribution costs	$6.86	0.7
Computed production cost, including royalty	13.11	1.3
Actual prices:		
To wholesaler and to druggist buying direct from Upjohn at $4.17 for 50 tablets [4]	83.40	8.3
To consumer, paying list price at $6.95 for 50	139.00	13.9

[1] Hearings, pt. 20, p. 11045.
[2] As reported to the subcommittee by Upjohn Co.
[3] Set forth in license agreement dated Aug. 6, 1956, between the Upjohn Co. and Farbwerke Hoechst, A.G.
[4] Direct buying retailers who agree to purchase $100 worth of goods per year are granted the same discount as wholesalers by Upjohn Co.

Source of prices: The Upjohn Co. catalog.

The total production cost for 1,000 tablets, in bottles of 50, is estimated at $13.11; it should be noted that nearly half of this amount (or $6.25) is accounted for by the royalty paid to Hoechst rather than the actual manufacturing costs of Upjohn. A retail druggist who does a large enough volume of business to buy direct from Upjohn can secure the 1,000 tablets for $83.40, while his customers will pay $139 for them.

Dr. E. Gifford Upjohn did not deny the validity of this estimate, although he did insist that the price of Orinase to consumers is a reasonable one: "After all it is a reasonable price. It is just a matter of pennies a day." [25] As the chairman of the subcommittee pointed out, even pennies a day are important to patients on limited incomes, especially since Orinase is not used to treat an occasional short illness but must be taken by the patient every day of his life. According to Upjohn spokesmen, more than half a million diabetic patients are on daily maintenance dosages of Orinase, with an average dosage of three tablets (1.5 grams) per day.[26] At 90 tablets a month, therefore, the typical patient must pay, month after month, about $12.50 for medication which costs Upjohn no more than $1.18 to produce, including the company's substantial royalty to Hoechst. On an annual basis, "pennies a day" comes to $150 a year for an amount of the drug which is manufactured at a total cost of about $14.

[25] Hearings, pt. 20, p. 11079.
[26] Ibid., pp. 11016, 11080.

COMPUTED UNIT PRODUCTION COSTS: TETRACYCLINE

Among the broad spectrum antibiotics, unit production costs were computed for tetracycline capsules manufactured by Bristol and Upjohn. As in other estimates, the costs were derived by the addition of encapsulation and packaging costs to the price paid for the bulk drug.

Bulk tetracycline is produced in the United States by three firms, Bristol, American Cyanamid (Lederle Division) and Chas. Pfizer; in addition two other firms, Squibb and Upjohn, have been licensed by Bristol to sell finished tetracycline products made from bulk powder purchased from the latter company. Although Bristol Laboratories[27] is the smallest of the firms in the group, it is the largest producer of bulk tetracycline. The company's 1958 production of 47,500 kilograms amounted to 36 percent of the industry's total production, compared to American Cyanamid with 33 percent of the total and Pfizer with 31 percent.[28]

In the absence of direct information on bulk tetracycline production costs, it was possible to arrive at an absolute maximum figure per gram by using (a) Bristol's 1958 production of tetracycline as reported to the subcommittee and (b) cost data for Bristol Laboratories' operations as a whole.

A summary of Bristol's production costs for the company's entire business in 1958 is reproduced below, taken from Form I of the subcommittee's questionnaire:

Bristol Laboratories cost of goods sold, 1958

	Thousands
Finished goods opening inventory	$642
Purchases for resale	7
Production costs	4,436
Total goods available	5,085
Less finished goods closing inventory	610
Cost of goods sold	4,475

A maximum unit production cost figure can be derived by assuming that all of Bristol's cost of goods sold was applied only to the production of bulk tetracycline—that is, that the company paid nothing for its substantial purchases of other bulk drugs such as dihydrostreptomycin, that it cost nothing to manufacture Bristol's own output of penicillin, and that the company's drug finishing and packaging operations were somehow performed on a free basis.

Under such assumptions, all of Bristol's production costs divided by the output of tetracycline alone would come to only 9.4 cents a gram in 1958. This figure was used to represent the cost of bulk tetracycline in finished products manufactured by Bristol. But it cannot be emphasized too strongly that this is a maximum in the

[27] References to Bristol in the following material apply only to the operations of Bristol Laboratories, Inc., a wholly owned ethical drug subsidiary of Bristol-Myers Co. Bristol Laboratories' 1958 sales amounted to $19.2 million, while the consolidated sales reported by the parent company were $113.9 million (largely in the proprietary drug and cosmetic fields).

[28] Hearings, pt. 25, p. 15301.

sense that it could not possibly have cost Bristol as much as 9.4 cents a gram to produce tetracycline in 1958.[29]

The cost of finishing and packaging tetracycline in its most widely sold dosage form in 1958, tetracycline phosphate complex capsules (in bottles of 100, each capsule containing tetracycline phosphate complex equivalent to 250 mgm. of tetracycline hydrochloride) was taken from Upjohn documents made public in the Federal Trade Commission's case against American Cyanamid et al.[30] The estimates show the breakdown of all expenses which must be added to the bulk powder cost in order to arrive at a finished goods production cost—that is, capsules and other excipient materials, production labor and overhead, cost of assays by the company and the Food and Drug Administration, packaging materials (bottles, labels, shipping cartons, et cetera), and packaging labor and overhead. Upjohn's estimated cost for converting bulk tetracycline phosphate into bottled and packaged 250 mgm. capsules was 40.1 cents per bottle of 100 capsules.[31]

Estimated unit production costs for tetracycline phosphate capsules and the relationship of costs to prices are shown in tables 5 and 6. For purposes of comparison, costs are presented both for Bristol, the Nation's largest bulk tetracycline producer, and for Upjohn, which buys its bulk tetracycline from Bristol.

In the case of Upjohn, the total cost per bottle of 100 capsules ($9.30, including the royalty of 51 cents) was taken from Upjohn's own cost analysis of May 1, 1958.[32] The cost of tetracycline phosphate per bottle was derived by subtracting the royalty and finishing and packaging costs from the known total cost figure. Bristol's tetracycline cost is based upon the 9.4 cents per gram maximum estimate above. It has been assumed that Bristol's finishing and packaging costs are no greater than those of Upjohn. Bristol's royalties, however, are more than four times the average per bottle paid by Upjohn and serve to offset a significant portion of Bristol's production cost advantage over the latter company.[33]

[29] While the degree to which this figure overstates the actual cost of producing tetracycline is unknown, the approximate proportion of tetracycline sales (in both bulk and finished forms) to Bristol's total sales suggests that the overstatement is substantial. In response to a question as to the percentage of tetracycline sales to total sales in 1958, Dr. Philip Bowman, president of Bristol Laboratories, replied, "I will say in general it is between 50 and 75 percent." (Hearings, pt. 24, p. 13864.) In short, material and production costs for something between one-fourth and one-half of Bristol's entire sales volume and the costs of converting bulk tetracycline into Bristol's own finished products have been included in the cost of producing bulk tetracycline to arrive at the figure of 9.4 cents a gram.

[30] FTC docket 7211.

[31] Hearings, pt. 25, p. 15302. In applying Upjohn's figure to other companies, it must be conceded that there may be differences in wage rates and overhead from company to company. 25 cents of Upjohn's total estimate of 40.1 cents, however, are accounted for by the cost of purchased capsules (16.9 cents), FDA assay (2 cents) and excipient and packaging materials (6.1 cents), while only 15.1 cents arises from labor and overhead costs generated within the company. Thus, even sizable differences from company to company in internal wage rates and overhead would have a relatively minor effect on total finishing and packaging costs.

[32] FTC docket 7211, exhibit CX-438. This document does not show the detailed breakdown of bulk powder, production, and assay costs found in the original "new product estimate" of January 29, 1957. It is for this reason that cost details from the new product estimate were subtracted from the actual total cost as of May 1, 1958, in order to arrive at an estimate of Upjohn's tetracycline phospbate cost per bottle of capsules.

[33] Tetracycline product royalty obligations of Bristol, Squibb, and Upjohn to Pfizer amount to 3.5 percent of the net sales value of finished products. In return for contracts to serve as exclusive bulk supplier to Squibb and Upjohn, however, Bristol agreed to pay one-half of the royalties due from these companies to Pfizer. Bristol itself, of course, pays the full 3.5 percent on its own products. In addition, Bristol pays a 5 percent royalty to American Cyanamid under a license to utilize a fermentation process covered by the latter company's Aureomycin process patent.

CHART 1

TETRACYCLINE CAPSULES

PRICE TO DRUGGISTS AND EST. PRODUCTION COSTS, 1958

100 Capsules, 250 mgm

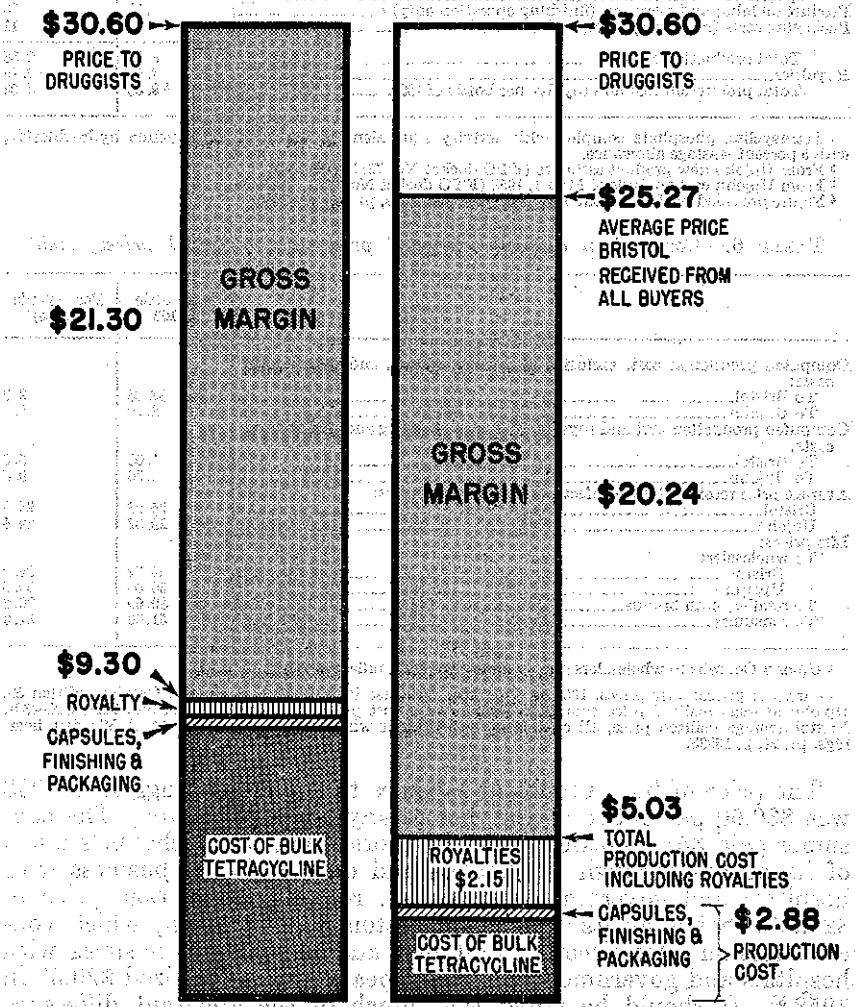


TABLE 5.—*Tetracycline phosphate complex capsules—250 mgm*

[Computed production cost (exclusive of selling and distribution costs) per bottle of 100 capsules, 1958]

	Per bottle of 100 capsules	
	To Upjohn, Panmycin phosphate	To Bristol, Tetrex
Material:		
Tetracycline: [1]		
Purchased by Upjohn	$8.38	
Produced by Bristol		$2.47
Capsules and other material [2]	.17	.17
Production labor and overhead (finishing operation only) [3]	.13	.13
Packaging costs (materials, labor, and overhead) [3]	.11	.11
Total production cost	8.79	2.88
Royalties	[3] .51	[4] 2.15
Total production cost and royalty per bottle of 100	[3] 9.30	5.03

[1] Tetracycline phosphate complex with activity equivalent to 250 mgm. tetracycline hydrochloride, with 5 percent wastage allowance.
[2] From Upjohn new product estimate (FTC docket No. 7211, CX-450).
[3] From Upjohn cost analysis of May 1, 1958 (FTC docket No. 7211, CX-438).
[4] Figure provided by Bristol Laboratories, Inc. (hearings, pt. 24, p. 13884).

