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THE ADVERTISING APPROPRIATION IN THE RUBBER TIRE INDUSTRY: A STUDY IN DECISION-MAKING

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Michigan State University of Agriculture and Applied Science

1958

This study examines decision-making concerning advertising appropriations in the rubber tire industry. The empirical evidence, collected through interviews and a questionnaire, permits the description of several aspects of the decision for a typical firm. Advertising, for example, is viewed as a significant sales technique, but it is believed that increases in expenditures call forth less than proportionate increases in sales. As a retaliatory device, advertising is ranked second to quasi-price adjustments, e.g., offering a free tube with each tire. This does not imply that pricing and product development are unimportant. The theoretical proposition seems to hold that when all but one of the sales techniques are adjusted optimally, adjustments in the one remaining have more effect than modest changes in the others.

The broad objectives of advertising are to stimulate consumer purchases and dealer support. Some attention is given to the effect of advertising in the securities market but little in the labor market. Specific objectives in terms of protecting prices versus maintaining volume are not clear. Industry executives believe that advertising cannot completely offset the price consciousness of consumers but that advertising is somewhat substitutable for price reductions.

Advertising is viewed as a highly discretionary expense item. The allocation is mechanistically related to short-run sales forecasts. The

typical approach is to apply a percentage-of-sales figure to the sales forecast in order to establish a maximum limit. If the total request exceeds the acceptable limit, it is decreased by progressively reducing the more discretionary items.

The questionnaire showed three primary determinants of the appropriation: financial condition, the need to satisfy dealers, and inventory position. The interviewees suggested that in the final committee decision a per cent of profit rule was used.

The monthly allocation varies directly with seasonality of demand. The proportion of the immediate-sales type of advertising in the total effort determines the extent of the relationship. The small firms appear to have a higher proportion of this type of advertising, so the relationship between monthly allocations and seasonality of demand is greater for the small firm than for the large.

One group of firms places little confidence in the ability of advertising to sell growing inventories without an offsetting price reduction while the other group shows high confidence. Those with the least confidence in the use of advertising in this way believe, however, that advertising is essential to sell to dealers and their appropriations are less mechanistically related to short-run sales forecasts than those of the high confidence group. Other answering patterns were disclosed.

In total, such answering patterns were consistent and explainable in terms of institutional goals. Although an attempt was made to discover respondents serving their own personal ends at the expense of the objectives of the firm, little evidence of this nature was found. In only

one instance, for example, did the findings indicate that they were more concerned with departmental needs than with the requirements of the overall organization.

_____

Chairman, Guidance Committee

THE ADVERTISING APPROPRIATION IN THE RUBBER TIRE INDUSTRY: A STUDY IN DECISION-MAKING

By

Fremont A. Shull, Jr.

A THESIS

Submitted to the School for Advanced Graduate Studies of
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Department of Economics

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PREFACE

This study stems from my interest in the relationship between economic theory and business management. The purpose has been to examine the applicability of certain aspects of economics to decisions made on advertising appropriations in selected manufacturing firms in the rubber tire industry. The study revealed that considerable economic rationale is exercised by the decision-makers in the firms studied.

I am sincerely grateful to Dr. Victor E. Smith, chairman of the dissertation committee, who has been a constant source of help, encouragement, and constructive criticism. I also owe a debt of gratitude to the other members of the committee, Professors Edward A. Brand, Denzel C. Cline, Charles Killingsworth, and Rollin H. Simonds. Moreover, I benefited greatly from the many helpful suggestions at various stages of the project made by Professor Arthur E. Warner.

It is almost impossible for me to express appreciation to my wife and family who so unselfishly sacrificed the time and energies of a preoccupied husband and parent. I also wish to acknowledge the help and cooperation of Mrs. Janet Fluck who typed the manuscript.

Fremont A. Shull, Jr.

East Lansing, Michigan
June, 1958

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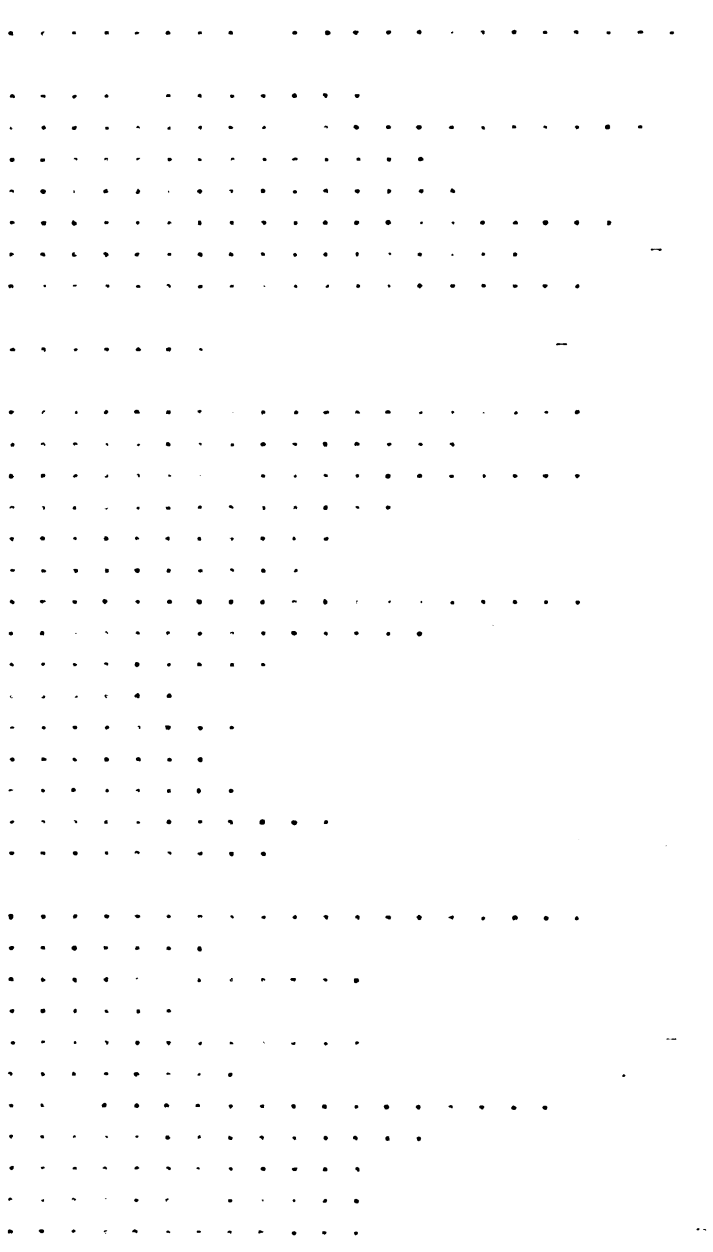


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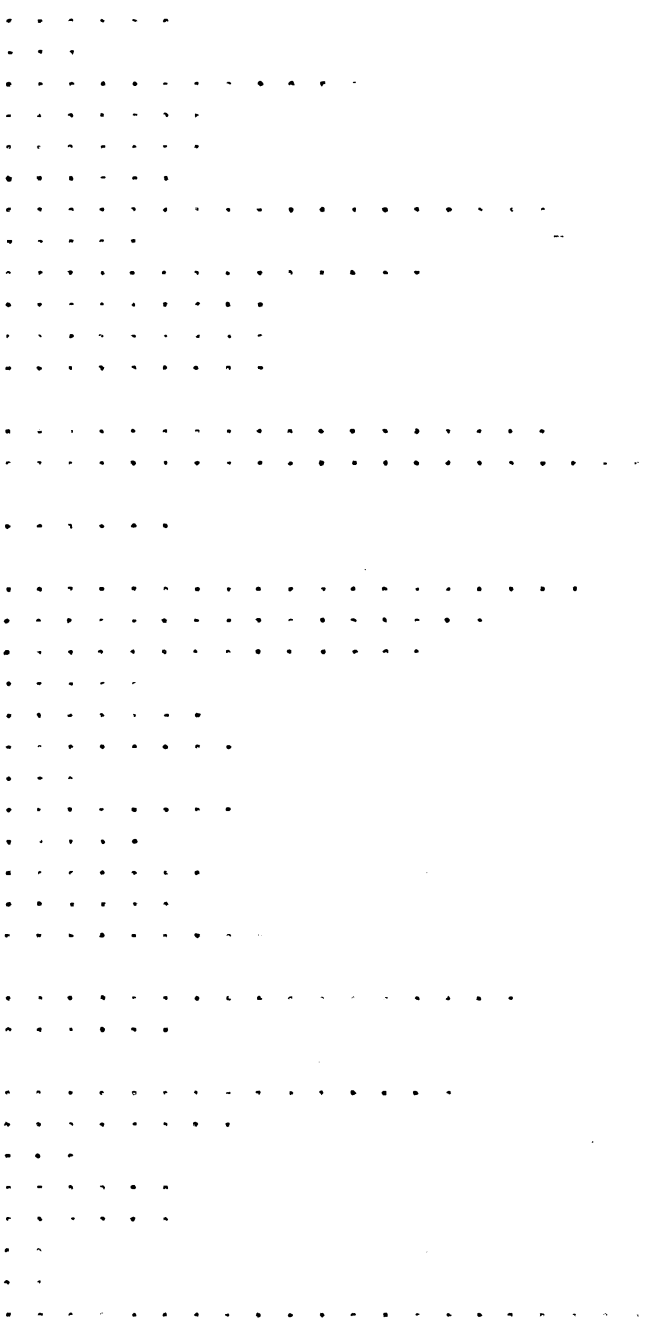


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CHAPTER I

INTRODUCTION

General Nature of the Study

Purpose. All voluntary, nonhabitual acts are preceded by decision-making. Even habitual behavior may be viewed as arising from decisions previously made. Thus this mental process pervades the behavior of all mankind. Decisions that are made by managers and which thus affect the behavior of subordinates have tremendous social importance. When discretion for marketing and manufacturing decisions is given to the entrepreneur, the process gains considerable economic significance. Therefore, decision-making is worthy of continuing study. The major purpose of this thesis is to examine some aspects of decision-making in business.

Economics is the most common prescriptive science of business behavior and thus should provide the basis for a study in decision-making. Yet the assumptions and deductions of this science are currently subjected to increasing scrutiny by other behavioral scientists, by economists themselves, and especially by students of organization theory. Therefore, it appears significant to incorporate into a study of decision-making certain propositions concerning the nature of man and institutional characteristics suggested by organizational theorists.

The major goal of economics is to construct logical systems (or models) from which predictions about some future set of economic

phenomena can be determined.[1] In order to have pragmatic value, any model must approximate the conditions of the real world. But the inclusion of all features of the real world is impossible and such an attempt is likely to complicate the analysis hopelessly. The problem, then, is to select the essential features of complex reality, yet to permit the model to be intellectually manageable. The conclusions and principles emanating from such simplified assumptions are never fully descriptive of the real world.[2] The need for restrictive assumptions, however, should not invalidate the application of logic to business problems.

Marketing is a phase of business in which management apparently does not utilize fully the theoretical propositions that might facilitate rational behavior. Advertising is the marketing activity upon which major reliance is placed for the manipulation of demand in the market place. Since economic theory includes the "science of exchange," this discipline should be of paramount importance to decision-makers in marketing who use advertising. This is particularly true since economics includes analyses of models of imperfect competition. These formulations provide the means for examining selling costs, of which advertising is one. Yet the determination of the advertising appropriation appears to be unscientific, beset by folklore, rules-of-thumb, and other "nonrational" characteristics.

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[1] See E. Ronald Walker, Economic Theory to Policy (Chicago: University of Chicago Press, 1943), p. 54.

[2] See Fritz Machlup, "Evaluation of the Practical Significance of the Theory of Monopolistic Competition," The American Economic Review, XXIX (June, 1939), p. 228.

A brief analysis of the most common method for determining the appropriation illustrates the conceptual weaknesses of current techniques. The most widely used method[3] for determining the advertising appropriation is the application of some given, generally fixed, ratio to some other variable, e.g., past or future sales.

The justification for this method is found in the assumption that, since expressing advertising as a percentage of some other variable has proved effective in the past, it will continue to be equally successful in the future.[4] A second defense has been offered: Administrative management is more likely to accept a proposal determined in such a manner, since it offers an ". . . illusion of control that comes from relating this essentially discretionary element of expense in a systematic way to revenue or volume."[5] However, ". . . inertia and the lack of a more logical and equally definitive standard are probably the most important explanations for its popularity. . . ."[6]

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[3]Editorial, "How Is Advertising Bought?" Printers' Ink, CCXIX (June 1, 1951), p. 27, presents the prevailing techniques, according to their occurrence, as:

	Method Used	Number of Companies
(1)	per cent of sales	35
(2)	task	26
(3)	arbitrary	25
(4)	per unit of sales	14
(5)	other	3
(6)	no budget	4
(7)	no answer	1

[4]Cf. Roger Barton, Advertising Handbook (New York: Prentice-Hall, Inc., 1950), p. 110.