TABLE 6.—*Comparison between computed production cost and prices, 1958*

	Per bottle of 100	Per capsule (cents)
Computed production cost, exclusive of royalty, selling, and distribution costs:		
To Bristol	$2.88	2.9
To Upjohn	8.79	8.8
Computed production cost and royalty, exclusive of selling and distribution costs:		
To Bristol	5.03	5.0
To Upjohn	9.30	9.3
Average price received by manufacturer from all customers:		
Bristol	25.27	25.3
Upjohn	29.37	29.4
List prices:		
To wholesaler:		
Bristol	24.22	24.2
Upjohn [1]	30.60	30.6
To retailer, both brands	30.60	30.6
To consumer	51.00	51.0

[1] Upjohn Co. sells to wholesalers and to direct-dealing retailers at the same price.

Sources of prices: List prices, 1958-59 American Druggist Blue Book and Upjohn Catalog, edition 59. Upjohn average realized price computed from royalty cost per bottle (FTC docket No. 7211, CX-438). Bristol average realized price, all customers, and price to wholesalers, provided by M. S. Weeden, hearings, pt. 24, p. 13883.

The price of both brands of capsules to the retail druggist in 1958 was $30.60 per bottle of 100, before any trade discounts. The consumer paid $51 a bottle. Bristol Laboratories, which channels much of its output through wholesalers and does a sizable business with hospitals and governmental agencies, realized an average price of $25.27 a bottle on its sales to all customers.[34] Upjohn, which concentrates on sales directly to retailers and had a minor business with hospitals and governmental units, appears to have realized $29.37 in 1958.[35] It should be noted that much of the apparent difference between the Upjohn and the Bristol average price arises simply from Upjohn's willingness to carry out the wholesaling function itself.

[34] Testimony of Mr. Morris Weeden, treasurer, Bristol Laboratories, hearings, pt. 24, p. 13883.
[35] The Upjohn average realized price was computed from Upjohn's royalty cost per bottle (from cost analysis of May 1, 1958). The company was offered an opportunity to comment on the subcommittee's analysis, by letter of Sept. 27, 1960; no reply has been received by the subcommittee.

In any case, it is clear that the capsule for which the customer paid 51 cents and the retail druggist 31 cents cost Upjohn only 9.3 cents to produce, including royalties but excluding selling and distribution costs, while the same capsule produced by Bristol cost no more than 5 cents, with more than 40 percent of this cost representing royalties paid by Bristol to Pfizer and American Cyanamid.

While these royalties are properly included in an analysis of the costs of a single company which makes the payments, nonetheless they should not be included in any estimate of production costs on an industry basis, since they represent payments by one tetracycline producer to other producers of tetracycline. Thus, it may be concluded that the cost of production of the capsules described, for the industry, comes to less than 3 cents per capsule, or less than 10 percent of the list price to retail druggists in 1958.

COMPARISONS WITH OTHER INDUSTRIES

How do percentage relationships of the margin (over direct costs) to prices in the drug industry compare with the relationships in other industries? Taking from the above examples the data applicable to the actual producer of the bulk drug (including Carter), and using where it is available the manufacturer's average realized price, and where it is not, the price to wholesalers,[36] the margin varies from 80.1 percent in the case of Bristol's Tetrex (tetracycline) to 88.8 percent in the case of Schering's Meticortelone (prednisolone). Ideally the best method of making interindustry comparisons would be to contrast the percentage margins for specific drug products with comparable data for specific products of other industries. As was recently observed by a leading spokesman for the drug trade, Dr. William S. Apple, secretary of the American Pharmaceutical Association:

> Viewed through the eyes of the economist or analyzed in marketing terms, the drugs utilized in prescriptions are not unlike other commodities. The production, distribution and pricing policies of the pharmaceutical industry are subject to comparison with other industries dealing in consumer goods. To be sure, there are some distribution restrictions imposed by Federal and State laws and regulations and certain self-imposed advertising conventions, but basically the commodity concept prevails.[37]

The ability to make such comparisons, however, is severely restricted by the paucity of unit cost figures for other industries. Insofar as recent years are concerned, unit cost data are known to be publicly available for only two other industries—automobiles (1957) and bread (1958); in both cases the figures were compiled by this subcommittee. As part of the inquiry into the bread industry, the subcommittee sent out to the largest bakery companies special questionnaires,

[36] The price to wholesalers is usually 15–20 percent below the price to retailers, reflecting a usual trade discount. It happens that there is very little difference between the average realized price and the price to wholesalers. Inasmuch as the realization figures include sales to Federal procurement agencies, State and private hospitals, and other large buyers, at prices usually below, and never above, the price to the wholesaler, the similarity between these two types of prices suggests that a major portion of the sales to the trade are made directly to retailers.

[37] Address by William S. Apple, secretary of the American Pharmaceutical Association to the eastern regional meeting, Pharmaceutical Manufacturers Association, "Prescription and Interdependence," December 12, 1960.

which were largely based upon forms previously used for the same purpose by the Department of Agriculture; the completed schedules were returned to the Department of Agriculture, where they were edited, processed and totaled into aggregates by groups of companies.[38] For the four largest bread-baking companies, the margin between unit direct cost and the manufacturers' average realized price was 29.6 percent.

Partly from information submitted by the company and partly from published data, it was possible to construct a unit cost breakdown for the average car manufactured in 1957 by General Motors Corp.; this cost breakdown was limited to General Motors automotive operations and excluded the costs of other industries in which it is engaged.[39] The margin between unit direct cost and price represented 39 percent of the company's average realized price in that year. That this figure is greater than the percentage margin in the bread industry is due largely to the practice followed by General Motors of making annual model changes; as was brought out in the subcommittee's report, the practice by this industry of making such changes is engaged in for the purpose of increasing the product's sales appeal. Nonetheless, General Motors percentage margin above production costs is less than half that of most of the drug products shown.

If instead of individual products the basis of the analysis is companies, a wider range of comparisons can be made. Some large firms publish in their annual reports percentage breakdowns of their sales dollar, distributed by cost of materials, labor, and the other principal expense items. Information of this type is available for 15 large producers of ethical drugs which are principally engaged in the drug industry. An effort has been made to compare the breakdowns for these companies with comparable distributions of large firms in other industries. Whether a company does choose to publish a breakdown of this type is purely a matter of random chance. However, an effort has been made to obtain some degree of representativeness by securing such distributions for two large companies in each of the two-digit major industry groups, and this proved to be possible in 12 of such industry groups. Moreover, where possible, companies have been selected which fall within different three-digit groups of a given major industry group. Also, an effort has been made to place figures for the various companies on a comparable basis by making appropriate adjustments for depreciation and amortization.

[38] For a fuller description of this survey, see "Administered Prices: Bread," S. Rept. 1923, 86th Cong., 2d sess., report of the Subcommittee on Antitrust and Monopoly.

[39] For a fuller description of the nature of this cost breakdown, see "Administered Prices: Automobiles," 85th Cong., 2d sess., report of the Subcommittee on Antitrust and Monopoly.

It is recognized that there will be some variation in the percentage margin owing simply to differences in the nature of the business. By their very nature, some industries have relatively larger selling and overhead expenses than others. Hence, a comparison of drug producers with companies in other industries would have significance in suggesting excessive selling costs or profit margins only if the typical percentage margins of drug producers were substantially larger than the margins of firms in the great majority of other industry groups. Such, however, appears to be the case as is revealed by the contrast between the 1959 percentage margins for 15 drug companies,[40] as shown in table 7, and those for leading companies in 50 other industries presented in table 8.

TABLE 7.—*Cost of goods sold and gross margin as percentages of sales for 15 drug companies 1959*

[Percent of sales]

Company	Cost of goods sold	Gross margin
Norwich Pharmacal Co	21.6	78.4
Schering Corp	21.7	78.3
Bristol-Myers Co	25.5	74.5
The Upjohn Co	25.6	74.4
Smith Kline & French Laboratories	27.4	72.6
Carter Products, Inc	[1] 27.8	72.2
G. D. Searle & Co	31.3	68.7
U.S. Vitamin & Pharmaceutical Corp	[2] 34.3	65.7
Sterling Drug, Inc	36.4	63.6
Warner-Lambert Pharmaceutical Co	36.6	63.4
Parke, Davis & Co	36.8	63.2
American Home Products Corp	37.3	62.7
Abbott Laboratories	40.1	59.9
Merck & Co., Inc	41.1	58.9
Mead Johnson & Co	41.4	58.6

[1] Fiscal year ended Mar. 31, 1960.
[2] Fiscal year ended Nov. 30, 1959.

Source: Moody's Industrial Manual, 1960, and supplemants.

[40] Several important drug producers are not included because of the absence of 1959 data comparable to that shown for the 15 companies on the table. CIBA Pharmaceutical Products, Inc., and Hoffmann-La Roche are subsidiaries of Swiss firms which publish no financial information. Neither Chas. Pfizer & Co. nor Eli Lilly & Co. publish cost-of-goods-sold data. And in the cases of American Cyanamid (Lederle Laboratories) and Olin Mathieson (E. R. Squibb & Sons), the drug divisions are too small a part of the conglomerate operations to permit usable data to be derived from consolidated returns.

TABLE 8.—*Cost of goods sold and gross margin as percentages of sales for 50 companies in 50 "3-digit" industry groups, 1959*

[Percent of sales]

Industry (S.I.C. group No.)	Company	Cost of goods sold	Gross margin
208X	Coca-Cola Co.	42.64	57.36
284	Colgate-Palmolive Co.	53.33	46.67
383	Eastman Kodak Co.	59.82	40.18
211	R. J. Reynolds Tobacco Co.	60.95	39.05
281	E. I. DuPont de Nemours & Co.	61.57	38.43
324	Lehigh Portland Cement Co.	62.55	37.45
205	National Biscuit Co.	62.61	37.39
381	Minneapolis-Honeywell Regulator Co.	63.26	36.74
357	Burroughs Corp.	63.96	36.04
351	Outboard Marine Corp.	65.21	34.79
289	Hercules Powder Co.	66.18	33.82
326	Johns-Manville Corp.	66.21	33.79
398	Armstrong Cork Co.	67.28	32.72
207	Hershey Chocolate Co.	67.36	32.64
271	Curtis Publishing Co.	68.53	31.47
203	General Foods Corp.	69.72	30.28
321	Pittsburgh Plate Glass Co.	70.30	29.70
266	Masonite Corp.	[1] 71.43	28.57
314	International Shoe Co.	71.91	28.09
287	Tennessee Corp.	72.05	27.95
285	Glidden Co.	72.81	27.19
204	Corn Products Co.	73.24	26.76
251	Simmons Co.	73.36	26.64
231	Cluett, Peabody & Co., Inc.	73.72	26.28
202	National Dairy Products Corp.	74.00	26.00
291	Socony Mobil Oil Co.	74.43	25.57
295	Flintkote Co.	74.61	25.39
331	United States Steel Corp.	74.90	25.10
333	Aluminum Co. of America	75.13	24.87
301	Goodyear Tire & Rubber Co.	76.79	23.21
241	Georgia-Pacific Corp.	77.05	22.95
356	Worthington Corp.	78.33	21.67
355	Food Machinery and Chemical Corp.	78.83	21.17
354	Blaw-Knox Co.	79.31	20.69
352	International Harvester Co.	79.41	20.59
343	American Radiator & Standard Sanitary Corp.	79.71	20.29
208	Schenley Industries	[1] 79.79	20.21
227	Bigelow-Sanford, Inc.	80.34	19.66
371	General Motors Corp.	80.90	19.10
365	Radio Corp. of America	81.10	18.90
374	Westinghouse Air Brake Co.	82.09	17.91
262	West Virginia Pulp & Paper Co.	82.29	17.71
341	American Can Co.	83.76	16.24
366	Raytheon Co.	85.15	14.85
221	Burlington Industries, Inc.	86.05	13.95
349	Combustion Engineering, Inc.	86.15	13.85
206	American Sugar Refining Co.	[2] 87.83	12.17
361	General Electric Corp.	88.16	11.84
201	Swift & Co.	90.72	9.28
372	Douglas Aircraft Co., Inc.	95.40	4.60

[1] Fiscal year ending Aug. 31, 1959.
[2] For the year 1958. Not available for 1959.

Sources: Compiled by the Legislative Reference Service, Library of Congress, from directory of companies filing annual reports with the Securities & Exchange Commission, 1959; Moody's Industrial Manual, 1960; The Fortune Directory of the 500 largest U.S. industrial companies, August 1960.

The drug companies are a case apart. Fifty different "3-digit" industry groups are represented in table 8 by companies for which the percentages of cost of goods sold have been calculated by Moody's Investors Service. Each of the companies is a leader in its industry and is among the 500 largest manufacturing firms in the United States as reported by Fortune. Not one of these companies has a gross margin above production costs as high as the lowest gross margin shown among the 15 drug companies, i.e., 59 percent. Among the 50 nondrug industries, in only one case, soft drinks, does the margin of the firm shown, Coca-Cola Co., approach this figure. In 6 of the

15 drug companies listed, the gross margin is more than 70 percent of sales, while in 41 of the 50 nondrug companies the margin is below 35 percent. Indeed, two-thirds (33) of the nondrug companies have margins which are less than half of the lowest margin reported for any of the 15 drug companies.

No unique characteristic inherent in the economics of the drug industry suggests itself as a logical explanation for this startling difference in the breakdown of the sales dollar of the drug producers as constrasted with large firms in other industries. It should be noted that the nondrug list contains a number of firms which are generally considered to rely very heavily on advertising and other promotional and selling expenses to create sales volume—e.g. General Motors, General Electric, Colgate-Palmolive, R. J. Reynolds, General Foods. The expectation, it will be recalled, would be that because the basic demand for drugs, namely the incidence of illness, cannot be significantly increased by advertising and selling expenditures, selling costs would be relatively smaller in drugs than in other industries. Moreover, because of the unique importance of the product to the public health, management might be expected to be content with lower profit margins. These expectations, it appears, find little support in the actual showings.

GROSS MARGIN, DRUG OPERATIONS ONLY

The comparison above between the 1959 gross margins of 15 drug firms and leading firms in 50 other industries leaves no room to doubt that few, if any, other industries in the American economy spend as small a proportion of their sales receipts to produce the goods they sell as does the pharmaceutical industry. Equally important to an understanding of drug prices, however, is some insight into what use is made of these margins by the manufacturers. The earlier discussion of the general nature of costs is pertinent here. As has been noted, production costs are the inescapable costs of remaining in business, while the distribution of gross margin (i.e., the difference between production costs and sales) among other categories of costs and profit is, on the other hand, largely a matter of managerial discretion.

The subcommittee received detailed financial statements from 22 leading drug companies covering their 1958 sales and other receipts (principally royalties) and their expenditures, relating to drug operations only.[41] From these statements it has been possible to derive the breakdown of the industry's receipts between production costs and gross margin, and further, to analyze the composition of gross margin itself. For convenience, items other than production costs have been placed into four broad categories: research, general and administrative expense, selling and promotional outlays, and taxes. These reports, expressed as percentages of sales and other receipts, are presented in table 9.

This output worth $2.3 billion cost the 22 producers less than one-third of this amount to manufacture; the industry's gross margin on

[41] I.e., the problem of the conglomerate nature of several of the companies has been avoided for 1958. Olin Mathieson, for example, has segregated all costs (including allocated costs) for its drug operations from its other business in such diverse fields as rocket fuels, insecticides, flashlights, rifles, and shotguns, etc. American Home Products has provided information on its drug business separately from its operations in the fields of spaghetti and catsup production, shoe polishes, and so forth.

drug operations alone came to no less than 67.9 percent of sales. Fully three-quarters of the margin (or more than half of the industry's receipts) was either used to promote the sales of its products or went into profits. Indeed, promotion and profits before taxes in the drug operations of the 22 firms exceeded the combined costs of production, research and administration and all other expenses.

Profits before income taxes and advertising and selling expenses were of about equal importance, the former amounting to 25.8 percent of sales, and the latter 24.8. Only five firms reported pretax profit figures below 20 percent of their sales, while for six others pretax profits ranged between 30 and 44 percent of sales. Individual percentages of receipts spent for sales promotion ranged from a low of 18.1 percent (by Merck and Lilly) to a high of 40.5 percent of sales by Norwich Pharmacal Co.

The sums spent by the industry to sell its products are in marked contrast to the amounts spent for research. The proportion spent for research, 6.3 percent, is often cited as the principal justification for high drug prices. Only 3 of the 22 companies spent as much as 10 percent of sales on research, while 7 firms (including such industry leaders as Pfizer and Parke, Davis) spent less than 5 percent of sales for this purpose. Only 1 of the 22 companies in 1958, Searle, devoted as much as half the amount to research that it reported for selling expense, while 11 of them spent from 5 to 11 times as much in advertising, promotional and selling expense as they did for research.

In summary, when spokesmen for this industry speak of high costs, it is clear that they do not have in mind production costs, research costs, or to any great degree, general and administrative expense. It is true that they may refer to the "tax burden" (and income taxes absorbed 12.8 percent of sales in 1958), but corporate income taxes are usually not regarded by spokesmen for industry generally as comparable to other types of costs; if they were, it would be clear that they are not being paid by the companies but rather passed on, as costs, to the consumer. The remaining item of cost, selling expense, is indeed high—but this again reflects the deliberate decisions of a number of corporate managements that selling costs will be high, i.e., that prices will be kept high enough to yield a substantial gross margin, of which a large share will be expended for advertising and promotion.

The circularity here is obvious. The heavy expenditures on sales promotion furnishes one of the principal means by which the major drug companies are able to maintain their high prices. The high prices produce the huge gross margins in this industry which are used to finance the heavy sales promotion expenditures.

TABLE 9.—*Breakdown of sales dollar for 22 drug companies* [1] *(drug operations only)*

[In percent]

COMPANIES WHICH HAVE APPEARED BEFORE THE SUBCOMMITTEE

	American Cyanamid (Lederle)	American Home (Wyeth, Ayerst)	Bristol Laboratories	Carter Products	CIBA	Eli Lilly	Merck	Pfizer	Parke, Davis	Schering	S.K.F.	Upjohn
Net profit	15.6	14.7	9.9	20.4	12.7	13.3	12.9	10.5	16.0	15.9	17.2	13.7
Taxes	16.2	15.9	6.5	23.4	12.9	13.8	12.8	5.7	15.3	13.4	20.0	14.4
Selling	25.4	24.0	32.3	27.8	33.9	18.1	18.1	26.7	25.2	32.7	19.5	20.9
General and administrative	10.2	14.9	18.0	6.5	7.4	10.5	10.2	7.1	6.1	8.8	10.9	16.6
Research	6.4	3.2	13.7	2.7	[2] 13.9	8.8	8.0	4.9	4.8	8.2	8.9	8.8
Cost of goods	26.2	27.3	19.6	19.2	19.2	35.4	38.0	45.1	32.6	20.9	23.5	25.6
Total	100.0	100.0	100.0	100.0	100.0	99.9	100.0	100.0	100.0	99.9	100.0	100.0

COMPANIES WHICH HAVE NOT APPEARED BEFORE THE SUBCOMMITTEE

	Abbott	Hoffmann-LaRoche	Mead Johnson	Norwich	Olin Mathieson (Squibb)	Searle	Sterling	U.S. Vitamin	Vick	Warner Lambert	22 companies
Net profit	11.0	8.7	11.3	11.6	6.8	21.3	10.1	12.2	10.4	13.4	13.0
Taxes	10.1	9.4	12.6	12.0	7.1	21.9	9.6	10.9	10.9	14.4	12.8
Selling	28.4	17.4	29.4	40.5	19.7	19.4	36.7	33.7	25.3	26.3	24.8
General and administrative	10.0	[3] 30.0	14.9	6.6	17.2	7.4	8.3	8.0	7.2	11.8	10.9
Research	5.6	6.9	5.7	4.4	5.4	12.2	3.2	5.1	3.7	5.2	6.3
Cost of goods	34.8	[4] 27.5	26.1	24.8	43.7	17.8	32.0	30.1	42.4	28.8	32.1
Total	99.9	99.9	100.0	99.9	99.9	100.0	99.9	100.0	99.9	99.9	99.9

[1] Including royalties and other income.
[2] Includes expenditures in Switzerland.
[3] Includes some amounts which should be carried as "Cost of goods."
[4] Too low, since some items in "General and administrative" should be here.

Source: Reports by the drug companies to the subcommittee on Form I.

Chapter 2. Prices in Foreign Countries as a Standard

A second standard against which the reasonableness of ethical drug prices in the major U.S. market (i.e., sales to the retail drug trade) may be measured consists of prices in other markets—in this case the relation between U.S. prices and the prices of identical products in foreign markets.

Through the good offices of the State Department the subcommittee was able to secure from American consulates abroad the prices of a number of important drug products. The prices were obtained from a leading city of each country in identical dosage forms to those sold in the United States and were as of the spring of 1959. Where the most popular foreign bottle size (in capsules per bottle) differs from that in the United States, the foreign price has been directly adjusted to the U.S. size (e.g., if the available foreign price was in terms of a number of units half that of the U.S. size, the foreign price would be multiplied by 2). For some products the prices reported were for drugs made and sold by foreign manufacturers in their own countries. For others the prices represent prices charged by American manufacturers who conduct partial or complete manufacturing operations in the countries for which prices are shown. And in a number of cases, the foreign prices are quoted for drugs made by American firms in the United States and exported either in bulk (for tableting and packaging abroad) or in finished, packaged form. In what follows, the differences in the prices as among countries will be shown first, as presented in the hearings, to be followed by a summary of the rationalizations offered for the differences.

CORTICOSTEROIDS

For the corticosteroids—prednisone and prednisolone—it was possible to determine the prices charged by Merck & Co. (through foreign subsidiaries) in a number of countries. Prices for prednisone are shown in the table below. [42]

Table 10.[1]—*Prednisone—Merck's price to druggists, comparative U.S. and foreign prices, 1959*

[5 mgm. tablets, 100's]

Country	Price to druggists	Price as percent of U.S. price
United States	$17.90	100
England [2]	7.53	42
Brazil [1]	14.15	79
Holland	16.05	90
Austria [2]	17.16	96
Canada [1]	20.80	116
Italy [2]	22.16	124
Panama [1]	22.99	128
Australia [3]	24.00	134
Japan	27.78	155

[1] Hearings, pt. 14, p. 8065.
[2] Calculated from price for 30.
[3] Calculated from price for 20.

Source: U.S. price: American Druggist Blue Book, 1959–60. Foreign prices: Collected by the U.S. Department of State through the American embassies in the spring of 1959.

[42] Prices for prednisolone were reported for 7 of the 9 foreign countries listed (no Merck prednisolone prices were reported for Italy or Panama); except for Brazil in which prednisolone was priced 5 cents above prednisone, Merck's prices were identical for the two products.

At one extreme the price in London for prednisone is $7.53, only two-fifths of the price charged U.S. druggists. At the other, the Tokyo druggist pays $27.78, or 1½ times the U.S. price.

TRANQUILIZERS

Among the tranquilizers, foreign price information was obtained for chlorpromazine, prochlorperazine, promazine, meprobamate, and reserpine. As in the case of the corticosteroids, prices vary widely from country to country.

Chlorpromazine and prochlorperazine are phenothiazine derivatives, developed by the French chemical and drug manufacturer, Rhone-Poulenc. The American firm, Smith Kline & French, operating under an exclusive U.S. selling license from Rhone-Poulenc, is the only domestic source of supply; the finished products are sold by Smith Kline & French under the brand names Thorazine (chlorpromazine) and Compazine (prochlorperazine). The differences between the prices charged by Smith Kline & French in the United States and prices charged by other sellers (including Rhone-Poulenc, its subsidiaries and other licensees) are shown in table 11.[43]

TABLE 11.—*Tranquilizers—Comparative U.S. and foreign prices, 1959*

CHLORPROMAZINE

[25 mgm. tablets, 50's]

Country	Brand name	Company marketing	Price to druggist	Price as percent of U.S. price
United States	Thorazine	Smith Kline & French	$3.03	100
France	Largactil	Specia (Rhone-Poulenc subsidiary).	.51	17
England	do	May & Baker	.77	25
Australia	do	do	.94	31
Germany	Mogaphen	Bayer	.97	32
Italy	Largactil	Farmitalia (owned 51 percent by Montecatini, 49 percent by Rhone-Poulenc).	1.22	40
Holland	do	Specia	1.31	43
Belgium	do	do	1.37	45
Brazil	Amplictil	Rhodia	1.53	50
Japan	Contomin	Yoshitomi Pharm	1.88	62
Do	Wintermin	Shionogi & Co	1.91	63
Do	Sevamine	Banyu Pharm	2.14	71
Canada	Largactil	Rhone-Poulenc	3.75	124

PROCHLORPERAZINE

[10 mgm. tablets, 50's]

United States	Compazine	Smith Kline & French	$3.93	100
Germany	Nipodal	Bayer	.80	20
France	Tementil	Specia	.80	20
Belgium	Stementil	do	1.61	41
England	do	May & Baker [1]	2.24	57
Australia	do	do [1]	2.84	72
Canada	do	Rhone-Poulenc	3.60	92

[1] Price reported to subcommittee for 5 mgm. tablets has been doubled.