[5]Joel Dean, Managerial Economics (New York: Prentice Hall, Inc., 1951), p. 372.

[6]Ibid., p. 371.

The most damaging criticism of this approach is that if advertising produces sales, then planning the advertising expenses should precede--not follow--the determination of sales expectations.[7] A related criticism is that the effects of any one campaign are directly related to its quality as well as to competitor activities and other external conditions. Although the percentage-of-sales method has the virtue of simplicity, it may result in an appropriation entirely unrelated to the needs of the advertiser.

There are many advantages of studying the advertising appropriation decision. The decision process appears to be relatively unsophisticated; the theoretical formulations associated with this function are relatively recent in origin; and empirical data for this area are scarce. Furthermore, certain organizational and human variables appear to play a greater role in advertising decisions than they do for many other areas of business. One such characteristic is the attitude of top management that employs an advertising agency. Some feel ". . . that these independent firms do the largest share of the work, and thus management can delegate the problems almost entirely to the agency, using only an inexpensive link, the department, with them."[8]

Another characteristic is the fact that, historically, business leadership has been dominated by officers with backgrounds from two

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[7]For an excellent theoretical criticism of the percentage-of-sales method, see Arne Rasmussen, "The Determination of Advertising Expenditure," The Journal of Marketing, XVI (April, 1952), pp. 439-46.

[8]John L. Burns, "The Attitude of Top Management Toward Advertising," Western Advertising (December, 1951), p. 31.

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general areas, production and finance.[9] When the production-oriented officers ". . . thought of cost, it was cost per unit of product; they were successful because they had reduced this cost and had thereby increased profit. Anything which increased cost per unit was a move in the wrong direction from their standpoint."[10] Officers primarily finance-oriented were conservative and interested largely in the preservation and development of asset or equity accounts. To them, expenditures for the purpose of increasing such accounts were, at best, of a nebulous character.[11]

Still another aspect of the problem is that frequently recommendations from advertising personnel for the amount of money to be spent are ". . . considered in executive session and more or less casually adjusted to fit into an over-all budget in which tangible requirements for plant equipment and operating demands present much more factual evidence of their needs and effectiveness of their needs than is available about the intangible [sic] of advertising."[12] Advertising personnel may be excluded from appropriation decisions or their recommendations may be minimized because of the opinion that "advertising staffs are not 'sales trained,' [that] . . . advertising managers are 'creative'

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[9] One advertising manager said: "There should be fewer experts from company management forcing their theories down advertising managers' throats." Nathan Kelne, "What Do Industrial Ad Managers Think of Top Management?" Printers' Ink, CCXXII (May 7, 1954), p. 32.

[10] Roy W. Jastram, "The Development of an Advertising Appropriation Policy," The Journal of Business of the University of Chicago, XXIII (July, 1950), p. 161.

[11] Idem.

[12] A. J. Gallager, "New Advertising Yardstick for Management," Part I, Printers' Ink, CCXVIII (September 15, 1950), p. 42.

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and 'artistic.'"[13] A rather common attitude seems to be that the individuals involved in advertising are neither practical nor "company-minded," and that advertising tends to be an item that must be "sold" to top management, while the latter feels that it must resist spending.[14]

Scope and limitations. The intent of this study is to restrict the universe to one particular industry, rather than to sample a cross section of business by type and size. This permits one set of decision variables to be constant. The industry chosen should be one in which the firms distribute their products primarily to ultimate consumers, i.e., to household users. The advertising of such firms is likely to be a significant item and management therefore should spend considerable thought on the determination of such an expenditure. Another requirement is that the individual firms be of sufficient size to warrant several management levels and to include an advertising department. On the other hand, an upper limit on the size of the firms is necessary in order to increase the accessibility of the top management group to the researcher. The rubber tire industry meets these requirements.

Reducing the universe to a single industry limits the number of available cases; this restricts the generality of any conclusions. Of the 18 firms that met the original restrictions, three firms were unacceptable: Two of them because they did little or no consumer advertising; the remaining one because it was a foreign-owned subsidiary.

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[13] Burns, op. cit., p. 31.

[14] Idem. Joel Dean, op. cit., p. 553, states: "Allocation of funds among projects, moreover, is often determined by skill and persistence of persuasion rather than by objective indexes of company welfare."

An additional firm stated that no answer to the questionnaire could be given because of the high degree of decentralization of advertising activities. Of the remaining 14 firms, however, 13, or slightly more than 93 per cent, responded.

The information obtained from the questionnaire dealt largely with perceptions; thus the interpretation of the empirical data is partially limited by the accuracy with which the respondents perceived their environment. More important, however, is whether or not the respondents answered accurately according to their perceptions and whether or not they act in terms of their perceptions. The responses to the questionnaire were generally consistent with secondary data and the results obtained from the interviews. However, no attempt was made to perform any validation tests; no comparisons were made between responses to the questionnaire and, for example, the differing profit levels of the several firms.

With respect to the general scope of this thesis, it would be an exaggeration to say that the totality of man was the domain of this study. Not only was a limited number of elements examined, but each was studied individually, with little attention given to a complete and orderly synthesis. The major contribution of this study lies in its descriptive analyses, not in its prescriptive aspects.

Method of analysis. The first part of the study is an investigation of the literature on decision-making relative to the advertising appropriation. Chapter II presents the rules and variables involved in profit-maximizing decisions, and Chapter III presents certain concepts drawn from organization theory. The material in these chapters forms the basic framework for the empirical study.

The second phase of the study is an analysis of secondary sources that deal with the rubber tire industry. In this phase, such areas as the structure and characteristics of the industry are examined, with particular attention directed toward the marketing structure, marketing channels, and competitive techniques as they affect advertising practice. In addition, some analysis is made of general operating characteristics and financial policies. This information was used in developing the questionnaires and interviews and is presented here so that the reader may understand the nature and problems of the tire industry

In the third stage of the investigation, the data obtained from a mailed questionnaire and from selected interviews are analyzed. The questionnaire was developed and tested after spending approximately two weeks with one firm studying financial data, operating policies and practices, and the personnel involved in the appropriation decision, and after making numerous contacts with experts and consultants in the industry. Then extensive interviews were made at three different firms that typified the range of size in the industry in order to supplement and check on the reliability of the questionnaire.

Chapter V presents the findings from the questionnaire and the interviews. Emphasis here is upon the description of typical actions and attitudes. Chapter VI offers cross-analyses of related answers to pairs of questions; from these behavioral patterns are disclosed.

Definitions

With the exception of the terms "decision-making", "appropriation," and "advertising," definitions of words and concepts used in this study will be found at the place of first usage. However, the three terms

listed above are of such major importance that it is advisable to define each at this point.

Decision-making. Decision-making can be viewed as a single act, choice or ". . . the coming to a conclusion."[15] To define it in such terms might imply the exclusion of certain inherent activities of decision-making, such as probability or desirability judgments. Thus, decision-making will be treated as a process, the selection or choice of one particular pattern of behavior from many representing its consummation. The behavioral pattern may be a single act, or a series or combination of acts. But the course of action is goal-oriented, thus precluding random action.

Decision-making is a human event, although nonhuman and exogeneous events affect decisions,[16] and various mechanical devices and systems are utilized to facilitate the completion of the process. The decision-making process is a social as well as an individual activity: A decision may be the result of group discussion or a series of acts by different individuals. The process is viewed as a conscious activity, not merely as an automatic or mechanical response.[17] This does not imply that there are no "unconscious" decisions, but rather that the only decisions which lend themselves to descriptive study are those that businessmen consciously execute.

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[15] Robert Tannenbaum, "Managerial Decision-Making," The Journal of Business, XXII (January, 1950), p. 23.

[16] See, for example, J. L. McCamy, "Analysis of the Process of Decision-Making," Public Administration Review, VII (January, 1947), p. 41.

[17] Tannenbaum, op. cit., p. 22.

The advertising appropriation can be defined as that single dollar estimate which represents the total of all expenditures for advertising, while the ". . . advertising budget represents a detailed estimate of the expenditures that will be made by the advertising department in carrying out its responsibilities during a definite future period . . ."[18]

Advertising. This is the nonpersonal presentation of a commodity, service, or idea to a group to obtain patronage or favorable influence for the firm or product of the identified sponsor, and at his expense.

Much confusion exists as to the exact meaning or content of advertising, particularly as it is related to, or differentiated from, other sales techniques. Furthermore, since the advertising appropriation is largely a residual and, in many cases, a "catch-all" budget, the activity should be contrasted to those with which it is more often confused, such as:

(a) Pricing and price structures: Hidden discounts, bribes to buyers, and rebates to dealers for other than advertising services are activities closely akin to advertising. The objectives of the two are highly similar. But such "selling" methods will be treated as an essential element of price competition.

(b) Sales promotion: Occasionally, advertising is included as a part of sales promotion. However, the two will here be treated as parallel functions. Sales promotion is the activity that coordinates personal selling to advertising. An example of sales promotion is the use of letters to salesmen informing them of a particular advertising scheme.

(c) Personal selling and personal correspondence: Advertising is accomplished on a nonpersonal (not face-to-face) basis and is disseminated to a group of recipients rather than to

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[18]Albert W. Frey, How Many Dollars for Advertising (New York: The Ronald Press Company, 1955), p. 11.

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individual persons. On this basis, advertising may be differentiated from both personal selling and personal correspondence.

(d) Publicity: Advertising presentations are identified, while the direct expenses of publicity are usually borne by the disseminating agent, and the message is associated with the latter organization. Such a distinction will be used in this thesis.

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CHAPTER II

CONDITIONS OF PROFIT-MAXIMIZING DECISIONS

Introduction

Nature and purpose. The purpose of this chapter is to present the profit-maximizing adjustments of a seller attempting to exploit advertising opportunities in his product market. The chief tools of analysis are the concepts and theorems of economic science. Particular attention is given to studies of the advertising-appropriation decision.

This summary is eclectic and open-ended. The central problems of the appropriation decision are examined first under highly restrictive assumptions. Then the system is extended by progressively relaxing each assumption. Although removal of the restrictions results in indeterminant solutions, the analysis is enhanced from the standpoint of realism. The system as presented, however, does not include all decision variables.

Assumptions. Advertising is productive, i.e., capable of favorably affecting the affairs of the entrepreneur. This does not deny the possibility that advertising has some quantitative limit (as do the other factors of production or sales).[1] Advertising may operate under conditions of "eventually diminishing marginal productivity."

The decision-maker has crossed some threshold of sensitivity. Recognizing a condition of disequilibrium, he is willing to enter into

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[1] Cf. Albert G. Hart, Anticipations, Uncertainty, and Dynamic Planning (New York: Augustus M. Kelley, Inc., 1951), p. 3.

the decision process.[2] Moreover, the decision-maker is considered rational. Rationality of behavior requires that the individual can, at least, ". . . weakly order the states into which he can get, and he makes his choices so as to maximize something."[3]

Finally, the objective of the decision-maker is to maximize the profits of the firm.[4] Requisites for this objective are that the alternative behavioral patterns and associated outcomes are measurable and definable in monetary terms.

Economics of advertising. The use of advertising implies a less than perfectly[5] competitive market. In a perfectly competitive market, products of competing firms are identical. Because of the perfect elasticity of the sales curves, advertising would accomplish little, if

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[2]The actions decided upon are effective--no breakdown occurs between the decision and the results of that choice of action. Cf. op. cit., pp. 4-5.

[3]Ward Edwards, "The Theory of Decision Making," Psychological Bulletin, LI (July, 1954), p. 381. Requisites for ordering of available states are two. First, the individual must possess the ability to choose between two or more different sets of conditions. Cf. Gerard Debreu, "Representation of a Preference Ordering by a Numerical Function," Decision Processes, R. M. Thrall, C. H. Coombs and R. L. Davis, eds. (New York: John Wiley & Sons, Inc., 1954), pp. 159-166. Secondly, transitivity must exist between the available choices. Cf. C. H. Coombs, H. Raiffa and R. M. Thrall, "Some Views on Mathematical Models and Measurement," Decision Processes, R. M. Thrall, C. H. Coombs and R. L. Davis, eds. (New York: John Wiley & Sons, Inc., 1954), p. 30.

[4]In this chapter, no recognition is given to the fact that a firm may employ several individuals who may not act solely in terms of the formal purpose of the enterprise. The present discussion will not be complicated by the ramifications of group phenomena or the divergent interests of the individual.

[5]To the extent that product "brands" exist, some degree of restriction to entry is present; therefore, the term "perfect" competition is used, as contrasted to "pure" competition. Cf. e.g., Edward H. Chamberlin, The Theory of Monopolistic Competition, 6th ed. (Cambridge: Harvard University Press, 1950), pp. 6-9. See also, Ibid., pp. 127 ff. and 174 ff. Hereafter cited as Monopolistic Competition.

anything, for the individual firms. The advertising of a single firm would only raise the cost curves of that firm. Should advertising affect favorably the "industry"[6] demand curve, the gain to each individual firm would be negligible because of the large numbers assumption in the definition of perfect competition.