Sources: U.S. price: "American Druggist Blue Book, 1959–60." Foreign price: Collected by the U.S. Department of State through the American Embassies in spring of 1959. (Pro rata conversion to 50 tablets per package by subcommittee staff where necessary.)

[43] Hearings, pt. 16, p. 8956.

Looking first at chlorpromazine, Smith Kline & French's price to the U.S. druggist for Thorazine ($3.03) is exceeded only by Rhone-Poulenc's Canadian price ($3.75). At the other extreme, Rhone-Poulenc sells the product in France, through its subsidiary, Specia, at a price of 51 cents a bottle, one-sixth of Smith Kline & French's U.S. price and less than one-seventh the price which Rhone-Poulenc, itself, charges in Canada. Poulenc's British licensee sells to British druggists at 77 cents a bottle and at 94 cents in Australia, one-fourth and one-third of what the American druggist has to pay.

There is a similar wide variation in prices for prochlorperazine. Here the price to the American druggist is higher than in any other country for which data were obtained. Prices range from 80 cents a bottle in France to Smith Kline & French's price in the United States for its brand of the product (Compazine) of $3.93.

Promazine is another phenothiazine derivative, also developed by Rhone-Poulenc. American Home Products Corp. enjoys an exclusive U.S. license from Poulenc, under which it offers promazine through its Wyeth Laboratories Division under the brand name "Sparine." A number of American Home Products' foreign subsidiaries also are licensees. Thus, it is possible to compare the prices charged by a manufacturer in the United States to the prices charged by the same company abroad. Wyeth's Canadian price is only 5 percent above and the Venezuelan price only 10 percent below the price paid by the U.S. retail druggist. But the Australian druggist can purchase Wyeth's Sparine for 94 cents a bottle, less than one-third the price of $3 charged to his American counterpart. And in none of the countries shown, except for Canada and Venezuela, is Wyeth's price much more than one-half the U.S. price.

TABLE 12.[1]—*Sparine—Comparative U.S. and foreign prices, 1959*

[25 mgm. tablets, 50's]

Country	Brand name	Company marketing	Price to druggist	Price as percent of U.S. price
United States	Sparine	Wyeth	$3.00	100
Germany	Protacyl	Asche	.80	27
Do	Verophen	Bayer	.83	28
Australia	Sparine	Wyeth International	.94	31
Brazil	Promazionon	Wyeth	[2] 1.26	42
Italy	Liranol	do	[3] 1.32	44
Holland	Prazine	do	1.59	53
Mexico	Liranol	do	[4] 1.66	55
Venezuela	Vipromazine	do	2.70	90
Canada	Sparine	do	3.15	105

[1] Hearings, pt. 16, p. 9279.
[2] Calculated from price for 30 tablets.
[3] Calculated from price for 25 tablets.
[4] Calculated from price for 20 tablets.

Sources: U.S. price: American Druggist Blue Book, 1959–60.
Foreign prices collected by the U.S. Department of State through the American embassies in spring of 1959.

With respect to meprobamate, Carter Products, Inc., as stated earlier, holds U.S. patents under which it has licensed American Home Products (Wyeth Laboratories) to sell, but not to manufacture, meprobamate both in the United States and abroad. Wyeth sells the product as Equanil. Carter itself sells only in the United States, under the Miltown label; American Cyanamid (Lederle Laboratories) has been licensed as Carter's foreign distributor, with the right to use the Miltown label in foreign sales, but not to sell under any label in the U.S. market. Comparative U.S. and foreign prices for meprobamate, secured from the State Department are shown in table 13:

TABLE 13.[1]—*Meprobamate: Comparative U.S. and foreign prices of Miltown, 1959*

[400 mgm. tablets, 50's]

Country	Price to druggists	Price as percent of U.S. price
United States	$3.25	100
Argentina	[2] 75	23
Germany	1.38	42
England	1.48	45
Austria	[3] 1.56	48
Italy	[3] 1.77	55
Mexico	[2] 2.00	62
Brazil	[2] 2.20	68
Japan	[4] 2.50	77
Belgium	[2] 3.25	100
Australia	[2] 3.47	107
Holland	[5] 3.56	110
Canada	3.75	116
Iran	[2] 4.68	144
India	[2] 4.79	147
Venezuela	[2] 5.44	167

[1] Hearings, pt. 16, p. 9222. The price of "Miltaun" in Germany has been changed since the earlier publication of the table, on the basis of revised data received from the Department of State.
[2] Calculated from price for 25.
[3] Calculated from price for 30.
[4] Calculated from price for 100.
[5] Calculated from price for 20.

Source: U.S. price, American Druggist Blue Book, 1959-60. Foreign prices: Collected by U.S. Department of State through American embassies in spring of 1959. (Prices converted to dollars at official rates.)

It is interesting to note that in four well-developed countries with relatively high costs and strong demand, Germany, England, Austria, and Italy, Miltown prices are approximately half of that charged in the United States. On the other hand, in Iran, India, and Venezeula, three relatively underdeveloped nations, Cyanamid's Miltown price is half again as great as that charged by Carter for the same product in the United States.

The last of the tranquilizers studied by the subcommittee is reserpine, patented and sold by the Swiss firm, CIBA, Ltd., under the brand name "Serpasil." CIBA's American subsidiary, CIBA Pharmaceutical Products, Inc., sells Serpasil in the United States at $4.50 to the druggist for 0.25 milligram tablets in bottles of 100, and at $12 for the 1 milligram tablets. The prices at which CIBA sells in other countries are shown in table 14.

TABLE 14.[1]—*Serpasil—Comparative U.S. and foreign prices, 1959*

[100's]

Country	0.25-milligram tablet		1-milligram tablet	
	Price to druggist	Price as percent of U.S. price	Price to druggist	Price as percent of U.S. price
United States	$4.50	100	$12.00	100
France	.83	18	1.21	10
Austria	1.03	23	2.78	23
Germany	[3] 1.05	23	[3] 3.42	28
England	1.08	24	3.94	33
Holland	1.09	24	(4)	(4)
Belgium	[2] 1.89	42	[5] 4.24	35
Australia	1.35	30	4.41	37
Iran	(4)	(4)	[5] 4.87	41
Italy	[2] 1.83	41	[5] 4.90	41
India	(4)	(4)	5.29	44
Brazil	[2] 1.95	43	5.53	46
Japan	[2] 1.75	39	5.56	46
Venezuela	[3] 3.05	68	7.85	65
Canada	2.70	60	9.87	82

[1] Hearings, pt. 16, p. 9433.
[2] Calculated from price for 40.
[3] Calculated from price for 50.
[4] Not available.
[5] Calculated from price for 30.
[6] Calculated from price for 20.

Source: U.S. price: American Druggist Blue Book, 1959–60. Foreign prices: Collected by the U.S. Department of State through the American embassies in spring of 1959.

The prices paid by U.S. druggists and consumers for Serpasil are far higher than those in any of the 15 foreign nations from which reports were received. In only two countries (Canada and Venezuela) was Serpasil priced at as much as one-half of the U.S. price. Indeed, in France, the price for the 0.25-milligram tablet is less than one-fifth the U.S. price, while for the 1-milligram tablet the French druggist pays only one-tenth the price established by CIBA in the U.S. market.

ORAL ANTIDIABETICS

Wide price divergences also exist in the case of the oral antidiabetic drugs. The larger selling of the two principal drugs of this type, tolbutamide, is marketed in this country as Orinase by Upjohn Co., under license from Farbwerke Hoechst, A. G., Mannheim, West Germany. Upjohn's price to the U.S. direct-dealing druggist is $4.17 for 0.5 gram tablets in bottles of 50.[44] This is higher than the price in any of the 11 foreign nations for which the State Department provided information.[45] The highest comparable foreign price reported was $3.75 in Canada, charged by Hoechst Pharmaceutical

[44] The druggist who buys through a wholesaler pays $4.87. Upjohn encourages retail druggists to deal directly with the company, rather than through wholesalers, by extending to any retailer who agrees to buy Upjohn products in a minimum amount of $100 per year, the same discount offered to wholesalers—40 percent off list.

[45] On this point see also Hearings, pt. 20, p. 11062. Upjohn submitted an exhibit purporting to show 5 countries in which the tolbutamide price was above the U.S. Orinase price (of these only India was included in the 11 nations for which the State Department secured information) and 12 countries with lower prices. Upjohn's table lists wholesale prices and two sets of prices to druggists who buy from wholesalers, based on alternative Upjohn assumptions that the wholesaler makes 20 or 30 percent. As stated in the previous footnote, Upjohn's price of $4.17 for 50 tablets is itself a wholesale price; thus it may be properly compared only to wholesale prices shown in the Upjohn table for 50 tablets either reported directly or converted from the closest comparable quantity, usually 40 tablets per bottle. If this is done it may be seen that in the Upjohn list of 17 foreign countries there are not 5 countries, but only 1 (Republic of the Philippines), in which the foreign price is above the U.S. Orinase price charged by Upjohn.

Co. of Canada (owned jointly by Farbwerke Hoechst and Upjohn). Yet in West Germany and the Netherlands Hoechst itself sells tolbutamide at prices equivalent to $1.85 for 50 tablets, less than one-half of Upjohn's U.S. price.

TABLE 15.[1]—*Tolbutamide—comparative U.S. and foreign prices, 1959*

[0.5 gram tablets, 50's]

Country	Brand name	Company marketing	Price to druggists	Price as percent of U.S. price
United States	Orinase	Upjohn	$4.17	100
Austria	Tolbutamid	Sanabo	1.66	40
Germany	Rastinon	Hoechst	[2] 1.85	44
Holland	do	do	[2] 1.85	44
	Artosin	Boehringer	[2] 1.85	44
England	Rastinon	Horlicks	[3] 1.87	45
France	Tolglybutamide	Endopancrine	[3] 2.04	49
Italy [4]	Rastinon	Hoechst	[3] 2.35	56
	Artosin	Boehringer	[3] 2.35	56
Brazil	Artosina	do	[3] 2.43	58
Belgium	Rastinon	Hoechst	[3] 2.45	59
India	Tolbutamide	Dumex	[3] 3.57	86
Panama	Rastinon	Hoechst	[3] 3.64	87
Canada	Orinase	do	3.75	90

[1] Hearings, pt. 20, p. 11061.
[2] Converted from 40's.
[3] Converted from 100's.
[4] Large number of sellers in Italy.
[5] Converted from 20's.

Source: U.S. prices, American Druggist Blue Book, 1959–60; foreign prices, collected by Department of State from American Embassies abroad for the subcommittee in the spring of 1959.

Foreign prices for chlorpropamide (Diabinese) present a rather significant contrast. In most countries this product is marketed only by Chas. Pfizer & Co. This fact is probably not unrelated to the absence of the widespread variations in price noted in other products. In England, the lowest-priced foreign market (apart from Italy), Pfizer's price is 39 percent below the U.S. price—hardly comparable to some of the differences exhibited by other products. Italy appears to be the exception that proves the rule. In Italy the product is sold by several companies, including Farmitalia, which offers this drug at a price of $1.41 for 50 tablets. The State Department did not report an Italian price for Pfizer's Diabinese. The president of the company informed the subcommittee, however, that Diabinese is sold in Italy; Mr. McKeen was unable to recall Pfizer's price there, but he presumed that his firm would meet the Farmitalia price.[46] If Mr. McKeen's presumption is correct, it is evident that when faced with competition Pfizer finds it possible to sell Diabinese at a price approximately one-fourth of that charged the U.S. druggist.[47]

[46] Hearings, pt. 20, p. 11248.
[47] It should be noted that the Diabinese sold in all of these markets may be in fact produced in bulk in the United States. Mr. McKeen was not sure of his company's policy in this respect: "I think we do send some abroad for some markets and we also produce it here and ship it into some markets * * * I am not certain of this, but I believe it is in England that we produce it. *Whether we are still continuing that,* Mr. Dixon, I am not sure." [Italic supplied.]

TABLE 16.[1]—*Chlorpropamide—Comparative U.S. and foreign prices, 1959*

[250-milligram tablets, 60's]

Country	Brand name	Company marketing	Price to druggist	Price as percent of U.S. price
United States	Diabinese	Pfizer	$5.40	100
Italy [2]	Ipoglicone [3]	Farmitalia	1.41	26
England	Diabinese	Pfizer	[4] 3.32	61
Holland	do	do	[5] 3.77	70
Iran	do	do	[6] 4.18	77
Belgium	do	do	[5] 4.45	82
Brazil	do	do	[5] 4.59	85
Canada	do	do	[4] 4.77	88
Panama	do	do	[6] 6.40	119
Mexico	do	do	[6] 6.72	124

[1] Hearings, pt. 20, p. 11246.
[2] Several sellers in Italy.
[3] Converted from 500 milligram tablet, 40's.
[4] Converted from 100's.
[5] Converted from 20's.
[6] Converted from 30's.

Source: U.S. price, American Druggist Blue Book, 1959–60; foreign prices: Collected by U.S. Department of State through the American embassies in spring of 1959.

ANTIBIOTICS

On antibiotics, the subcommittee was furnished foreign price information on one form of penicillin and several broad-spectrum antibiotics.

As is discussed elsewhere, the older forms of penicillin are not patented, are produced by both large and small firms whose number has varied considerably over the years, and are sold at highly competitive prices. Within the industry, however, there have been attempts to develop new variants sufficiently different from the older forms to achieve patentability. One of the principal new variants is penicillin-V, patented by Eli Lilly & Co. and sold under the brand name V-Cillin. The price of Lilly's product to the U.S. druggist in 1959 was $9 for 125 milligram tablets in bottles of 50, equivalent to $18 per 100 tablets. Comparable Lilly prices per 100 tablets in seven foreign countries are shown in table 17. In six of these countries, Lilly's prices are far below the U.S. price, ranging from $6.50 per 100 in England (little more than one-third of the U.S. price) to $15 in Panama; only in Canada is the price higher than in the United States. For each of the countries shown, except Brazil and England, the penicillin-V sold is manufactured in Lilly's U.S. plant.[48] Thus the company ships the product from Indianapolis to Australia, where it is sold to the Australian druggist for $10.75—40 percent less than what a druggist has to pay in the city where the drug is made.

[48] Hearings, pt. 24, p. 14152.

TABLE 17.[1]—*Penicillin-V, Eli Lilly & Co.—Comparative U.S. and foreign prices, 1959*

[125 mgm. tablets, 100's]

Country	Brand name	Price to druggist	Price as percent of U.S. price
United States	V-Cillin	[2] $18.00	100
England	Penicillin-V	[3] 6.50	36
Brazil	V-Cil	[3] 8.67	48
Australia	PVK	[4] 10.75	60
Mexico	V-Cil	[3] 12.00	67
Venezuela	do	[5] 12.25	68
Panama	do	[6] 15.00	83
Canada	V-Cillin	[7] 18.75	104

[1] Ibid., p. 14150.
[2] Calculated from 50's.
[3] Converted from 250 mg. tablet, 12's.
[4] Converted from 60 mg tablet, 24's.
[5] Calculated from 250 mg. tablet, 16's.
[6] Calculated from 12's.
[7] Converted from 250 mg. tablet, 10's.

Source: U.S. prices: American Druggist Blue Book 1959–60; foreign prices: collected by Department of State from American Embassies abroad in the spring of 1959.

Price information was obtained for three broad spectrum antibiotics—chloramphenicol (Chloromycetin), chlortetracycline (Aureomycin) and tetracycline. In the case of chloramphenicol the price in the United States is, with one exception, the highest reported. The other two drugs, however, present something of a variation from the usual pattern, as the U.S. prices are about midway between the highest and lowest reported. That in some countries prices are higher than in the United States is undoubtedly traceable to the relative absence of competitive producers; these products were originally discovered, developed, and patented, by U.S. firms. That in others prices are lower than in the United States probably reflects the existence of price controls or price competition, particularly from Italian producers, or both.

For chloramphenicol, produced and sold by Parke, Davis under the brand name Chloromycetin, the price to the retail druggist in the United States in 1959 was $5.10 for a bottle of 16 capsules of 250 mg. each, a price identical to that charged for every other broad-spectrum antibiotic. At the same time Parke, Davis shipped the same product, produced and packaged in the United States, to Iran where it sold for $2.19 per 16 capsules; a Detroit druggist must pay 2⅓ times as much as an Iranian druggist for a product manufactured in Detroit. In Mexico, India, Brazil, Belgium, Venezuela, and Panama the price to local druggists for chloramphenicol produced in the United States was below the U.S. price.[49]

[49] While the Chloromycetin sold in Iran was produced and packaged in final form in the United States, in most other cases Parke, Davis exported bulk chloramphenicol for encapsulation and packaging abroad. Since the U.S. cost for encapsulation and packaging in bottles of 16 is at most only about 15 cents (see Upjohn cost analyses in FTC docket 7211) international differences in finishing and packaging costs could not even remotely explain differences in selling prices of the magnitude shown.

TABLE 18.[1]—*Chloromycetin—Comparative U.S. and foreign prices, 1959*

[250 mgm. tablets, 16's]

Country	Brand name	Manufacturer	Country of manufacture	Price to druggist	Price as percent of U.S. price
United States	Chloromycetin	Parke, Davis.	United States	$5.10	100
Iran	do	do	do	[2] 2.19	43
England	do	do	England	[2] 2.67	52
Mexico	do	do	United States and Italy.[3]	[2] 2.98	58
Holland	do	do	England	[2] 3.03	59
India	do	do	United States and England.[3]	[2] 3.03	59
Brazil	Cloromicetina	do	United States [4]	[2] 3.21	63
Belgium	Chloromycetin	do	do.[4]	[2] 3.36	66
Japan	do	Sankyo & Co.	Japan	[5] 3.42	67
Australia	Chloromycetyn	Parke, Davis.	England [3]	3.71	73
Italy	Chloromycetin	do	Italy	[6] 3.90	76
Austria	do	do	England	[2] 4.27	84
Venezuela	do	do	United States	[2] 4.69	92
Panama	Chloromycetina	do	do	[5] 5.05	99
Canada	Chloromycetin	do	do.[3]	5.61	110

[1] Hearings, pt. 24, p. 14084.
[2] Calculated from price for 12.
[3] Bulk only.
[4] All processing except final packaging is done in United States; final packaging done in Belgium.
[5] Calculated from price for 100.
[6] Calculated from price for 10.

Source: United States: "American Druggist Blue Book 1959-60." Foreign: Prices collected by Department of State from American Embassies abroad for the subcommittee in the spring of 1959.

Table 19 shows the foreign price data for chlortetracycline, manufactured and sold in the United States and abroad as Aureomycin by the Lederle Laboratories Division of American Cyanamid. Several countries were reported to have prices well below the U.S. level. Thus, this drug is sold by Cyanamid in Argentina at a price to the druggist of $1.19 for 16 capsules, less than one-fourth of the $5.10 paid by the U.S. druggist, while in Brazil Cyanamid's price is $3.40, or two-thirds of the U.S. price. By way of contrast are eight foreign countries in which Cyanamid sells Aureomycin at prices higher than the U.S. quotation, ranging from $5.12 in Iran up to $6.92 in India. In each Cyanamid is reported as the only seller.[50]

[50] Alfar, the reported seller in Italy, has been acquired by Cyanamid.

TABLE 19.[1]—*Aureomycin—Comparative U.S. and foreign prices, 1959*

[250 mgm. tablets, 16's]

Country	Brand name	Manufacturer	Country of manufacture	Price to druggist	Price as percent of U.S. price
United States	Aureomycin	Lederle	United States	$5.10	100
Argentina	do	Cyanamid Arg.	Argentina	1.10	23
France	Aureomycine	Opolabo	France	[2] 3.26	64
Brazil	Aureomycina	Lederle	Brazil	3.40	67
Germany	Aureomycine	do	Germany	4.31	85
England	Aureomycin	Cyanamid of Great Britain.	England	4.56	89
Japan	do	Lederle	Japan	[2] 4.58	90
Iran	do	do	United States	5.12	100
Venezuela	Aureomicina	do	do	5.31	104
Panama	do	do	do	5.40	106
Canada	Aureomycin	do	do [3]	5.61	110
Australia	do	do	do [3]	5.62	110
Mexico	Aureomycina	American Cyanamid	do [3]	5.82	114
Italy	do	Alfar	Italy	5.86	115
Austria	Aureomycin	Lederle	United States [3]	6.26	122
Holland	do	do	Belgium	6.44	126
India	do	do	United States [3]	[4] 6.92	136

[1] Hearings, pt. 24, p. 13741.
[2] Calculated from price for 10.
[3] Bulk only.
[4] Calculated from price for 8.

Source of data: United States: "American Druggist Blue Book, 1959–60." Foreign: Prices collected by Department of State from American Embassies abroad for the subcommittee in the spring of 1959.

In the case of tetracycline, the State Department reported prices for 16 foreign countries in the spring of 1959. While foreign prices were shown for each of the five U.S. sellers in various countries, only American Cyanamid's Achromycin was represented in all 16; thus, Cyanamid's prices are shown in table 20, as representative of the foreign tetracycline picture.[51] The lowest prices are found in Argentina, Brazil, West Germany, England, and Japan, in each of which the price is below the U.S. quotation.

On the other hand, prices are above the U.S. level in 11 foreign countries. The comparatively high prices in Italy, Austria, Belgium, and the Netherlands are especially surprising in view of the presence of foreign producers and their generally lower level of prices for other drug products. The explanation may lie in the existence for this important and highly profitable product of a complex international network of patent licensing and cross-licensing agreements.

[51] Where two or more of the American sellers offer tetracycline in the same foreign market their prices are, with few exceptions, identical. See hearings, pt. 24, p. 13472.

TABLE 20.[1]—*Tetracycline—Comparative U.S. and foreign prices, 1959*

[250 mgm. capsules, 16's]

Country	Brand name	Manufacturer	Price to druggist	Price as percent of U.S. price
United States	Achromycin	Lederle	$5.10	100
Argentina	Acromicina	Cyanamid Arg.	1.19	23
Brazil	do	Lederle	3.40	67
Germany	Achromycin	do	4.31	85
United Kingdom	do	Cyanamid of Great Britain	4.57	90
Japan	Acromycin	Lederle, Japan	[2] 4.58	90
Iran	Achromycin	Lederle	5.12	100
Venezuela	Acromicina	do	5.31	104
Panama	do	do	5.40	106
Australia	Achromycin	do	5.62	110
Canada	do	do	5.66	111
Mexico	Acromicina	American Cyanamid	5.82	114
Italy	do	Alfar (Cyanamid license)	5.86	115
Austria	Achromycin	Lederle	6.02	118
Holland	do	do	6.44	126
India	do	Lederle, India	[3] 6.52	128
Belgium	do	Lederle	6.87	134

[1] Hearings, pt. 24, p. 13742.
[2] Calculated from price for 10.
[3] Calculated from price for 8.

Source: United States: American Druggist Blue Book, 1959-60. Foreign: Prices collected by the Department of State from American Embassies abroad for the subcommittee in the spring of 1959.

RATIONALIZATIONS OF FOREIGN PRICE VARIATIONS

What is the explanation for these widespread differences in price, and particularly for the fact that drug prices abroad are generally lower, and sometimes far lower, than in the United States? Witnesses for the various companies offered a variety of rationalizations, none of which, however, included anything which could be remotely described as "dumping" below cost. On the contrary, the witnesses conceded that foreign sales even at prices substantially below U.S. levels were still profitable.

Chas. Pfizer & Co., for example, conducts more extensive foreign operations than any other U.S. manufacturer; approximately 45 percent of the company's 1959 sales of $253 million were made in foreign markets. Yet its foreign markets were more profitable than the domestic market:

> Senator KEFAUVER. How can you make more money abroad on less sales than you can in the United States?
>
> Mr. MCKEEN. Senator, with your permission, I would like to keep that as a trade secret.[52]

Referring to a particular product, Mr. McKeen acknowledged that Diabinese is sold in Italy to meet Farmitalia's price of $1.41 per bottle (against $5.40 in the United States). Mr. McKeen did not contest the chairman's surmise that Pfizer would hardly seek this business unless some profit were made at the low price, replying simply, "I don't know how much we are selling, Senator." [53]

Similarly, the chairman of American Home Products Corp. was asked about the tranquilizer Sparine, priced to the U.S. druggist at

[52] Hearings, pt. 20, p. 11245.
[53] Ibid., p. 11249.