With the admission of imperfect markets, price changes are no longer the sole means of market manipulation. Product innovation and selling costs become relevant variables.[7] Selling costs are the total expenses (plus a normal profit) involved in increasing the preference for the product of the firm.[8] Such costs are conceptually distinguishable from production costs in that ". . . 'selling costs' are incurred in order to alter the position or the shape of the demand curve for the product. . . [while] . . . 'costs of production' includes all expenses which must be met in order to provide the commodity or service, transport it to the buyer, and put it into his hands ready to satisfy his wants."[9] The distinction between the two kinds of costs is that those incurred in

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[6] If a monopoly exists in a market less than the total economy, the monopolist is an "industry" competing for the consumers' dollars with other industries, i.e., competing with other classes of goods. Therefore, the monopolist has problems similar to those of firms competing in an imperfect market and can be treated as such.

[7] J. H. Schumpeter, Capitalism, Socialism and Democracy (New York: Harper & Brothers, 1952), p. 17, states: "Economists are at long last emerging from the stage in which price competition was all they saw. As soon as quality competition and sales effort are admitted into the sacred precincts of theory, the price variable is ousted from its dominant position."

[8] Cf. Kenneth E. Boulding, Economic Analysis, 2nd ed. (New York: Harper & Brothers, 1948), p. 717.

[9] Chamberlin, Monopolistic Competition, op. cit., pp. 117, 123.

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adapting the product to demand are production costs while those arising from the adaptation of demand to the product are selling costs.[10]

Selling costs incurred in the distribution of a single product may include: "(i) manufacturers' selling costs in the narrow sense--the compensation and expenses of salesmen . . .; (ii) advertising; (iii) the selling costs incurred in the wholesale and retail stages of distribution."[11] Major attention here is directed toward advertising, although the other selling costs incurred by the manufacturer must be considered in the analysis of the optimum "sales mix," and advertising costs incurred by dealers in supporting the manufacturer's advertising are significant.

Expenditures for advertising can be varied in several ways. The number of recipients or the amount of "information" supplied per recipient can be varied. The elaborateness of the advertising presentation may also be varied. Such adjustments are considered only as they reflect changes in total expenditures and are measurable in terms of some revenue response.

For a manufacturer to sell more of his product, one of three changes must occur: (1) some portion of a general increase in consumer expenditures is directed toward the product of the industry, a share of which accrues to him; (2) an increased preference for the industry's product in comparison with other classes of goods, resulting in an increased

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[10]Although this distinction is difficult to make, it is more than an exercise in semantics. A definitive classification will result, for example, in greater control and better supervision of expenditures. Strong states that: "An activity that is considered to be part of marketing is more likely than otherwise to be brought into line with other marketing activities." Lydia Strong, "How Much for Marketing?" The Management Review, XLVI (June, 1957), p. 55.

[11]Nicholas Kaldor, "The Economic Aspects of Advertising," The Review of Economic Studies, XVII (1949-50), p. 25.

market for the individual seller; and (3) a faborable shift in the preference for his own product at the expense of competitors in the industry. This study is concerned with the latter two possibilities.[12]

In conjunction with other members of the industry, a seller may increase industry demand by raising the relative preference for the product of this industry as compared to competing classes of commodities. Advertising by a single firm may affect the demand for the general class of goods to which the seller's product belongs. Certainly, the collective effects of advertising efforts by all members, even though of a competitive nature, may increase the demand for the product of a given industry.[13]

Finally, and the consideration of most importance to this study, the seller may employ advertising to influence "selective" demand, i.e., demand for the product of the individual firm. Advertising may be used

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[12]If consumers' incomes increase without an offsetting decline in the marginal propensity to consume or if consumers' marginal propensities to save decline, an increase in general consumer expenditures occurs in which an individual seller might share. Since only a negligible portion of increased consumer expenditures usually accrues to the individual firm, potential gains from this alternative appear relatively low. Cf. George J. Stigler, The Theory of Price (New York: The MacMillan Co., 1947), pp. 219-21.

[13]"In analyzing response to promotion, a distinction may be made between (1) industry elasticity, i.e., the responsiveness of the entire industry's sales to advertising; and (2) share elasticity, i.e., the responsiveness of a firm's market share to changes in its share of the industry's advertising." Joel Dean, Managerial Economics (New York: Prentice-Hall, Inc., 1951), p. 353.

in such a way that the relative preference for the manufacturer's own brand is increased. This is accomplished by decreasing the cross-elasticities of demand with respect to similar brands.[14]

Disequilibrium may occur because of a change in competitors' activities as well as from the availability of some new advertising opportunity. A firm may not only initiate an increased advertising program, but may use increased advertising to protect his market from aggressive activities of competitors. The "defensive" seller may use advertising to offset the effects of three types of competition: a price reduction, a product improvement, or increased advertising.[15] The defensive firm may attempt to create a pseudo difference in product to offset the market encroachment of a competitor's "real" product innovation. The purpose of such retaliatory advertising may be to protect either the defender's price, or volume, or both. In such instances, the defender is more concerned with retaliatory demand effects than he is with his own price elasticities of demand.[16]

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[14] "Advertisers wish to move the demand curve to the right, that is, to bring greater sales at a particular price or to get a higher price for a particular quantity than they would have without selling effort. Advertisers probably do not think in terms of changing the shape of the demand curves of their product through the use of advertising, but their pricing practice sometimes indicates that they act in the hope that brand reputation built by advertising may have made the demand for their brands inelastic." Neil H. Borden, Advertising Text and Cases (Chicago: Richard D. Irwin, Inc., 1950), p. 22.

[15] Cf. Sidney Weintraub, Price Theory (New York: Pitman Publishing Corporation, 1949), p. 220.

[16] The concept of retaliatory advertising appears especially appropriate where purchases of dealers in the channel reflect the amount of advertising used in support of them. This concept also partially explains the use of generally accepted operational expense ratios in determining advertising budgets among members of an industry.

Productivity of advertising. The explanation of the productivity (sales creativity) of advertising lies in its ability to alter consumer wants and means of satisfactions. The task of a seller is to create a strong preference for his product by increasing product differentiation or brand preference in the minds of prospects.[17]

The ability of the seller to accomplish these tasks rests upon two conditions: (1) imperfect knowledge on the part of consumers with respect to the availability of means for satisfying their wants; and (2) the possibility of altering the wants themselves.[18] Perfect knowledge weakens the effects of advertising which attempts to establish pseudo differences in competing products. Nevertheless the multiplicity of available products and the considerable consumer apathy make the influences of competitive advertising significant. Moreover, informative advertising[19] can change the means for satisfying consumer wants as well as affect consumer tastes.[20]

Assuming that advertising can create or stimulate sales, the problem, then, is that of determining whether advertising outlays are subject to

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[17]As to whether or not products are fundamentally heterogeneous or homogeneous, Edward H. Chamberlin, "Some Aspects of Non Price Competition," The Role and Nature of Competition in Our Marketing Economy, 1953, Marketing Symposium, University of Illinois Bulletin, LI (June, 1954), p. 33, states that ". . . they are fundamentally heterogeneous for two basic reasons: (1) nature, which has made every individual different as to personality and ability; . . . (2) adaptation by producers to the diverse tastes and desires of human beings . . ."

[18]Cf. Chamberlin, Monopolistic Competition, op. cit., p. 118.

[19]Since the objective of this study is neither to extol the benefits nor to criticize the "competitive wastes" of advertising, no attempt will be made to distinguish between informative (or constructive) and combative (or manipulative) advertising.

[20]See Melvin S. Hattwick, How to Use Psychology for Better Advertising (New York: Prentice-Hall, Inc., 1950), p. 20.

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increasing, constant, or decreasing returns; i.e., as the outlay increases, is the increase in sales (or defensively, the reduction of sales loss) more than proportional, proportional, or less than proportional?[21]

Both technical or operational and market characteristics determine the amount of sales response brought about by a unit of advertising. Frequently the results of advertising are cumulative because of the repetition of the message. Existing spending habits cannot be changed by a single stimulus, and repetitive application of the stimulus increases consumer "learning."[22] To the extent of this characteristic, additional expenditures yield increasing returns.

A purely technical consideration, analogous to economics of large-scale production, leads to increasing returns to advertising through increased specialization of effort and more efficient organization of inputs. The media best adapted to existing advertising requirements may be those requiring large outlays. As larger and larger expenditures are made, a shift occurs toward more and more effective media. Additional expenditures result in increasingly larger increments of revenue.[23]

Certain other factors counteract the tendency for increasing returns. The existence of marginal prospects is of primary importance. "One group is marginal for the general market for the product, due to the diversity of human wants and the existence of substitute commodities.

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[21] Arne Rasmussen, "The Determination of Advertising Expenditure," The Journal of Marketing, XVI (April, 1952), pp. 439-46, offers a diagrammatic presentation of the productivity of advertising, based largely upon deductive reasoning.

[22] Cf. Chamberlin, Monopolistic Competition, op. cit., p. 133.

[23] Cf. Dean, op. cit., pp. 357-58.

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Another group, though possessing a more or less inelastic demand for the type of product, is marginal for the product of any individual [competitor], due to the presence of others manufacturing a similar product and differing only as to brand."[24]

Therefore, the ability to increase the market, either extensively or intensively, appears to be limited--eventually diminishing marginal revenue productivity of advertising occurs. However, for some range of expenditures, advertising may show increasing returns followed by some range of a linear relationship.[25]

Timeless and Riskless Decisions

Assumptions. This section examines the very core of decisions concerning the advertising appropriation. To clarify this examination, however, it is necessary to make certain assumptions. Assume that opportunities and costs are measurable, continuous and infinitely divisible.[26] Secondly, assume that the decision-maker acts with subjective certainty: He is completely informed concerning the alternative courses of action and the outcome variables of each.[27] The decision-maker is faced with neither uncertainty nor risk in his equilibrium adjustments. Furthermore, assume that the decision process is costless.

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[24] A. Victor Abramson, "Advertising and Economic Theory: A Criticism," The American Economic Review, Vol. XXI (September, 1931), p. 687.

[25] An empirical study which substantiates this hypothesis is: Sidney Hollander, Jr., "A Rationale for Advertising Expenditures," Harvard Business Review, XXVII (January, 1949), pp. 79-87. See also Donald R. G. Cowan, Sales Analysis from the Management Standpoint (Chicago: The University of Chicago Press, 1938), p. 115.

[26] Cf. Edwards, op. cit., p. 381.

[27] Cf. Hart, op. cit., p. 1.

The crucial restriction of this section is that the effects of advertising are viewed as arising instantaneously. This is the "timelessness" assumption that requires that all variables pertain to the same point in time. With this restriction, it is not necessary to treat retaliation or the long-run aspects of advertising, except insofar as such considerations are reflected in the timeless variables themselves. Moreover, advertising costs will not have become constructions of overhead or fixed costs. The cost of advertising can be viewed as completely variable.[28]

"Isolated" equilibrium. The statement that "advertising is profitable to use" implies that advertising contributes to net profits. This requires that any costs associated with increased advertising at least be offset by a related increase in revenue. The crux of the problem here is to determine equilibrium conditions where advertising is the only variable.

Assume that the marginal revenue productivity of advertising is declining in the relevant range. Let A equal the total advertising expenditures, Y equal the total revenue minus total nonadvertising costs, and N (or $Y - A$) equal the total net revenue, with ΔA, ΔY, and ΔN being the related changes in the magnitudes of the respective variables.[29]

Consider the case where ΔN is negative, that is, ΔY is less than ΔA. Then $[(Y + \Delta Y) - (A + \Delta A)] < (Y - A)$. Where the incremental

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[28]Since goodwill may be lost for any particular fiscal period without the use of some advertising during that period, it does not seem unreasonable to treat some portion of such aspects of advertising as an operating expense. Furthermore, as the fiscal period is extended, all expenditures tend to become "operational" expenses as contrasted to "investments."

[29]For a similar presentation, see Hollander, op. cit., pp. 79-82.

cost of advertising is greater than the marginal revenue produced, it pays to decrease advertising expenditures. In the second case, let ΔN be positive, that is, $\Delta Y > \Delta A$. Now, $[(Y + \Delta Y) - (A + \Delta A)] > (Y - A)$, or $(N + \Delta N) > N$: Increased advertising expenditures add to total net profits. Following the logic of these two cases, the maximum profit position--equilibrium-- is reached when $\Delta A = \Delta Y$, or $\Delta N = 0$. No gain in net profit is made by moving from that position through changing advertising expenditures.

Equilibrium among selling costs.[30] The problem involved in this section is the determination of the proportion of the selling task to be performed by advertising. Since advertising is only one of several alternative sales outlays, balance must be attained among the selling techniques in such a way that the net profit contribution of the total effort is the greatest.