$3 for the same quantity as is sold to the Australian druggist for 94 cents:

> Senator KEFAUVER. You make a profit in Australia, don't you?
>
> Mr. BRUSH. Yes; we do.[54]

Again, Mr. Eugene Beesley, president of Eli Lilly & Co., was questioned about V-Cillin tablets, priced to the British druggist at $6.50 for a quantity which in 1959 cost the American druggist $18:

> Senator KEFAUVER. Do you make a profit on your sales in Great Britain?
>
> Mr. BEESLEY. I think we do.[55]

Lower wage rates were the most frequently cited explanation for the lower prices abroad. For example, when Mr. John T. Connor of Merck was asked to explain the extraordinary difference between the price of Merck's prednisone to the English druggist ($7.53 per 100 tablets) and the price to the U.S. druggist ($17.90), he stated:

> We are all familiar with the fact that foreign material, labor, and other costs of doing business are frequently below our own * * *. It is evident that where we have the benefit of these lower costs, we can sell our finished pharmaceutical products at a lower price than would be possible in the United States.[56]

According to Mr. John E. McKeen of Chas. Pfizer & Co.:

> Any U.S. manufacturer who sells drugs or other products abroad will tell you that the lower wage rates in foreign countries result in much lower costs in every phase of business operation, in production, in selling, distribution, administration, and so forth.[57]

This explanation of course would apply not at all where the manufacturing operations are conducted entirely in the United States, and only to a slight extent where the bulk powder is made here and the tableting and bottling done abroad. But even where this is not the case, production costs are so low that differences therein could hardly be sufficient to explain price differentials of the magnitude observed. Where a product such as prednisolone sells in England for 7.5 cents per tablet and in the United States for 17.9 cents, it is difficult to see how differences in wage costs (which constitute only a small proportion of total manufacturing costs) could possibly explain a difference in price which is more than six times the total cost of producing, tableting, bottling, and packaging the product in the United States.

Perhaps realizing the lack of persuasiveness of this wage-cost argument, the next step was to extend it to selling costs. Mr. Alvin Brush said that his firm, American Home Products Corp., could sell Sparine profitably in Australia at a price less than one-third of the U.S. price because U.S. wages are three times as high as Australian wages.

[54] Hearings, pt. 16, p. 9281.
[55] Hearings, pt. 24, p. 14151.
[56] Hearings, pt. 14, p. 8066.
[57] Hearings, pt. 20, p. 11246.

> Senator KEFAUVER. All this [difference] is wages?
> Mr. BRUSH. Pretty near.
> Senator KEFAUVER. Our information is in the actual making of the chemical——
> Mr. BRUSH. It is the selling.
> Senator KEFAUVER. Wait just a minute. Machinery is used that is highly mechanized. We have had reports that the use of labor in the actual manufacture of a chemical product such as this is not large, as has been brought out before.
> Mr. BRUSH. But we have our cost of distribution; we have our detail men. We have the same expenses in Australia, but we do it on a much lower scale. The wages are much lower.[58]

But how would this explain the relatively high prices in such low-wage (and presumably also low selling-cost) countries as India, Venezuela, and Mexico for tetracycline; as the same countries plus Panama for Aureomycin; as Mexico and Panama for chlorpropamide; as Venezuela, India, and Iran for meprobamate; and as Japan, Panama, and Italy for prednisone?

Moreover, where through a patent monopoly or other factors, a company has substantial control over price, its selling costs can become as large as the company wills them to be. Under such circumstances they are not an independent variable, but a reflection of company policy. To cite higher selling costs in a country where a company does have substantial control of the market as the explanation for a price level higher than in another country in which there is no significant control of the market is to interject monopoly power among the classical determinants of competitive prices.

A final argument advanced by industry witnesses relates to the question of converting foreign prices to U.S. dollar equivalents at prevailing exchange rates. Several witnesses challenged the propriety of such a computation, but there is only one set of circumstances in which this objection has even partial validity, i.e., where a nation is devaluing its currency in foreign exchange markets while internal prices, either because of controls or inertia, are rising less rapidly than the rate of devaluation. This situation was described by Mr. John Connor, of Merck:

> Third, foreign currency may have been devalued in terms of U.S. dollars * * * Normally, any change in the price to the consumer of the pharmaceutical product abroad lags behind the change in the rate of exchange. Obviously, as the foreign currency weakens, the foreign catalog price of the product will decrease in terms of U.S. dollars, although we don't sell in terms of U.S. dollars in those countries, so that it is a rather difficult comparison, anyway.[59]

A particular instance of this type was cited by Mr. Ernest Hesse, general manager of American Cyanamid's International Division, to explain the low price for his company's Achromycin reported in Argentina.[60] According to Mr. Hesse, this reflected the fact that

[58] Hearings, pt. 16, p. 9282.
[59] Hearings, pt. 14, p. 8068.
[60] Hearings, pt. 24, p. 13745 ff.

during several years of currency devaluation, government-controlled drug prices rose less rapidly than the dollar value of the peso fell; in the year between the removal of Argentina price controls in August 1959 and the subcommittee's hearings in September 1960, he stated that Cyanamid had raised its Achromycin price in Argentina by 39 percent.

But did Cyanamid make money at the low controlled price for Achromycin, which Mr. Hesse described as "unrealistic"? When first asked this question, Mr. Hesse flatly stated, "No, we did not." [61] Pressed further, however, he altered his position:

> Senator KEFAUVER. All right, did you make a profit selling at $1.19 in Argentina?
>
> Mr. HESSE. At the present time in Argentina, or are you referring to past years?
>
> Senator KEFAUVER. At the time you were selling at $1.19.
>
> Mr. HESSE. We never sold for $1.19, sir. We sold in pesos and this $1.19 figure, I have tried to convince you, is an unrealistic figure. It is meaningless.
>
> * * * * * * *
>
> Senator KEFAUVER. I just want to know one thing * * * Did you make a profit when you were selling at approximately this price to the druggist?
>
> Mr. HESSE. At the peso equivalent of $1.19, as converted by them, if we did, it is a very small profit, because you can't survive an era that we survived in the Argentine, going through a period of controlled prices, and expect to have a highly profitable organization.
>
> Senator KEFAUVER. Then you think you may have made a small profit?
>
> Mr. HESSE. We view our international business on the basis of 84 markets. In 84 markets we are making a satisfactory profit * * *
>
> Senator KEFAUVER. I was asking you about Argentina and I thought you said you made a very slight profit.
>
> Mr. HESSE. I believe that is right. I don't have the exact figures.[62]

If, indeed, the Argentine price cited by the subcommittee was a profitable price, there appears to be no reason not to use it in comparison to the U.S. price of $5.10.

The foreign exchange conversion argument is applicable only in the situation of an unstable foreign currency. For most of the countries from which prices were presented, exchange rates have been stable for some years, and there can be no objection to conversion to U.S. dollars at prevailing exchange rates. In discussing the price of a product in West Germany, for example, Mr. Hesse agreed that the conversion to U.S. dollars could properly be made: "That, in dollars—this is a stable currency and we don't make the objection we make in the Argentine and Brazil—the conversion we have no quarrel with * * *" [63]

[61] Hearings, pt. 24, p. 13746.
[62] Hearings, pt. 24, pp. 13747-8.
[63] Hearings, pt. 24, p. 13751.

What appear to be more reasonable explanations for the international price differences than the rationalizations offered by the drug companies are set forth in part III, "Patents and Research in Drugs."

CHAPTER 3. THE PROFIT STANDARD

Perhaps the most commonly used test of the reasonableness of prices is the degree of profitability. Stated simply, total profits are the remainder when all costs and expenses are subtracted from receipts. The subtraction of the additional element, taxes, yields "net profits after taxes" which is the measure that will be used in this chapter.

Profit data are usually available in this country for any large corporation taken as a whole. Through special surveys of the type conducted by the subcommittee, they can be obtained for a subsidiary or division of a corporation. Profit figures relating to an individual product are not only something of a rarity; businessmen often contend that they are meaningless since in a multiple-product company they necessarily reflect arbitrary allocations of overhead, or indirect costs, among individual products. Not infrequently, however, businessmen themselves make such allocations in order to get some idea of the profitability of their various products.

PROFITS ON INDIVIDUAL PRODUCTS

The hearings contained two instances where drug companies did keep their accounting records in sufficient detail and did make the allocations necessary to arrive at their own estimates of costs and profits on individual drugs. Mr. Hoyt, president of Carter Products, Inc., presented a tabulation of costs, expenses, and profits for his company's most important product, Miltown, computed in terms of cents per pill:[84]

Miltown costs and profit per tablet:	*Cents per tablet*
Carter receives from wholesalers	5.1
Manufacturing costs (actual)	.7
Selling expenses and administration	.4
Advertising, promotion, and clinical samples	1.0
Research and royalties	.4
Income taxes	1.4
Total cost per tablet	3.9
Net profit	1.2

As compared to an actual production cost of .7 cents, net profit after taxes is 1.2 cents per pill or nearly a quarter of the sales dollar. Selling, advertising, and administration expenses are exactly double the cost of production.

As has been noted, all of the meprobamate produced in this country is made by seven companies under license from Carter. None is permitted to sell the product, except to Carter. In 1958 Carter purchased meprobamate at an average price of $4.77; it then kept part for its own needs and sold almost all the rest to American Home Products, which sells meprobamate in the United States and abroad under the trade name Equanil, and to American Cyanamid which has

[84] In making his estimates for the overhead items and taxes, Mr. Hoyt used the average for Carter's ethical drug business. Hearings, pt 16, pp. 9161, 9164.

the exclusive right to sell the product abroad under the trade name, Miltown. Carter's purchases in 1958 amounted to 983,000 pounds of meprobamate (nearly 500 tons) of which it sold 614,000 pounds in bulk, retaining 369,000 for its own Miltown pills.[65] At 400 mgm. per tablet, Carter's 184 tons of powder would make 400 million pills after reasonable allowances for wastage. At a net profit after taxes of 1.2 cents per tablet, this would represent net profits of $4.8 million. Carter also made over $3 million before taxes on the sale of bulk meprobamate, and received some $3 million more in royalties, mostly from the same drug.

Bristol Laboratories also maintained sufficiently detailed accounting records to provide their management with profit data on their most important product, at least on one large Government purchase of tetracycline.[66] On May 21, 1957, Bristol bid $1.828 per bottle on a military medical supply agency solicitation for 454,390 bottles of tetracycline for oral suspension. Two days later, the treasurer of Bristol Laboratories sent a memorandum to their president setting forth the shipping schedule, and the costs, taxes and profits applicable to this specific bid, covering 5 months into the future.

TABLE 21.[1]—*Bristol Laboratories, Inc., Syracuse, N.Y.—Government order profit and loss*

	July		August		October		Total	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Shipments in units	187,200		179,782		87,408		454,390	
Sales	$342,202		$328,641		$159,782		$830,625	
Cost of goods sold	63,648	18.6	61,126	18.6	29,719	18.6	154,493	18.6
Sales expense	10,266	3.0	9,859	3.0	4,793	3.0	24,918	3.0
Staff expense	7,528	2.2	7,230	2.2	3,515	2.2	18,273	2.2
Royalties	29,087	8.5	27,934	8.5	13,581	8.5	70,602	8.5
Total expenses	110,529	32.3	106,149	32.3	51,608	32.3	268,286	32.3
Net profit before taxes	231,673	67.7	222,492	67.7	108,174	67.7	562,339	67.7
New York State franchise	12,742		12,237		5,950		30,929	
Federal income tax	120,412		115,640		56,223		292,275	
Total tax	133,154		127,877		62,173		323,204	
Net profit after taxes	98,519		94,615		46,001		239,135	
Per share (cents)	6.16		5.92		2.88		14.96	

[1] Hearings, pt. 24, p. 13902.

NOTE.—Attachment I to M. S. Weeden memo to F. N. Schwartz, May 23, 1957.

Total costs and expenses as shown by the treasurer's table were $268,286, or 32.3 percent of the price, of which the largest element is cost of goods sold (18.6 percent). After the payment of taxes, net profits are shown to be $239,135, equivalent to 28.8 percent of the bid price to the Government.