Assume a diminishing marginal rate of substitution between each pair of selling methods. Let $S_1, S_2, \ldots, S_n$ equal the cost of the relevant selling methods (as advertising expenses = S_1, salesmen salaries = S_2, etc.), while $N_1, N_2, \ldots, N_n$ equals the net revenue associated with each selling method.

Suppose advertising is profitable to use (that is, $\Delta N_1/\Delta S_1 \geq 1$) but $(\Delta N_1/\Delta S_1) < (\Delta N_2/\Delta S_2)$--a "dollar's worth" of advertising returns less revenue than the same amount spent on sales salaries. A greater

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[30] The total advertising appropriation is a composite cost of several factors. These factors are the means and talents employed in preparing and disseminating the advertising message. The technique for determining an optimum balance among "excitation" factors is so similar to the presentation immediately following that it will not be presented. See, for example, B. Barford and Aarbus P. deWolff, "The Theory of Advertising," Econometrica, VIII (January, 1940), pp. 279-80.

contribution to net revenue can be made by a substitution of salesmen's efforts (in monetary terms, sales salaries) for advertising. It can be seen that the equilibrium condition for this relationship is expressed as: $(\Delta N_1/\Delta S_1) = (\Delta N_2/\Delta S_2)$.

The profit maximizing position for advertising effort, in relation to other sales efforts, is attained if the marginal revenue resulting from an increment of advertising expenditure is equal to the revenue resulting from an equal increment of expenditures for the other forms of sales effort. A similar proposition is true for all relationships among the various pairs of sales outlays. Thus the condition for equilibrium among the selling costs is: $(\Delta N_1/\Delta S_1) = (\Delta N_2/\Delta S_2) = \ldots = (\Delta N_n/\Delta S_n)$.[31]

Concerted price and advertising effort.[32] The demand schedule is a function not only of advertising but also of price, product quality, and other selling costs. Furthermore, the effectiveness of advertising is related to these variables as well as to the nature and quantity of the advertising effort. The productivity of advertising is influenced

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[31] Further discussion should refer to total selling cost adjustments. But in the light of the specific subject matter of this study, the presentation will refer to advertising as though it were the only sales cost. Such a restriction will not detract from the analysis since reference can be made to the conditions presented immediately above.

[32] A rigorous analysis of these relationships is not presented. The necessary equilibrium conditions are incorporated with others in the last part of this section.

by the price level or the level of product quality.[33] Thus, these latter variables become relevant.[34]

In general, combined price and advertising efforts do not pertain to a full range of theoretical price possibilities, but more specifically to a particular price or a very narrow price range.[35] In the case of the firm making the initial change (as contrasted to a retaliator), advertising may be employed to increase demand at: (1) an existing price, e.g., a firm confronted with a given price; (2) a higher price, e.g., a firm attempting to establish a quality "halo" preparatory to increasing the price; and (3) a lower price, e.g., a firm attempting to create broader acceptance with the intent of invading the mass market.

If advertising is used to increase demand at some existing price, a pure "volume" effect is the result. Advertising may also be used merely to increase the price of the product where output is provisionally determined. In either case, selling costs will be increased up to the point where the increment to net revenue resulting from the increased price (or volume) will equal the selling expenditure necessary to achieve the higher price (or the greater volume).

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[33] Equilibrium can be found for the advertising and product quality relationship in the same manner as was done in the preceding section, i.e., by treating product quality as a type of selling cost.

[34] Nevertheless, to determine the sales response arising solely from advertising efforts--i.e., the isolated productivity of advertising (or selling costs)--the variations in the other determinants must be nil. This explains the restrictions maintained thus far in the analysis.

[35] Zingler analyzes the effects of advertising but classifies the effects upon the basis of the direction of effort, i.e., whether price or output directed. See E. K. Zingler, "Advertising and the Maximization of Profit," Economica, VII (New Series) (1940), pp. 318-21. Enke presents an analysis, in diagrammatic form, for the determination of whether the price or volume effects are greater. Stephen Enke, Intermediate Economics (New York: Prentice-Hall, Inc., 1951), pp. 315-16.

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When the goal is to influence demand at a higher or lower price and output is not given, a complex of volume and price effects occurs.[36] Under such a condition, advertising is the preliminary activity that helps determine whether or not (1) the price rise will be able to offset the possible reduction in net revenue attributable to decreased volume or (2) the volume additions to net revenue will compensate for the price reduction.[37]

Production costs and advertising.[38] Although preceding discussions have dealt with net revenue, no explicit attention has been given to production costs. Net revenue is the difference between total revenue and total costs. Price determines the volume demanded and average production costs are a function of output. If advertising is directed toward changing the price of the product, advertising is indirectly related to output and thus to production costs. If advertising is output-directed, it relates directly to production costs. Therefore, a seller must consider the differing effects of expanding output with varying amounts of advertising upon the ordinary costs of production and the combined costs of production and advertising.

One characteristic peculiar to firms operating under conditions of imperfect competition is their cost condition. "Whereas under perfect

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[36] Robert Dorfman and P. O. Steiner, "Optimal Advertising and Optimal Quality," The American Economic Review, XLIV (December, 1954), p. 826, state that: "A firm . . . will, in order to maximize its profits, choose the advertising budget and price such that the increase in gross revenue resulting from a one dollar increase in advertising expenditure is equal to the ordinary elasticity of demand for the firm's product."

[37] This assumes a negatively sloped demand curve.

[38] Again no rigorous analysis is offered. See the last part of this section.

competition marginal costs must tend to increase with greater outputs, under imperfect competition marginal costs may be increasing, constant, or decreasing. . . ."[39] Although only one of these conditions may exist for a firm at any particular time, the response to advertising may force the firm from one cost range to another (e.g., from constant to increasing costs). It is traditionally assumed that firms have U-shaped average cost curves.[40] These curves fall during some early range of outputs because of fuller utilization of plant, then remain constant over a short range, and finally rise as the over-utilization of fixed plant or the over-extension of the management factor becomes predominant.

Suppose that the seller does not have the ability to vary his price[41] and that he is faced with constant average production costs in the relevant range. The increases in demand effected by advertising will add to the firm's profit, until the additional expenditures for advertising are just offset by the incremental gains created by this change. These increments might be termed the "pure unit-sales productivity" of advertising.

In the case of decreasing costs, the benefits accruing from a shift in the demand curve to the right (i.e., profit opportunities resulting from increased volume) are magnified by potential savings resulting from lower average production costs of these additional units. Before becoming unprofitable, advertising outlays must not only offset the

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[39] E. A. Lever, Advertising and Economic Theory (London: Oxford University Press, 1947), p. 82.

[40] Cf. Enke, op. cit., pp. 276-78.

[41] This proposition is not too unrealistic, since some--not a small--proportion of the goods in our economy does have maintained prices, e.g., through customary pricing or the acceptance of an industry price by a relatively small firm.

gains accruing from shifting the demand curve, but must nullify the advantages of lower production cost opportunities (and, without the price restriction imposed above, the contributions made to profit should a price rise occur).

In the case of increasing costs, a portion of the gains resulting from increased volume will be absorbed immediately by the relatively higher costs of producing the additional units. This does not mean that a seller confronted by this situation will not advertise. It does emphasize the necessity for highly productive advertising[42] (and, with price variable, a favorable advertising effect upon the elasticity of demand).

Demand effects plus cost conditions. Now let price, advertising costs, and production costs be variable. Before turning to the analysis, however, one aspect of the problem that has not been mentioned heretofore requires examination.

Advertising resulting in increased or constant volume has been the only consideration thus far. However, if demand becomes less elastic and this effect is not offset by a shift in demand, increased advertising may result in a lower profit-maximizing output. The equilibrium position--profit maximization--is found where marginal costs equal marginal revenue. In the case of an imperfect market, where the sale of extra units depresses price, the marginal revenue falls at a faster rate than does the average revenue (demand curve). This phenomenon is explained by the fact that the full change in total revenue[42a] is exhibited

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[42] Note that in the case of increasing production costs the marginal value product of advertising need not be falling, since increasing returns may be offset by the increasing costs of production.

[42a] This is caused by selling the old quantity at a lower price.

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in the marginal unit, while average revenue reflects the change as an average of all units involved. If demand is made less elastic by sales effort, the marginal revenue curve falls at a faster rate than previously and meets the marginal cost curve at a lower output unless offset by a shift in demand. The following analysis treats output-increasing advertising.

Suppose that for some output, such as OW in Exhibit 1, the profit-maximizing position necessitates the following conditions: Price equals WT; average production costs equal WV; and average advertising cost equals VU. Under such conditions the optimum total advertising expenditure equals OW times VU.

In a similar manner, equilibrium conditions can be found for any other output, for example, OM with the optimum price of MS, average advertising cost of RQ, and production cost of MR. Thus, points on curves PD,[43] CAC, and AC are the optimal price, combined average advertising-and-production cost, and average production cost, respectively, for the associated outputs. The curve denoted as CAC is found by adding the optimum average advertising outlays for each given output to the given production cost curve.[44] Curves marginal to the average curves (as MR_{PD} and MC_{AC} for the average revenue curve and the combined average cost curves, respectively) can be superimposed.

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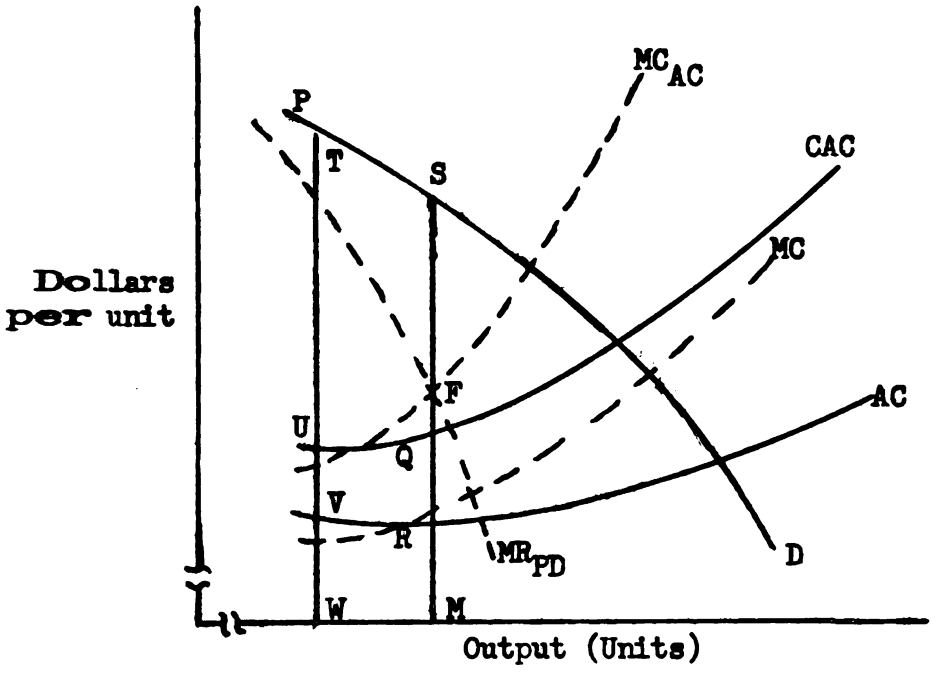
[43] No a priori assumption can be made with respect to the slope and position of PD, except that for some range it must lie above CAC--the situation includes conditions that permit advertising to be profitable.

[44] Note that, as presented, the productivity of advertising is falling (the vertical distance between AC and CAC is increasing) and the optimal price falls as advertising is increased (MS is less than WT).

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Figure 1

EQUILIBRIUM: ADVERTISING, PRICE, PRODUCTION COSTS VARIABLE IN A TIMELESS AND RISKLESS STATE



Source: Adapted from Sidney Weintraub, Price Theory (New York: Pitman Publishing Corp., 1949), p. 219.

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Profits are maximized at output OM (or price MS) as determined by the intersection of MR_{PD} and MC_{AC}. If the seller uses some "lump-sum" method of allocating his advertising appropriation, he allocates a total amount equal to OM times RQ. Comparing the optimal conditions for output OW to those for OM, total profits can be increased by the amount that OM times QS is larger than AW times UT for output OM. The increased advertising outlay is OM times RQ minus OW times VU.[45]

Decisions in a Dynamic Environment

The dynamics of advertising. Thus far, the problem of equilibrium has been examined in a state wherein the data of the problem did not change over time--the advertiser was operating in a static state.[46] For the examination of an industry where, for example, goodwill is a relevant objective of advertising, the timeless assumption must be removed.

Equilibrium adjustments must be examined as they reflect the duration or time limits of the process or as they pertain to separable time periods. The entrepreneur may wish to "invest" a portion of his appropriation to gain some long-run objective rather than expend his total

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[45] See Norman S. Buchanan, "Advertising Expenditures: A Suggested Treatment," Journal of Political Economy, L (August, 1942), pp. 537-57, for a similar treatment.

[46] Cf. Stigler, op. cit., p. 25.

current advertising outlay in the creation of immediate sales.[47] On the other hand, the entrepreneur may believe that a unit of advertising input today will produce revenue equal to (or may cost more than) the same unit at a later date.

Analysis of dynamic characteristics of advertising involves two types of problems. Both involve a sequence of unique time periods where income and expenditures become streams of values. In one instance, values arising in subsequent periods are affected by advertising of some previous period. In the other case, advertising inputs may be substituted away from some current period and utilized in a period in the more distant future. Both of these problems may be considered from two different aspects: equilibrium adjustments without discounting and equilibrium adjustments involving a discount for values foregone because of substituting away from more current periods.[48]

Equilibrium without discounting. Assume that the incremental incomes of each period are additive and neglect the time discount of future values.

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[47]No distinction has been required between the "short-run" and "long-run" effects of advertising. Nevertheless, ". . . all advertising has in some degree a delayed and cumulative result that gives it the characteristics of an investment outlay." Joel Dean, op. cit., p. 355. The factors causing the time lag ". . . appear to be: (1) the type of copy [e.g., institutional] and the media used [e.g., the time involved in reaching the respondent]; (2) the germination period for the purchase decision; and (3) the revenue circuit for the advertising firm [e.g., the length of the trade channel]." Roy A. Jastram, "A Treatment of Distributed Lags in the Theory of Advertising Expenditures," The Journal of Marketing, XX (July, 1955), p. 36.

[48]Although the "future" involves risk, assume that subjective certainty exists. "A subjectively certain situation exists when the manager operates and makes decisions as if he knew future events perfectly." Lawrence A. Bradford and Glenn L. Johnson, Farm Management Analysis (New York: John Wiley & Sons, Inc., 1953), p. 30.

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Let $T_0, T_1, \ldots, T_n$ be the relevant time periods with T_0 the current period. Let n be a finite number.[49] Also assume that $\Delta N_0, \Delta N_1, \ldots, \Delta N_n$ = the incremental income of the relevant time periods arising from increased advertising (ΔA_0) of the current period. Let the sum of this income stream associated with A_0 be K_0 with ΔA_0 and ΔK_0 being changes in the relevant variables. Equilibrium is reached when changes in the sum of the income increments over time ΔK_0 divided by ΔA_0 equals one, or $\Delta N_0 + \Delta N_1 + \ldots + \Delta N_n = \Delta A_0$.[50]

This presentation facilitates the analysis of input values. Suppose $\Delta K_1 = \Delta N_1' + \Delta N_2' + \ldots + \Delta N_n'$, where the value N' is associated with changes in advertising in T_1. Substitution of inputs is made between period T_0 or T_1 according to whether $\Delta K_0 / \Delta A_0 \gtrless \Delta K_1 / \Delta A_1$. If, for example, $\Delta K_0 / \Delta A_0$ is less than $\Delta K_1 / \Delta A_1$, profits can be increased by withholding advertising inputs from use today and employing them in the first period forthcoming.

Equilibrium adjustments involving time discounts. The simplified presentation above makes apparent the equilibrium adjustments required in a dynamic state, but does not treat the problem of discounting. When either inputs or products are withheld for use in the future, some immediate income is foregone. The expenditure could have been made on a current input and the value realized immediately. These future values must be discounted by the amount of income foregone because of the postponement of their use.

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[49] In dealing with this problem, it is not mandatory that (n) be finite. However, the number of time periods included in a plan is usually finite. See footnote 76 which discusses the economic horizon.

[50] Cf. Jastram, op. cit., pp. 36-38.

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Suppose a two-period world, in which a seller could employ a unit of advertising in order to gain immediate sales today (T_0) or goodwill during the next period (T_1). Let the discount ratio (D) be $1/(1 + i)$, where i equals the rate of interest in the current period.[51] If the increased value of goodwill at T_1 created in period T_0 equals (N_1), then the present value (at T_0) of that goodwill which advertising creates in T_1 is equal to $D\,N_1$. If $D\,N_1$ is greater than N_0, substitution should occur toward goodwill-directed advertising. The substitution between advertising responses is given according to whether ($D\,N_1$) is greater or less than N_0, with equilibrium reached when N_0 equals $D\,N_1$.[52]

Substitution among streams of values. A continuous stream of income and expenditures, with a constellation of interdependent temporal relationships (e.g., interperiod cumulative effects) exists, rather than a simple two period dependency.

Assume an expenditure stream as: $A_0 + A_1 + \ldots + A_n$. Let the present discounted value arising from this expenditure stream, E', be: $R' = N_0 + D\,N_1 + \ldots + D^n N_n$. Assume an alternative expenditure stream, E'', which has an associated present discounted income value $= R''$ found in a manner similar to the method of computing R'. Substitution will be made between these expenditure streams according

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[51] This discount is the value foregone, compounded at the prevailing rate of interest during the relevant period(s). Cf. J. R. Hicks, Value and Capital (Oxford, England: Oxford University Press, 1950), p. 185. Hart, op. cit., pp. 92-95 states that the use of internal rates of interest (themselves the results of policy decisions of the firm) as the discount factor is not necessarily inconsistent.

[52] It is interesting to note that the "capital return" formula used by Arthur D. Little, Inc. incorporates many of the variables discussed thus far. See Daniel Seligman, "How Much for Advertising?" Fortune, LIV (December, 1956), p. 224.

to whether $\Delta \underline{R}' / \Delta \underline{E}' \lesseqgtr \Delta \underline{R}'' / \Delta \underline{E}''$. Equilibrium is attained when the values on either side of the equation are equal.

Elasticity of expectations. A further aspect of a dynamic environment arises from the fact that even subjectively certain expectations are subject to change when a sequence of time periods is involved. Prior to the execution of a plan, a rise in the cost of an input (e.g., an increase in media costs) may become apparent. Such an event may well create a change in entrepreneurial expectations, resulting in a different pattern of intertemporal substitutions.[53]

The price rise may not be viewed as proportional throughout the sequence of time periods. The rise in the expected price of a factor in some future period ($\Delta \underline{V}_t$) may not be proportional to the change in the current price ($\Delta \underline{V}_0$). The elasticity of expectations of the price of a unit of advertising,[54] ($\Delta \underline{V}_t . \underline{V}_0 / \Delta \underline{V}_0 . \underline{V}_t$), may be greater than, equal to, or less than unity.[55]

Assume: (a) constant revenues associated with each period, (b) a present increase in advertising costs, and (c) elasticity of expectations less than unity.[56] An intertemporal substitution will take

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[53] Hart, op. cit., p. 7.

[54] Cf. Oscar Lange, Price Flexibility and Employment (Evanston, Illinois: The Principia Press, Inc., 1952), p. 20. Hicks, op. cit., p. 205, defines elasticity of expectations ". . . of the commodity $\underline{x}$ as the ratio of the proportional rise in expected future prices of $\underline{x}$ to the proportional rise in its present price."

[55] The following analysis is equally applicable to the products of advertising effort.

[56] It is difficult to predict a priori the nature and direction of this elasticity. Expectations with respect to, for example, the permanency of the changes in price over the various time periods will affect the degree of substitution--the greater the belief in its permanency, the more likely and the more complete the substitution.

place in favor of the future period T_1, to the loss of the present period T_0. The logic of this argument is similar to that which established equilibrium with the condition, $\Delta N_0 = D\ \Delta N_1$.

No a priori assumptions can be made with respect to the degree or pattern of substitution over time. The advertising input may be a complement to other advertising or selling inputs. A certain amount of advertising may be needed to support the salesmen with whom commitments for sales salaries have previously been made. Complementarity, thus, may reduce the substitution effect.[57] A further complication arises from the fact that the increase in the cost of an advertising input may result in a substitution away from advertising entirely. The costs of advertising may have increased over the series of periods to such an extent that its rate of use is decreased.

Decisions Involving Risk and Uncertainty

Forward-looking decisions. In all that has preceded, entrepreneurial estimates have been presented as being subjectively certain, as though competitor and market reactions were unique, definite and known values.[58] Yet the last section pointed out that decisions culminate in a projected course of action which extends over time. Execution of decisions actually takes place in the future. Short of perfect knowledge--and the future can never be fully foreseen--the decision-maker can but "anticipate,"

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[57] Cf. Clare E. Griffin, Enterprise in a Free Society (Chicago: Richard D. Irwin, 1949), p. 165.

[58] Lange, op. cit., p. 29, states: "This does not imply perfect knowledge. The expected prices may differ from the prices which are realized subsequently. The certainty of expectations is merely subjective."

never "know," future states of affairs. In reaching forward-looking[59] decisions, it is necessary to predict some data whose exact dimensions belong to the future.[60]

An advertiser has the alternative of postponing the decision in favor of "buying" more information or he may arrive at various expectations with respect to future actions and reactions, while recognizing that some chance exists that outcomes may not be as expected.[61] This section treats the subject of "risky" decisions where the

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[59] Decisions can be made about the past (e.g., "The firm should or could have . . ."), but they are irrelevant except as they affect forward-looking decisions.

[60] "The truth of the matter is that the areas of certainty merge gradually into the zone of uncertainty much as day merges into night and night merges into morning." Wilford J. Eiteman, Price Determination: Business Practice Versus Economic Theory, Michigan Business Reports, No. 16, University of Michigan (January, 1949), p. 65. J. Brooks Heckert, The Analysis and Control of Distribution Costs (New York: The Ronald Press Co., 1940), p. 299, states that the expenditures on advertising are " . . . subjected to less rigid tests of probable relation of cost and result than are most cost items."

[61] "Marketing estimates . . . are in their essence estimates of the behavior of individuals or firms outside the entrepreneur's control." Hart, op. cit., p. 76. He, for example, cannot anticipate exactly the form or degree of response to increased advertising. The response may be a strong negative reaction (induced, for example, by a blatant selling scheme or an economy price appeal) or a neutral effect (exemplified by mere product recognition with no motivation to buy).



entrepreneur acts with certainty about the probability of an event but not about the event itself.[62]

Prediction, probability and risk. Rather than a strict causal chain between a single stimulus and a single response, an array (or set) of possible outcomes[63] may be associated with a single advertising activity. The chance of occurrence for each of these possible outcomes must be predicted. The basis of prediction is inference, i.e., a prediction is made by inferring the unknown future from the known past or

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[62] "Costly" decisions and buying more information can be analyzed in the following manner. Increased relevant information should improve the reliability of anticipations. (However, the reporters of this information--e.g., accountants--utilize discretion in submitting information. Thus prejudice and inadequacy may arise before the stage of decision-making.) But the collection and interpretation of information require expenditures of time, effort and money. (The assumption has been that the relevant data are available. This may not be the case. Suppose a decision is required which concerns the availability of a new medium, such as television, in which verification or testing must take place.) Thus the decision-maker is involved in a choice between more reliable predictions at a higher cost or less reliable predictions at a lower cost. But the cost of planning one activity must be made at the sacrifice of planning other activities or at the sacrifice of executing or controlling current activities. Thus the value (measured in terms of the outcome of the associated act) of making or improving any given decision must be equated to the sacrificial (opportunity) cost associated with that decision. See, for example, Charles C. Holt, Franco Modigliani, and Herbert A. Simon, A Linear Decision Rule for Production and Employment Scheduling, O. N. R. Research Memorandum No. 30, Graduate School of Industrial Administration, Carnegie Institute of Technology (May, 1955), p. 5.

[63] Since negative as well as positive features may be associated with any outcome, consider reactions as effective or net when the term "outcome" is used.

present. The more able the entrepreneur in making this inference, the more probable it is that his predictions will conform to reality.[64]

Probability is the numerical value expressing the likelihood that an outcome will occur. The theoretical limit of this likelihood--i.e., complete certainty that the event will occur--is 100 per cent. Risk is the departure from this theoretical limit. If the probability

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[64]Here, no attention is given to the accuracy of predictions. However, the decision-maker can be viewed as a focus of an ongoing stream of information. Between the decision and the completion of the act, additional information may become available. This is a major aspect of feedback in closed-loop control. Cf. Henry C. Metcalf and L. Urwick, Dynamic Administration, The Collected Papers of Mary Parker Follett (New York: Harper & Brothers, 1940), p. 304. Decisions therefore may be formulated in such a fashion that they permit successive review and revision as the passage of time provides new information. Cf. Holt, Modigliani and Simon, op. cit., p. 10. This characteristic is flexibility which permits varying input-use according to revisions of expectations. "An essential of a flexible advertising budget is a workable reserve. . . . It is money held back to be available for emergencies." "Advertising Reserves are Essential to Flexible Budgets," Printers' Ink, CCXIV (February 1, 1946), p. 65. Flexibility will yield worse results than completely committed decisions should the anticipations prove correct in the light of facts; but, if these anticipations prove inexact--a much more likely supposition--flexibility may yield much higher results. Cf. Benjamin H. Higgins, "Elements of Indeterminancy in the Theory of Non-Perfect Competition," The American Economic Review, XXIX (1939), pp. 468-79. Flexibility involves direct and indirect costs (as unemployment of assets). Therefore the net expected benefits must be weighed against the costs involved. For a diagrammatic treatment of this case, see Hart, op. cit., pp. 46-60. See also, Rainer Schickele, "Farmers' Adaptation to Income Uncertainty," Journal of Farm Economics, XXXII (August, 1950), p. 364. No a priori judgments can be made concerning the amount of substitution permitted by flexibility. Discontinuities may exist in the marginal advertising cost curve caused by indivisible input factors. With indivisibility, as with national media and the management factor, only limited substitution is permitted. Cf. N. Kaldor, "The Equilibrium of the Firm," Economic Journal, Vol. 44, (August, 1934), pp. 60-76, and E. H. Chamberlin, "Proportionality, Divisibility, and Economies of Scale," Quarterly Journal of Economics, LVII (February, 1948), pp. 229-262.