On a sale to the Government, selling expenses are, of course, much lower than on equivalent sales to retail drugstores. At the same time the price is much lower than the commercial price. The commercial price listed in the 1957–58 edition of the American Druggist Blue

[65] Hearings, pts. 16 and 17, pp. 9149 and 9658.
[66] Hearings, pt. 24, p. 13902.

Book of $2.54 each is for the most nearly comparable commercial item at the same period, or 71 cents per bottle above the bid price to the Government. The MMSA package and the commercial dosage form differed only by the addition of water, a nominal cost item. If the treasurer's tabulation is recalculated, on an assumed commercial sale at $2.54, with the entire additional amount allocated to selling and promotion expense and royalties, leaving taxes and net profit after taxes unchanged, selling expenses would represent approximately 27 percent of sales, which is not greatly different from the figure for Bristol Laboratories as a whole, 32 percent. Net profit after taxes would be some 21 percent of the sales dollar.

Against the historical background of such cost information as has been collected over the years for manufacturing industries, it is safe to say that a profit rate on sales of an important product of around 20 percent, after taxes, has few parallels. It is on the basis of profit showings such as these for individual products that the drug companies have been able to establish their enviable position among American corporations in terms of overall profitability.

PROFITS IN DRUGS VERSUS ALL MANUFACTURING

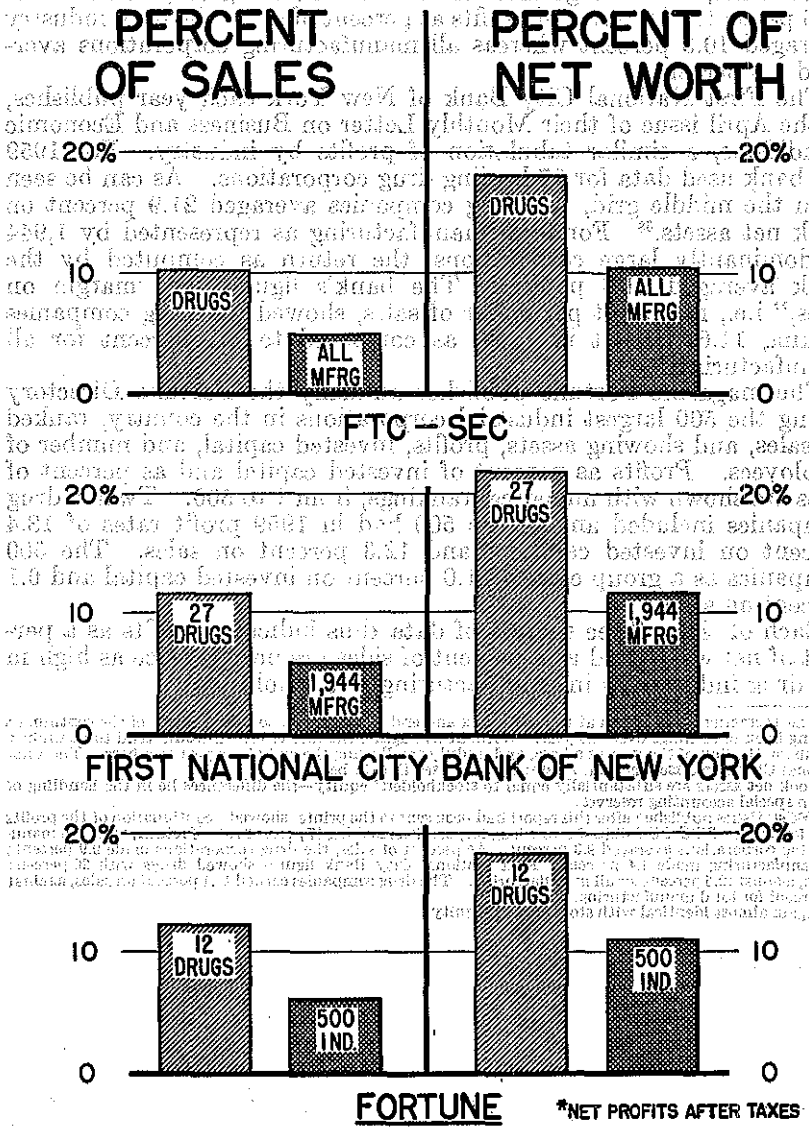
The customary method of determining the profitability of a given corporation is by relating its profits after taxes to its net worth, sometimes referred to as stockholders' equity or investment in the company. The percentage, known as rate of return, averaged 10, 11, or 12 percent annually for all manufacturing during most of the decade of the 1950's. Profit on investment is the standard economic comparison; it is the rate which may be contrasted with the rate of interest to show the premium earned by the risk bearers. Without this measure the investor has no way of knowing which industries are more attractive than others in terms of their yields on a given investment.

Another measure of more limited usefulness is profit as a percentage of sales. Profit on sales is a handy figure with which to compare two companies doing the same kind of business. Faced with comparable problems of production and marketing, a more efficient company will tend to have a higher profit per dollar of sales than a less efficient company. Different industries normally have different rates of profit on sales and therefore comparison of companies in different industries may not be too meaningful. It is, however, the measure most frequently cited in the hearings by company witnesses; accordingly, comparisons of profit rates in the drug industry versus all manufacturing will be shown in terms of this measure as well as in terms of net worth. For all manufacturing, profit on sales in the 1950's averaged a little under 5 percent, or less than half of the profit rate on net worth.

Several compilations of profit data are published annually by both Government and business sources. Data from three of these compilations are shown in the three grids of the accompanying chart, "Drug Company Profits Compared with All Other Manufacturing, 1959." Profits are expressed as a percent of net worth and of sales.

CHART 2

DRUG COMPANY PROFITS* COMPARED WITH ALL MANUFACTURING 1959



*NET PROFITS AFTER TAXES

The Federal Trade Commission-Securities and Exchange Commission series "Quarterly Financial Report for Manufacturing Corporations" presents financial data for corporations classified by the Standard Industrial Classification. Among these is the "three-digit" industry group, "Drugs," which includes companies primarily engaged in manufacturing, fabricating, or processing medicinal chemicals and pharmaceutical products, as well as those grading, grinding, and milling botanical products. Using the average stockholders' equity at the beginning and end of 1959 as the denominator, and the profits for the year as the numerator, the rate of return for the drug industry, as can be seen from the top grid, was 18.1 percent.[67] In contrast, the average rate for all manufacturing corporations was 10.5 percent. In terms of profits as percent of sales, the drug industry averaged 10.3 percent whereas all manufacturing corporations averaged 4.8 percent.

The First National City Bank of New York each year publishes, in the April issue of their Monthly Letter on Business and Economic Conditions, a similar tabulation of profits by industry. For 1959 the bank used data for 27 leading drug corporations. As can be seen from the middle grid, the drug companies averaged 21.9 percent on book net assets.[68] For total manufacturing as represented by 1,944 predominantly large corporations, the return as computed by the bank averaged 11.6 percent. The bank's figures for "margin on sales," i.e., net profit per dollar of sales, showed the drug companies making 11.6 percent in 1959, as compared to 5.8 percent for all manufacturing.[69]

The magazine Fortune publishes annually the Fortune Directory listing the 500 largest industrial corporations in the country, ranked by sales, and showing assets, profits, invested capital, and number of employees. Profits as percent of invested capital and as percent of sales are shown with numerical rankings, from 1 to 500. Twelve drug companies included among the 500 had in 1959 profit rates of 18.4 percent on invested capital[70] and 12.3 percent on sales. The 500 companies as a group earned 11.0 percent on invested capital and 6.1 percent on sales.

Each of these three sources of data thus indicates profits as a percent of net worth and as a percent of sales are nearly twice as high in the drug industry as in manufacturing as a whole.

[67] The averaging of net worth at the beginning and end of the year is to take account of the continuous plowing back of earnings over the year. Without averaging, the rate of return would tend to be unduly large using the first of the year as a base, and unduly small using the end of the year as a base. The First National City Bank uses the Jan. 1 base; Fortune uses Dec. 31 base.

[68] Book net assets are substantially equal to stockholders' equity—the differences lie in the handling of certain special accounting reserves.

[69] 1960 statistics published after this report had been sent to the printer showed a continuation of the profits trend for drugs. FTC-SEC data showed drug corporations making 17 percent rate of return, while all manufacturing corporations averaged 9.3 percent. As percent of sales, the drug corporations made 9.9 percent; all manufacturing made 4.4 percent. First National City Bank figures showed drugs with 20 percent return, against 10.5 percent for all manufacturing. The drug companies earned 11.1 percent on sales, against 5.4 percent for total manufacturing.

[70] Again almost identical with stockholders' equity.

RANKING OF DRUG COMPANIES AMONG 500 LARGEST INDUSTRIAL CORPORATIONS

In terms of profitability, how do the individual drug companies rank among the Nation's large manufacturing corporations? The answer can be seen from the accompanying listing (table 22) which is based on Fortune's 1958 rankings by net profit as percent of invested capital and as percent of sales.[71] The first 50 corporations are shown on each ranking, together with those drug companies which rank below the first 50. All of the 20 major drug companies are shown, their names being italicized.[72] Included in the tables are five drug companies which were too small to be in the Fortune Directory. For these five, Carter, Mead Johnson, Norwich, Searle, and U.S. Vitamin & Pharmaceutical, profit rates were computed by the same method used by Fortune. These companies were then inserted in the lists where their profit rates would have ranked them had they been among the 500 largest. The fact that they were not among the 500 is shown by the dashes in the rank column, the parentheses around the rates and company names, and by the footnotes after each name.

Three drug companies head the list based on invested capital: Carter, American Home Products, and Smith Kline & French. Ten others are within the first 50, and 4 more in the next 50.

The only drug company below the average for the entire 500 was Olin Mathieson Chemical Corp., into which Squibb was merged several years ago. Since Squibb accounted for less than one-fifth of the corporation's sales in 1958, but over four-fifths of the net profit, it is likely that Squibb would have been well above the average for the 500 had it not been buried in this conglomerate company.

In the percent of sales ranking, the drug companies are again conspicuously distributed in the upper part of the list. Three of the first six firms are drug companies, while once again 13 of the 20 drug companies are in the top 50; 19 are well above the average for the whole 500, and only Olin Mathieson is below the average.

[71] Hearings, pt. 16, pp. 8945, 8949.
[72] CIBA and Hoffmann-La Roche, subsidiaries of foreign companies, are not included.

TABLE 22–A.—*Fortune ranking of major industrial corporations by net profit after taxes, as percent of invested capital, 1958*

Rank	Rate	Company	Rank	Rate	Company
—	(38.2)	*(Carter Products, Inc.)* [1]	33	19.3	Northrop Aircraft, Inc.
1	33.5	*American Home Products Corp.*	34	19.1	Minnesota Mining & Manufacturing Co.
2	33.1	*Smith Kline & French Laboratories.*			
3	32.4	Gillette Co.	35	19.0	American Motors Corp.
4	29.3	Revlon, Inc.	36	18.5	General Electric Co.
5	28.9	Avon Products, Inc.	37	18.3	Gerber Products Co.
6	28.4	Chemstrand Corp.	38	18.1	Minute Maid Corp.
7	26.6	Champion Spark Plug Co.	39	18.0	Campbell Taggart Associated Bakeries.
8	24.6	Botany Mills.			
9	24.1	Brunswick-Balke-Collender Co.	40	18.0	*The Upjohn Co.*
—	(23.7)	*(Norwich Pharmacal Co.)* [2]	41	18.0	Temco Aircraft Corp.
10	23.6	Pepsi-Cola Co.	42	17.9	Otis Elevator Co.
11	23.4	Texas Instruments, Inc.	43	17.8	R. J. Reynolds Tobacco Co.
—	(23.2)	*(G. D. Searle & Co.)* [2]	44	17.6	Ingersoll-Rand Co.
12	22.8	Tecumseh Products Co.	45	17.5	International Business Machines Corp.
13	22.7	*Sterling Drug, Inc.*			
14	22.6	Rohr Aircraft Corp.	46	17.4	Hershey Chocolate Corp.
15	22.4	Kellogg Co.	47	17.3	Addressograph-Multigraph Corp.
16	22.2	Permanente Cement Co.	48	17.3	*Chas. Pfizer & Co., Inc.*
17	22.2	Maytag Co.	49	17.2	Zenith Radio Corp.
18	22.2	McDonnell Aircraft Corp.	50	17.1	*Merck & Co., Inc.*
19	21.8	*Schering Corp.*	*	*	* * * * * *
20	21.8	American Chicle Co.	55	16.3	*Vick Chemical Co.*
21	21.6	*Parke, Davis & Co.*	*	*	* * * * * *
22	21.6	Cessna Aircraft Co.	70/71	(14.8)	*(Mead Johnson Co.)* [3]
23	21.4	P. Lorillard Co.	*	*	* * * * * *
24	21.1	Miles Laboratories Inc.	73	14.6	*Abbott Laboratories*
25	21.0	Polaroid Corp.	*	*	* * * * * *
—	(20.9)	*(U.S. Vitamin & Pharmaceutical Corp.)* [3]	83	14.2	*Bristol-Myers Co.*
			*	*	* * * * * *
26	20.4	Chance Vought Aircraft, Inc.	101	13.2	*Eli Lilly & Co.*
27	20.3	McGraw-Hill Publishing Co., Inc.	*	*	* * * * * *
28	20.2	Briggs & Stratton Corp.	167	11.0	*American Cyanamid.*
29	20.1	*Warner-Lambert Pharmaceutical Co.*	*	*	* * * * * *
30	19.8	Thomas J. Lipton, Inc.	231/232	9.5	*Average,* the 500 largest industrials.
31	19.4	Mesta Machine Co.	*	*	* * * * * *
32	19.3	United Engineering & Foundry Co.	460	2.7	*Olin Mathieson Chemical.*