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that a favorable event will occur is 90 per cent, the risk that it will not occur is 10 per cent.[65]

Prediction values expressing the degree of risk associated with an event are psychological phenomena. They are not ex post, objectively measured calculations,[66] but individual, subjective, ex ante judgments.[67] However, "an individual is usually assumed capable of vaguely ordering outcomes as 'more likely.'"[68] Thus, assume that these judgments are certain, while maintaining ceteris paribus restrictions. A positive value (V_1) with a probability of 90 per cent is preferred to an equal positive value (V_2) with a probability of 80 per cent. Secondly, if (V_1) is preferred to (V_2), then (V_1) + (V_3) where (V_3) has a probability of (b_3) is preferred to (V_2) + (V_3) where again V_3 has the probability of (b_3).

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[65] Assume that the entrepreneur is subjectively certain about the universe of possible outcomes, i.e., he "knows" the parameters of the universe. Thus he can assign exact probabilities with respect to the occurrence of a specific event within that universe. But, if the probability lies between one and zero, some risk is associated with the occurrence of the specific event. The measure of this risk is the complement of the probability of its occurrence. Cf. Hart, op. cit., p. 51.

[66] This does not imply that the entrepreneur does not strive for objectivity and rationality.

[67] Cf. C. H. Coombs and David Beardslee, "On Decision-Making Under Uncertainty," Decision Processes, R. M. Thrall, C. H. Coombs, and R. L. Davis, eds. (New York: John Wiley & Sons, Inc., 1954), pp. 257-65.

[68] See Stefan Vail, "Alternative Calculi of Subjective Probabilities," Decision Processes, R. M. Thrall, C. H. Coombs, and R. L. Davis, eds. (New York: John Wiley & Sons, Inc., 1954), p. 90.

Expected value.[69] For simplification, let only two possible outcomes (V_1, V_2) be associated with an act (I). If the probability of (V_1) is (a_1), then the probability of (V_2) is ($1-a_1$). The expected value of act (I) is equal to $a_1 \cdot V_1 + (1-a_1) \cdot V_2 = V_I$. If $V_I > V_{II}$, then the entrepreneur will prefer act I over act II.

The above analysis can be expanded to apply to more complicated alternatives. Let $b_1 + b_2 + \ldots + b_n = 1$ be a probability function for an array of anticipated outcomes associated with an event, with the value of these outcomes expressed as $V_1, V_2, \ldots, V_n$. The expected value of this event (e.g., a single advertising effort) is $b_1V_1 + b_2V_2 + \ldots + b_nV_n$.[70]

From this formulation, comparisons can be made among the alternatives, with the activity chosen (assuming equal costs among alternative expenditure programs) having the highest (discounted) expected value. Likewise, assuming equal discounted expected values of alternative outcomes, the expenditure program having the lowest discounted expected value will be pursued.[71]

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[69] The value derived in this section is the actuarial value or the mathematical expectation. Hicks, op. cit., pp. 125-26, and Lange, op. cit., pp. 20-31, use the mode of the probability distribution which they term the "most probable value."

[70] Note that all or any of these values may be discounted values.

[71] Cf. Milton Friedman, Essays in Positive Economics (Chicago: Chicago University Press, 1953), p. 303, who sets forth the concept as an axiom for consuming units. This choice criterion does not take into account preferences among the different shapes of probability distributions. For example, one probability distribution may have a plateau of values while another may be heavily skewed. In such cases the entrepreneur may not accept the expected value criterion.

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Uncertainty allowances.[72] Where the possibility of errors and contingencies is present, the decision-maker may recognize that even probability judgments are inexact. The advertiser may think that nine times out of ten a unit of advertising will return a certain value. But he may believe that the total of his experiences does not permit him to place 100 per cent confidence in this expectation. When such a state exists, uncertainty is present.[73]

Although entrepreneurs vary in their behavior when confronted with uncertainty,[74] generally, greater unwillingness to act is encountered

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[72]Fellner objects to the conventional treatment of uncertainty discounts on the basis that it ". . . comes rather close to making the problem of uncertainty disappear completely." William Fellner, "Employment Theory and Business Cycles," A Survey of Contemporary Economics, Howard S. Ellis, ed. (Philadelphia: The Blakiston Company, 1948), p. 80.

[73]The entrepreneur is partly ignorant of the parameters of the universe of possible outcomes. But he may be able to determine an interval within which the parameter will fall. Thus the standard deviation or coefficient of variation can be used as a measure of uncertainty. Cf. Lange, op. cit., p. 29.

[74]Some are noted for their willingness to act in the face of uncertainty; others, for their conservatism. Varying preferences exist even for the extremes--where risk is undertaken for its own sake or where subjective certainty is a prerequisite to action. Cf. Friedman, op. cit., pp. 303-304. Hart, op. cit., pp. 72-73, states that "there are two important reasons for believing that entrepreneurs cannot ordinarily be neutral toward risks:" (1) that they "will have risk aversion because of . . . the principle of diminishing utility;" and, (2) "the obvious emotional halo surrounding danger and security." One entrepreneur may hesitate, for example, to increase advertising, since advertising itself causes change. The degree of risk-aversion is related to the relative and the absolute financial or market position. The stronger the position, the less the need (not necessarily desire) for more conservatism. Among other influences is any recent change in income. As the entrepreneur becomes adjusted to a greater income he may attach less importance to the possibility of losses. On the other hand, he may be able to spend a higher proportion of his income on security and accuracy. Cf. Bradford and Johnson, op. cit., p. 371. The existence of uncertainty and varying evaluations of risk explain why all firms do not move at the same speed in the same direction. Cf. E. T. Penrose, "Biological Analogies in the Theory of the Firm: Rejoinder," The American Economic Review, XLIII, Part I (September, 1953), pp. 606-607.

with greater uncertainty of expectation. As with risk, assume an aversion to uncertainty--the more uncertain a value, the less the relative preference for that value.[75]

An allowance for uncertainty will tend to reduce the magnitude of an expected value. The allowance will have a positive relationship with the degree of uncertainty. Moreover, the more remote the execution date from the decision date, the less predictable the outcome of an action. Thus, the more remote the action, the greater the uncertainty allowance. Expected values discounted by uncertainty allowances are termed "effective expected values" and can be treated as any other unique value.[76]

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[75]Lange suggests that not only is the relationship positive, but it is also increasing. Ibid., p. 33.

[76]Where subjective uncertainty exists, tentative limits can be established for the planning period. Suppose that a stream of discounted expected values (such as $\underline{V}\ \underline{V}'$) result from a constant stream of advertising expenditures (such as $\underline{A}\ \underline{A}'$). Let a positive uncertainty allowance be deducted from $\underline{V}\ \underline{V}'$. Thus the incoming stream will tend to fall because of the rising uncertainty allowance as $\underline{V}\ \underline{V}'$ extends further into the future. (In addition, since the uncertainty discount for a "buyer" is negative, $\underline{A}\ \underline{A}'$ will rise.) Eventually the effective expected incoming value will fall below the effective expected outgoing value; i.e., the magnitude of $\underline{V}\ \underline{V}'$ decreases to such an extent that to deal with the value is uneconomical. This point in time is the economic horizon. This term was originally conceived by J. Tinberger, "The Notions of Horizon and Expectancy in Dynamic Economics," Econometrica, I (May, 1933), pp. 247-64. Cf. Lange, op. cit., p. 32; also, Hicks, op. cit., pp. 193-94. The economic horizon tends to establish only tentative limits. Within the industry or firm, some typical fiscal or contractual period for the purchase of advertising inputs may exist. Deviations from this typical planning period may increase the costs associated with planning. In such cases, the period determined by the economic horizon may be violated. Cf. Hart, op. cit., p. 80.

Decisions Involving Strategy

Interdependence examined. Where "fewness" is a characteristic of the industry in which an advertiser is operating, "conjectural variation"[77] is relevant. Where the fortunes of the members are interdependent, the actions (or reactions) of all become germane and must be included in the decision function of any one.[78] For a decision-maker to include "reaction variables" of competitors in his decision function, he must anticipate the skills of competing firms in dealing with the factors under their control as well as forecast the form and degree of retaliation. Thus, even in the absence of secrecy and bluff, the advertiser will be ignorant of certain probabilities of relevant variables.[79]

If faced with disequilibrium and with indefinite expectations, the advertiser is confronted with an uncertain, "forced action" situation.[80] On such occasions, principles from the field of strategy are applicable.[81] The type of activity pursued may involve cooperation rather than conflict

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[77] Cf. William Fellner, Competition Among the Few (New York: Alfred A. Knopf, 1949), pp. 71-77.

[78] A seller's concern with retaliation is aroused if complete homogeneity (or differentiation) of product does not exist, and if both he and his opponent are large enough to affect the fortunes of the other.

[79] See Leonid Hurwicz, "What Happened to the Theory of Games?" The American Economic Review, XLIII (May, 1953), pp. 401-403.

[80] Cf. Bradford and Johnson, op. cit., pp. 29-30. See also, George Katona, "Psychological Analysis of Business Decisions and Expectations," The American Economic Review, XXXVI (March, 1946), p. 55.

[81] Among many possible strategic alternatives are: (a) choose the action for which the desirability of the most probable outcome is the highest, or (b) select the action associated with the largest of the least favorable expectations. Cf. Irwin D. F. Bross, Design for Decision (New York: The MacMillan Company, 1953), pp. 104-110. Note that minimizing the maximum loss differs from the maximizing of the "expected value."

among the components of the industry. The members may decide that their interests, individually and in total, are best served by some type of alliance. On the other hand, because of management and technological differences as well as errors in judgment, the firms may resort to bargaining and rivalry.[82] A seller may take the offensive by a price reduction, increased advertising, or a product innovation. Against these offensive tactics, the defensive seller must employ the most effective competitive weapons in some optimum amount to offset the potential sales loss.[83]

Suppose that advertising ($\underline{A}_1$) of firm $\underline{1}$ affects the quantity demanded, q_2, of the product of firm $\underline{2}$, that is, $q_2 = f(\underline{A}_1, \underline{A}_2)$. Firm $\underline{2}$ must partially adjust its advertising, $\underline{A}_2$, to the various outlays of firm $\underline{1}$. Also suppose that $q_1 = g(\underline{A}_1, \underline{A}_2)$, where q_1 is the quantity demanded of the product of firm $\underline{1}$. Thus, an equilibrium position must be found for firm $\underline{1}$ in the light of various advertising outlays of firm $\underline{2}$.

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[82]The frame of reference for analysis must be expanded to consider the equilibrium for the entire industry rather than a single part (the firm). One means for treating this problem is "homeostasis." See, for example, Wroe Alderson, "Survival and Adjustment in Organized Behavior Systems," Theory in Marketing, Reavis Cox and Wroe Alderson, eds. (Chicago: Richard D. Irwin, Inc., 1950), p. 67.

[83]Alfred R. Oxenfeldt, Industrial Pricing and Market Practices (New York: Prentice-Hall, Inc., 1951), p. 224, states that: ". . . advertising will flourish wherever at least one seller has tried to use it as a means of increasing his market. His action generally compels his rivals either to retaliate or to suffer a reduction in sales volume. Most advertising is defensive or retaliatory."

In Exhibit 2, contour I shows the optimum adjustments of firm 2 to the efforts of firm 1.[84] If firm 1 expends OU dollars for advertising, the optimum expenditure by firm 2 is OT. Consider contour II which shows for firm 1 what contour I does for firm 2. Assume that I has a greater slope than II so that the two contours intersect at some point Q and that their individual actions and joint outcomes are tending to place them in equilibrium.

Let firm 1 increase its advertising expenditures from MR to MB.[85] Firm 2 must increase its appropriation by BH to compensate for the increase by firm 1. Then firm 1 must increase its expenditures by HA to offset the advantage gained by firm 2. From these successive increases

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[84] As drawn in Exhibit 2, optimal conditions for firm 2 require that an increase in advertising by firm 1 demand an increase by firm 2. This is shown by the positive slope of contour I. A similar condition is shown for firm 1 by contour II. Such a situation may not necessarily be true, since a substitution of price or product quality may be made for advertising in the combative programs. Because of the multiplicity of factors involved, no *a priori* assumptions can be made about the degree of slope of the contours.

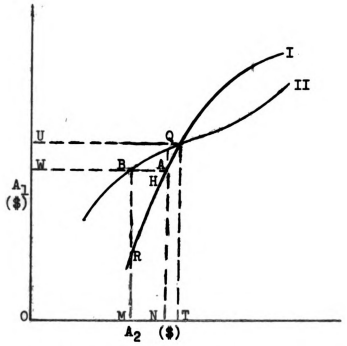
[85] This analysis is applicable to reductions in expenditures. However, a special case of conjectural variation has to do with a seller who believes that competitors would retaliate against an increase in his advertising efforts but would not follow a reduction. Thus a "kink" would exist in the "advertising-demand" curve. See, for example, George J. Stigler, "The Kinky Oligopoly Demand Curve and Rigid Prices," Readings in Price Theory, published for The American Economic Association, George J. Stigler and Kenneth E. Boulding, eds. (Homewood, Illinois: Richard D. Irwin, Inc., 1952), pp. 410-39, and C. W. Efroymson, "A Note on Kinked Demand Curves," American Economic Review, XXXIII (March, 1943), pp. 98-109. The resulting discontinuity in the marginal revenue curve causes the profit-maximizing position to be a broad plateau for which ". . . wide variations in the variables under the control of the organism can occur without diminishing the maximum." K. E. Boulding, A Reconstruction of Economics (New York: John Wiley & Sons, Inc., 1950), p. 36.



Source: Ada
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Figure 2

EQUILIBRIUM ILLUSTRATED FOR TWO ADVERTISERS
WITH INTERDEPENDENT OUTCOMES



Source: Adapted from Kenneth Boulding, Economic Analysis, 2nd ed. (New York: Harper & Brothers, 1948), p. 588.

the firms will tend toward Q.[86] At point Q, advertising efforts of the firms are in equilibrium.[87] However, stability does not necessarily result from such mutual action and reaction. A net profit is not necessarily forthcoming at Q, nor are the firms necessarily maximizing joint profits. Because of these possibilities "competing" firms may collude.

Joint-profit maximization. Collusion is agreement or cooperation among two or more competing interests in a market. These competing interests, whose fortunes are linked, arrive at joint policies in order to further the collective welfare and thereby the individual gains of the members.

The firms in the interest group may have only a loose system of consultation among themselves.[88] The group restrictions may be in the form of an informal ". . . body of practices which progressively win the support and approval of the majority as being practicably workable and equitable to the parties concerned."[89] On the other hand, the agreements may be accomplished in a more formalized fashion through the medium of a

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[86] If consecutive increases are becoming larger to be effective, the efforts of one or both firms are tending away from equilibrium.

[87] For an analysis employing calculus, see Zingler, op. cit., pp. 318-20. Zingler conceives all other firms in the industry as firm 1.

[88] If the entrepreneurs do not actively confer with each other, ". . . their travelers, agents, and representatives are usually in pretty close contact with each other, and it is believed that the policy of any one firm quickly becomes known to the others and may influence their decisions. . . ." Clifford Saxton, The Economics of Price Determination (London: Oxford University Press, 1948), p. 17. Manifestations of such efforts are an agreed-upon percentage-of-sales ratio for the determination of the advertising appropriation or some traditional cooperative advertising allowance.

[89] E. G. Nourse, Industrial Price Policies and Economic Progress (Washington, D.C.: Brookings Institution, 1938), p. 135.

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trade association.[90] Another method for gaining quasi-collusion is by passively adjusting to certain leaders in the industry.[91] These leaders tend to dictate the policies followed by the remaining firms in the industry.

However accomplished, rules and customs are established in order to conserve the values or to protect existing rights of current members of the group. Distribution of opportunity will be controlled, and the members will support those rules and practices that tend to perpetuate the relative advantage which they have been enjoying.[92]

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[90] Cf. V. W. Bladen, "The Role of Trade Associations in the Determination of Prices," Canadian Journal of Economics and Political Science, IV (January, 1938), pp. 223-27.

[91] "Certain firms by reason of their size, their strategic position in important industries, or the standing of their management personnel, carry exceptional weight in the business community." Cost Behavior and Price Policy, A study prepared by the Committee on Price Determination for the Conference on Price Research (New York: National Bureau of Economic Research, Inc., 1943), p. 275. See also Saxton, op. cit., pp. 17-18.

[92] Cf. Nourse, op. cit., p. 136. Selig Perlman, A Theory of the Labor Movement (New York: Augustus M. Kelley, 1949), p. 238, states that "If opportunity is believed to be limited . . . it then becomes the duty of the group to prevent the individual from appropriating more than his rightful share . . . . The group then asserts its collective ownership over the whole amount of opportunity, and having determined who are entitled to claim a share in that opportunity, undertake to parcel it out fairly . . . among its recognized members, permitting them to avail themselves of such opportunity on the basis of a 'common rule' . . . . Free competition becomes a sin against one's fellow . . . . A collective disposal of opportunity, including the power to keep out undesirables . . . are natural to the group."

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Nevertheless, efforts at cooperation do not necessarily result in joint-profit maximization.[93] First, the group is vulnerable to vicissitudes of other segments of the economy. Singly and in total the members must deal with other interest groups[94]--for example, labor and government--but the direction, effectiveness, and timing of individual or collective action is difficult to measure.[95]

A second limitation is the inability to police the actions of members of the industry. Where changes are unpredictable, ". . . it is not advisable to disarm in relation to one's rivals."[96] Furthermore, the spirit of competition may become predominant for any one member. He may believe that he can contribute to his own fortunes more by individual than by collective action. He may resort to bargaining and competitive

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[93]Fellner, op. cit., pp. 177-97, suggests the following difficulties: (1) in the case of quasi-collusion, the desire of the members to avoid cutthroat competition among themselves, leaving adjustments incomplete; (2) the impossibility of anticipating many dynamic elements, especially innovation by members of a quasi-agreement; and (3) incomplete coordination where cost and production differentiation exist and pooling information is impossible.

[94]See, for example, K. W. Rothschild, "Price Theory and Oligopoly," Readings in Price Theory, published for The American Economic Association, George J. Stigler and Kenneth E. Boulding, eds. (Chicago: Richard D. Irwin, Inc., 1952), p. 463. Stigler, The Theory of Price, op. cit., pp. 455-63, presents a list of characteristics of oligopolistic action.

[95]Gordon states that the ". . . need of negotiating with organized interest groups requires the use of broad, strategic criteria which often cannot be readily translated into quantitative effects upon profit." R. A. Gordon, Business Leadership in the Large Corporation (Washington, D.C.: Brookings Institution, 1945), p. 329. Chamberlin suggests the following uncertainties: (1) those associated with the direct influence of each seller upon price; (2) those having to do with the degree of intelligence and farsightedness of the competitors; (3) those regarding the incursions which his move will make upon the sales of others; and (4) those resulting from market "frictions" as to the timing of retaliation and his ability to anticipate it. Chamberlin, Monopolistic Competition, op. cit., pp. 51-53.

[96]Fellner, op. cit., p. 199.

techniques. Firm 2 may not desire to readjust passively to the dictates of firm 1; i.e., firm 2 may want to be a leader. If such is the case, he may attempt to anticipate the actions of firm 1 and thus force a particular type of reaction upon the latter.

In the process of acting aggressively, firm 2 may exercise bluff or secrecy.[97] This further reduces the ability of other members to anticipate accurately. The use of random acts has a similar value in confounding competitors. Thus, in breaking with joint-profit maximizing, the entrepreneur may undertake tactical maneuvering and deception in his competitive strategy.

Game theory.[98] A method of analysis capable of dealing with problems of strategy is game theory. The decision-maker in a game is confronted with a cross-purposes maximization problem: He is in conflict with other sellers over whom he has little or no control, and the actions of everyone in the system affect the well-being of the others. A second aspect of a strategic situation is that the players of the game gamble without

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[97] John McDonald, "Strategy of the Seller--or What Businessmen Won't Tell," Fortune, XLIV (December, 1952), p. 196, states that: "The act of secrecy indicates that the incompleteness of information in markets is not altogether accounted for by disabilities of observation and elements of chance. The incompleteness is in part created by the free rational decision to withhold information for strategical purposes."

[98] The theory of games gained significance with the publication of: J. Von Neumann and O. Morgenstern, The Theory of Games and Economic Behavior (Princeton: Princeton University Press, 1947). The best elementary review of the nature and application of game theory is presented by Martin Shubik, "The Uses of Game Theory in Management Science," Management Science, II (October, 1955), pp. 40-54.

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being able to calculate exactly the risks involved.[99] But assuming that the players seek to gain and are willing to recognize and to cope with the conflicting desires of each and diverse actions of others, game theory narrows the problem of choice to a ponderable optimum policy.

The elements of game theory are: (1) the players: the individual decision-makers responsible for the advertising decision; (2) strategies: a set of behavioral patterns which specifies a given advertiser's action in the light of every conceivable action of competitors;[100] and (3) the payoff: the outcome of the game, which varies according to the strategies employed by the players.

Assume that the players do not base their actions upon unqualified optimism (or pessimism), i.e., they do not attempt to gain the highest conceivable reward but accept a limitation upon the maximum in order to avoid the possibility of total loss. Furthermore, assume that utility is numerical, substitutable and unrestrictedly transferable between the players.[101]

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[99]"The problems of the theory of games are characterized by the presence of two types of issues: the nature of individual behavior in situations involving (non-probabilistic) uncertainty; and the interactions in the behavior of individuals when everyone's action may affect the well-being of others." Hurwicz, op. cit., pp. 398-405. However, it should be pointed out that this analysis abstracts from uncertainty concerning the "rules of the game." "Each player knows with certainty: (a) what strategies he is allowed; (b) what strategies his opponent is allowed; (c) the outcome corresponding to any pair of opposing strategies. Finally, there is a significant tacit assumption that each player knows his opponent has the same rules of the game in mind." Daniel Ellsberg, "Theory of the Reluctant Duelist," The American Economic Review, XLVI (December, 1956), p. 911.

[100]Bradford and Johnson, op. cit., p. 370, on the basis of game theory, offer six "principles of strategy," for example, ". . . the use of force resources [economic, social, political, etc.] and deception [within legal and moral limits] to restrict the actions which the other personality may take . . ."

[101]Von Neumann and Morgenstern, op. cit., p. 604.

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Consider a two-person zero-sum game.[102] This game can be described as follows: Firm A chooses a strategy from a given set of strategies. Simultaneously or, if in ignorance, subsequently, firm B chooses some strategy from a set of strategies defined for him by the rules of the game. As a result of these choices, A and B will receive a payoff which is a function of the strategies chosen by both. Since the sum of the game must be zero, A wins (loses) what B loses (wins).

Figure 3 presents a payoff matrix, the cells of which show the outcomes of a pair of opposing strategies of firms A and B. The outcomes are payments of A to B, with negative figures being payments of B to A. If A chooses its strategy II and B chooses its strategy I, firm A receives a payment of 2. If, however, firm A chooses II but B chooses II, firm B receives a payment of 1.

Depending upon the strategy employed by firm A, the worst possible outcome for firm B would be to lose a payment of 5 by choosing its own strategy I or gain a payment of 1 in choosing II. (See the row minima in Figure 3.) By choosing strategy II, firm B can receive the maximum of the minima, i.e., 1. Depending upon the strategy employed by firm B, the worst possible outcome for firm A would be to lose a payment of 2 by

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[102] Because of the difficulties involved in the analysis of nonzero-sum games, this presentation will deal only with zero-sum games, ". . . the one in which one player wins what the other player loses, or more generally, the one for which the sum of all payments made as a result of the game is zero." Edwards, op. cit., p. 407. An advertising game could very well be of the nonzero-sum type because of collective effects upon primary demand. Cf. Merrill M. Flood, "Game Learning Theory and Some Decision-Making Experiments," Decision Processes, R. M. Thrall, C. H. Coombs, R. L. Davis, eds. (New York: John Wiley & Sons, Inc., 1954), pp. 139-158. Moreover, this analysis treats only a finite number of pure strategies.