[1] Not in Fortune list. Source: Moody's Industrials, 1959; data for fiscal year ending Mar. 31, 1959.
[2] Not in Fortune list. Source: Moody's Industrial Manual, 1959.
[3] Not in Fortune list. Source: Moody's Industrial Manual, 1959; data for fiscal year ending Nov. 30, 1958.

TABLE 22–B.—*Fortune ranking of major industrial corporations by net profit after taxes, as percent of sales, 1958*

Rank	Rate	Company	Rank	Rate	Company
1	21.9	Amerada Petroleum Corp.	32	11.2	United Shoe Machinery Corp.
—	(21.3)	(*G. D. Searle & Co.*).[1]	33	11.1	Polaroid Corp.
2	18.9	Ideal Cement Co.[1]	34	11.0	*Abbott Laboratories.*
3	18.7	E. I. du Pont de Nemours & Co.	35	11.0	Harbison-Walker Refractories Co.
4	16.8	*Smith Kline & French Laboratories.*	36	10.9	Sunray Mid-Continent Oil Co.
5	16.6	*Schering Corp.*	37	10.9	Skelly Oil Co.
6	16.5	Standard Oil of California.	38	10.8	Corning Glass Works.
7	16.5	Champion Spark Plug Co.	39	10.8	International Business Machine Corp.
8	16.3	*Parke, Davis & Co.*			
9	16.1	Lone Star Cement Corp.	40	10.8	*Chas. Pfizer & Co., Inc.*
10	15.5	Ingersoll Rand Co.	41	10.7	Champlin Oil & Refining Co.
11	15.4	United States Gypsum Co.	42	10.6	Chemstrand Corp.
12	15.2	Kennecott Copper Corp.	43	10.6	Peabody Coal Co.
13	15.1	Superior Oil Co.	44	10.4	Material Service Corp.
—	(14.4)	(*Carter Products, Inc.*).[2]	45	10.4	Hanna Ore Mining Co.
14	14.0	Permanente Cement Co.	46	10.1	Chicago Pneumatic Tool Co.
15	13.7	*The Upjohn Co.*	47	10.0	P. Lorillard Co.
16	13.7	Signal Oil & Gas Co.	48	10.0	Union Bag-Camp Paper Corp.
17	13.5	Phelps Dodge Corp.	49	10.0	Tennessee Corp.
18	13.4	*Merck & Co., Inc.*	50	9.9	Libbey-Owens-Ford Glass Co.
19	13.3	The Texas Co.	*	*	* * * * *
20	13.2	Gillette Co.	55	9.7	*Sterling Drug, Inc.*
21	13.1	*Eli Lilly & Co.*	*	*	* * * * *
22	13.1	American Chicle Co.	59	9.4	*Vick Chemical Co.*
23	12.7	Cleveland-Cliffs Iron Co.	*	*	* * * * *
—	(12.4)	(*U.S. Vitamin & Pharmaceutical Corp.*)[3]	69	8.9	*Warner Lambert Pharmaceutical Co.*
			*	*	* * * * *
24	12.2	R. J. Reynolds Tobacco Co.	83	8.4	*American Cyanamid Co.*
25	12.1	Weyerhaeuser Timber Co.	*	*	* * * * *
26	11.9	Eastman Kodak Co.	84/85	(8.2)	(*Mead Johnson Co.*)[1]
27	11.9	Gulf Oil Corp.	*	*	* * * * *
28	11.8	Ohio Oil Co.	138	6.4	*Bristol-Myers Co.*
29	11.7	Minnesota Mining & Manufacturing Co.	*	*	* * * * *
			187/188	5.4	*Average, 500 largest industrials.*
—	(11.7)	(*Norwich Pharmacal Co.*)[1].	*	*	* * * * *
30	11.3	*American Home Products Corp.*	437	1.6	*Olin Mathieson Chemical Corp.*
31	11.2	William Wrigley, Jr., Co.			

[1] Not in Fortune list. Source: Moody's Industrial Manual, 1959.
[2] Not in Fortune list. Source: Moody's Industrial Manual, 1959; data for fiscal year ending Mar. 31, 1959.
[3] Not in Fortune list. Source: Moody's Industrial Manual, 1959; data for fiscal year ending Nov. 30, 1958.

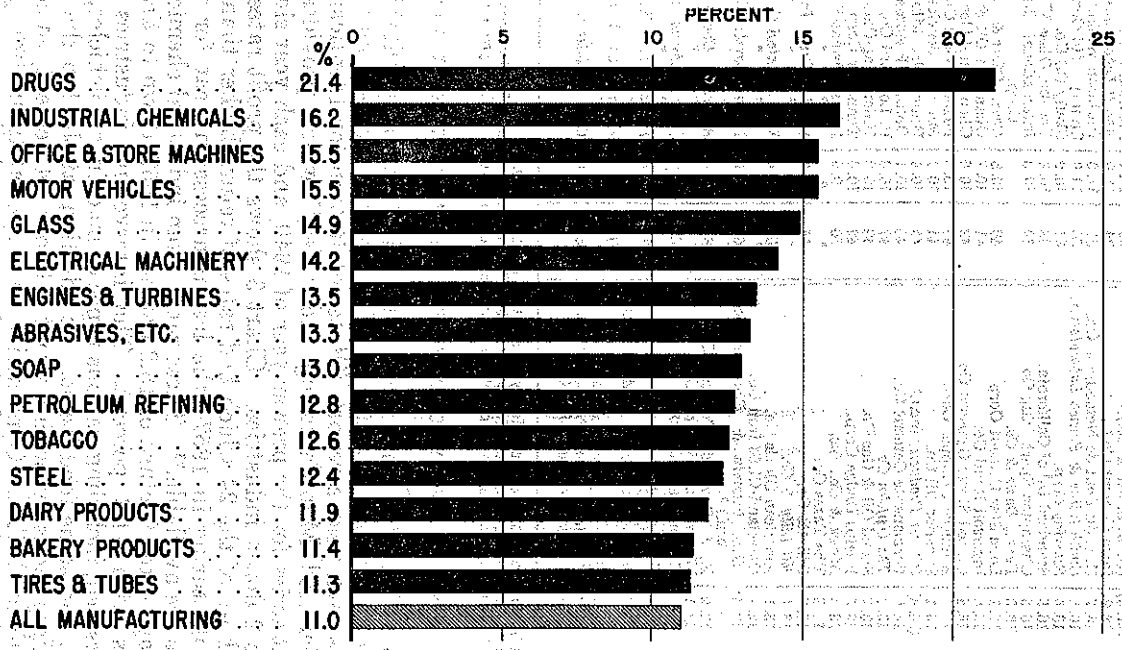
RANKING OF DRUG INDUSTRY AGAINST OTHER INDUSTRIES

How does the drug industry rank in terms of profitability against other individual industries? The Federal Trade Commission publishes each year a report, "Rates of Return for Identical Companies in Selected Manufacturing Industries," which provides consistent profit series for the prewar year of 1940, and each year since 1947, for some 2 dozen industries. Chart 3 shows the profit rates after taxes for those of the 24 which had rates of return higher than that for all manufacturing in 1957—the last nonrecession year for which these series are available.[73] These range from industrial chemicals, with an average rate of return of 16.2 percent in 1957, down to tires and inner tubes with 11.3 percent. The intervening industries are widely diversified, including various types of machinery, vehicles, glass, soap, steel, and some food items. In addition, at the top the chart shows the drug industry, with a profit rate of 21.4 percent, as computed by the Federal Trade Commission in a special tabulation prepared for the subcommittee, employing the same methodology as was used for the other industries. The sharp break between the 21.4 percent for drugs and the 16.2 percent for the next highest-ranking industry, industrial chemicals, is the most prominent feature of the chart.

[73] Hearings, pt. 14, p. 7873. The companies included in the FTC report are predominantly large- and medium-size enterprises.

CHART 3

COMPARISON OF RATES OF RETURN AFTER TAXES IN SELECTED INDUSTRIES, 1957



SOURCE: INDUSTRIES: Federal Trade Commission
ALL MFG: FTC – SEC

It should not be thought, however, that drugs have been the only highly profitable industry (see chart 4). The motor vehicles industry was ahead of drugs in the early 1950's, closely followed by industrial chemicals. Both peaked in 1950 and in 1955, attaining significantly higher profit rates than drugs.[74] Since then, however, the pharmaceutical industry has been at the top. Motor vehicles fell sharply in profitability from 1955 to 1956 and again from 1957 to 1958. Recovery in early 1959 was not maintained in the second half of the year. Industrial chemicals drifted down from 1955 to 1958.

By contrast drugs appear to be substantially recessionproof. The rate of return for 11 identical companies rose steadily from 1953 to 1957, and has held at or near that level thereafter. This industry surpassed the automobiles and industrial chemicals in 1956 and has not been seriously challenged for top place since that time.

A small reduction in the profitability of the pharmaceutical industry occurred in the latter half of 1960. For the first time in 10 years a reduction, 15 percent, was made in the prices of the major antibiotics.

PROFITS COMPARED WITH NET WORTH

The net worth of the pharmaceutical industry has grown rapidly in recent years. In 1947 the stockholders' investment in 11 leading drug companies was $287 million. By 1959, it had grown to $896 million—a threefold increase in 12 years. This is equivalent to a compound interest rate of growth of 10 percent a year.[75]

The great bulk of this increase of more than $600 million came from retained earnings. The users of drugs paid for this expansion of net worth but, of course, did not receive stock certificates to participate in the cash benefits. Only a small part of the expansion came as a result of mergers; the only significant merger in this particular group was that of Merck with Sharp & Dohme. Pfizer picked up a few small companies, but the proportion of the combined growth attributable to these companies is negligible.

Similarly, new money from the capital markets contributed little to the expansion. Preferred stock sold during the period has in part been retired.[76] Including the $20 million of preferred stock Pfizer sold through the F. Eberstadt banking house, the total new money addition to net worth in the dozen-year period probably did not exceed 5 percent of the total increase. If this amount were subtracted, the compound rate of growth would be reduced only slightly, from 10 percent a year to 9.7 percent a year.

[74] Hearings, pt. 14, p. 8086.

[75] At a compound rate of 10 percent, a given principal amount will double in about 7 years, and quadruple in just over 14 years.

[76] The major sales of drug company common stock to the general public in this period were not company financing at all, but were what are called secondary offerings. Stock held in large blocks by family groups or estates when sold to the public is usually handled by investment bankers. Proceeds go to the individuals selling and do not benefit the company whose stock is being sold. The large block of Upjohn stock sold at the end of 1958 was a secondary offering.

Borrowed money, whether raised through sale of bonds or by bank loans, does not directly increase net worth. Debts owed to others are subtracted before stockholders' equity is computed. Thus, the $40 million of debentures issued by 2 of the 11 companies presumably contributed to their profitability, but the capital amount is not reflected in the $600 million growth.

CHART 4

SOURCE: FTC – SEC