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Pure strategies of Firm B	
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Column Maxima	

Source: Ada
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Figure 3

A PAYOFF MATRIX FOR A TWO-PERSON ZERO-SUM GAME

Pure strategies of Firm B	Pure Strategies of Firm A			
	I	II	III	Minima Row
I	-5	-2	5	-5
II	2	1	1	1
Column Maxima	2	1	5	

Source: Adapted from Martin Shubik, "The Uses of Game Theory in Management Science," Management Science, Vol II (October, 1955), p. 43.

choosing its own strategy I, a payment of 1 by choosing II, and a payment of 5 by choosing III. (See the column maxima in Exhibit 3.) By choosing strategy II firm A guarantees that firm B never receives more than the minimum of the maxima, i.e., 1. But observe that the minimax equals the maximin. This is a saddle point which is defined as " . . . an outcome v such that by acting appropriately A can be sure of receiving at least v no matter what A does."[103] The existence of a saddle point permits equilibrium, if players choose that strategy which would have the fewest ill effects if the worst possible outcome occurs.[104]

If the number of players is more than two, coalitions may appear. Two players, for example, may cooperate for the purpose of combined action against a third player. The player against whom the coalition is directed may attempt to induce one of the combine to join him through side payments. The theory thus may be extended to include any number of players. Through this rational behavioral model, explicit attention

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[103] Ellsberg, op. cit., p. 921. Note that a saddle point does not necessarily appear under the highly restrictive assumptions imposed in this presentation. If mixed strategies are used, a saddle point always exists in the two-person zero-sum game.

[104] For a presentation of game theory in nonmathematical terms, see McDonald, op. cit., pp. 81-83. For a rudimentary mathematical presentation, see Richard Stone, "The Theory of Games," The Economic Journal, LVIII (June, 1948), pp. 185-201. For a practical application in very elementary terms, see John McDonald, "How to Get a Raise," Fortune, XLVIII (December, 1953), pp. 120-23.

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is given to bargaining and strategy as activities included in an array of action variables.[105] Yet, with the application of the minimax criterion, under appropriate conditions, a determinate solution may be reached even where such strategies are employed.

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[105]The seller employs strategy as he deals with segments of the economy other than competitors in the product market. His fortunes are affected by public opinion, labor organizations, and government agencies. Herrymon Maurer, Great Enterprise (New York: The MacMillan Co., 1955), p. 124, states that some entrepreneurs may consider more closely the possible actions of governmental agencies (e.g., the Federal Trade Commission) than market competition--that some firms " . . . in a position to charge lower prices have at times been reluctant to do so, inasmuch as the government often looks with as much opprobrium upon lowering prices ('unfair competition') as upon raising prices ('monopolistic practices')." As an alternative the seller may place increasingly more emphasis upon advertising as the means of market manipulation.

Another interest group with which the decision-maker may become involved on a strategic basis are the dealers who handle his product in the trade channel. The bargaining strength of the retailers and wholesalers will vary, for example, according to the inventory of the producer's product on hand, the ability to communicate their desires, and the degree of organization of such groups. To some extent, a permissive situation may exist in the trade channel to which the seller may actively adjust his advertising policies and practices.

Furthermore, of particular interest in this respect is the capital market (Cf. e.g., Schickele, op. cit., pp. 373-374.), about which Hart, op. cit., p. 43, said: " . . . the rates of interest appropriate for the firm's internal calculations will in general be higher than the highest rate paid." In other words, the entrepreneur will desire to utilize advertising if he must borrow to do so, only if the profit-contributions are somewhat higher than some external rate of interest.

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CHAPTER III

HUMAN AND ORGANIZATIONAL FACTORS IN DECISION-MAKING

Introduction

Purpose. The study of decision-making requires the analysis of three sets of variables: (1) the characteristics of the decision-maker, (2) the nature of the end or goal being sought, and (3) the properties of the environment within which the action is to take place.[1]

In the presentation thus far, the decision-maker has been viewed as willingly subordinating any nonconforming personal motivation to the formal enterprise goal. This goal has been defined in terms of monetary profit maximization. Although limitations have been placed upon the attainment of this goal to avoid the possibility of complete loss, optimizing some profit stream has been the point of reference. Except for technological characteristics, the environment has been described in terms of conditions exogeneous to the firm.

The purpose here is to study sociological and organizational characteristics of the firm and the psychological nature of the decision-maker, that is, to examine the fictions of institutional decisions and economic man.

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[1] Cf. Arthur Naftalin, Benjamin W. Nelson, Mulford Q. Sibley, Donald W. Calhoun, and Andreas G. Papandreou, An Introduction to Social Science (Chicago: J. B. Lippincott Company, 1953), p. 5.

Point of view. Individual man is considered the unit of decision-making, since only individuals are capable of making decisions.[2] No longer will an atomistic view of man be held; instead, a Gestalt[3] view is taken. Man's behavior will be perceived as arising " . . . from the interlocking interdependence of functions that makes of a person not a set of organs but one organism. . . ."[4] An individual does behave in terms of his whole being,[5] responding to a stimulus as if to a previously acquired set of stimuli. Therefore, decision-making behavior is no longer viewed as impersonally deterministic or of a reflexive, equation-solving nature.[6]

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[2]One executive, questioned about some best method for examining the appropriation decision, answered: "It is wise to consider the quality of men rather than evaluations of their methodologies or scientific procedure in planning advertising expenditures. In a manner, the governing fundamentals of man exemplify the simple approach to your question." James Marvin, Cooper Tire and Rubber Company, Findlay, Ohio, personal correspondence addressed to this writer, dated July 27, 1952. Culliton stated that the planning, control and adjustment of the appropriation ". . .will be largely determined by the character of management." James W. Culliton, The Management of Marketing Costs (Boston: Harvard University Press, 1948), p. 89.

[3]Gestaltism may be defined as that approach which views the organism as ". . .a total configuration, the parts of which cannot be understood in isolation; a change in a part necessarily changes the entire character of the whole and the part, separated from the whole, becomes a different being." Walter A. Weisskopf, The Psychology of Economics (Chicago: The University of Chicago Press, 1955), p. 6. See also, J. N. Brown, Psychology and the Social Order (New York: McGraw-Hill Book Co., 1936), p. 28.

[4]John Frederick Dashiell, General Psychology (Boston: Houghton Mifflin Company, 1937), p. 579.

[5]Celestine N. Bittle, The Whole Man (Milwaukee: The Bruce Publishing Company, 1945), p. 11.

[6]Cf. Joe S. Bain, "Price and Production Policies," A Survey of Contemporary Economics, Howard S. Ellis, ed. (Chicago: Richard D. Irwin, 1952), II, p. 156. See also, George Katona, "Contribution of Psychological Data to Economic Analysis," Journal of American Statistical Association, XLII (September, 1947), p. 453.

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If the frame of reference is the "psychology of man"--as contrasted to the concept of homo-economicus[7]--the values or satisfactions to be maximized involve the preference field of an individual. This field embodies a number of diverse interests, each of which varies in importance to the individual, and which may conflict as well as reinforce one another.[8] Thus the maximizing problem must consider a constellation of satisfactions rather than solely income advantage.[9] These satisfactions and values are both personal and multiple. They may be moral or cultural; they may be founded in an emotional attitude or reflect an altruistic motive or a desire for recognition.[10]

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[7]See, for example, Richard G. Gettell, "Pluralistic Competition," Theory in Marketing, Reavis Cox and George Alderson, eds. (Chicago: Richard D. Irwin, Inc., 1950), p. 89.

[8]Man can be viewed as an organism embodying a constellation of drives and needs, each of which conflicts with and diverges from one another. Unless the explanatory system is complete, this "radial" concept precludes the possibility of predicting man's response to an economic stimulus. On the other hand, man could be considered as encompassing a many-faceted motivational pattern with the economic motive dominating other drives and needs, the latter supporting his economic purpose. Under such an assumption, a rational man's behavior is predictable according to his economic nature. A third view of man is based upon the assumption that his needs and desires are of a varied and divergent nature but that they can be controlled or harmonized: Thus, to the extent that man attunes his noneconomic to his economic self and acts rationally, his responses to perceived economic stimuli are predictable. This latter concept of man affords the basis for this discussion.

[9]See, for example, Peter F. Drucker, The New Society (New York: Harper & Brothers, 1950), pp. 262-272. Cf. Laurence S. Ritter, "The Shape of the Average Cost Curve: Comment," The American Economic Review, XLIII (September, 1953), p. 623. Although this "lump of net advantage" requires explicit attention, many of the values can be imputed to cost and revenue curves. Cf. Fritz Machlup, "Marginal Analysis and Empirical Research," The American Economic Review, XXXVI, Part I (September, 1946), p. 521.

[10]Cf. Peter F. Drucker, The Practice of Management (New York: Harper & Brothers, 1954), p. 357. See also, William H. Whyte, "How Hard Do Executives Work?" Fortune, XLIX (January, 1954), p. 148.

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Although decisions are the result of a single human action, choices are determined in part by the institutional forces surrounding the individual.[11] The sociological aspects of the business firm involve a social system which interacts with the individual. Therefore, changes occur in the individual which would not otherwise take place.[12] The formal organizing process, for example, establishes certain social relationships among the members while the need for coordinated and directed effort imposes restrictions upon the individual behavior.

On the other hand, formal organizing cannot be considered as an all-powerful force to which the individual completely succumbs. Some part of the individual's total orientation stems from drives which are ego-centered. "The individual is able to exercise some choice in achieving his private goals as a member of an organization."[13] He does have will or volition which is identifiable with him, without respect to the organization of which he is a member.[14]

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[11] See, for example, Robert A. Gordon, Business Leadership in the Large Corporation (Washington, D.C.: The Brookings Institution, 1945), p. 317.

[12] Cf. Chester I. Barnard, The Functions of the Executive (Cambridge, Mass.: Harvard University Press, 1938), pp. 41-42.

[13] Robert Dubin, "Decision-Making by Management in Industrial Relations," American Journal of Sociology, LIV (January, 1949), p. 294.

[14] It appears somewhat incongrous that economic theory assumes competition--an aggressive or nonconforming type of behavior--on the part of the entrepreneur, but assumes cooperation and conformity on the part of hired factors. Knight states: "A business unit, or enterprise, is made up of individuals . . . but is distinct from these individuals and constitutes a fictitious person, company, a firm or typically a corporation . . . . They are, of course, controlled by natural persons, but these 'officers' act for the organization and not as individuals." Frank H. Knight, The Economic Organization (New York: Augustus M. Kelley, Inc., 1951), p. 29. However, any absence of cooperation may be viewed as an imperfection in the quality of the human resources.

Assumptions. Rationality is assumed,[15] but it is interpreted as a concept of human behavior as contrasted to an abstract rule of conduct.[16] Decision-making behavior is considered rational to the extent that it "selects alternatives which are conducive to the achievement of previously selected goals."[17] It is objectively rational, if after the fact the ex ante decision maximizes the attainment of given values, while it is subjectively rational if it copes successfully with a situation in the light of current information, even though higher attainment might be possible if more data were available. Behavior is organizationally rational if the value system relates to organizational goals and personally rational if it relates to the individual's values.[18]

The individual's orientation will be influenced by his internal state, which is a composite of all factors, native and acquired,

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[15] No doubt some of man's activities are of an irrational nature, but such actions lie without the purview of this study.

[16] To state that rational man maximizes expected utility, ". . . says nothing about the individual's psychology or behavior and is, therefore, void of empirical content, and is true by definition. As against this, the assumption that the entrepreneur maximizes his profits is based on observation and implies a special hypothesis concerning the businessman's psychology. It is, therefore, an empirical law, which need not apply to every businessman, and may conceivably be untrue, even about the representative entrepreneur." T. Scitovsky, "A Note on Profit Maximization and Its Implications," Readings in Price Theory, George J. Stigler and Kenneth E. Boulding, eds., published for The American Economic Association (Homewood, Ill.: Richard D. Irwin, Inc., 1952), p. 358.

[17] Herbert A. Simon, Administrative Behavior (New York: The MacMillan Company, 1947), p. 75.

[18] Cf. ibid., pp. 76-77.

including his "set," tensions and attitudes.[19] Habitual behavior, for example, may lessen the decision-maker's predisposition for undertaking or concluding a decision. Nonetheless, assume alertness or some representative degree of sensitivity can be imputed to the decision-maker.[20]

Human capabilities (or management competence) must be recognized as a limiting factor in decision-making. The manager may employ logic, utilize mechanical devices, and be aided by economists, accountants, and other specialists. Nonetheless, the quality of his decisions eventually rests upon his own perceptions and intelligence.[21] If the decision-maker's skill falls below some criterion, the departure can be viewed as an imperfection in the management factor.

Each individual perceives the same set of objective data in a different light. These differences arise because the decision-maker translates objective facts into subjective perceptions; thus his personality enters into the process. Since the personality of each

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[19]"It may well be that the great bulk of human behavior does not follow the patterns of sober-reflective maximization of advantage but rather follows first the principle of inertia (nobody does anything unless he has to) and secondly, the principle of least resistance (if you have to do anything, you do the thing that is easiest to do)." Kenneth E. Boulding, A Reconstruction of Economics (New York: John Wiley & Sons, Inc., 1950), p. 37.

[20]Cf. J. S. Early, "Marginal Policies of 'Excellently Managed' Companies," The American Economic Review, XLVI (March, 1956), pp. 45-46. See also, Henry M. Oliver, Jr., "Marginal Theory and Business Behavior," The American Economic Review, XXXVII (June, 1947), p. 381.

[21]One major determinant of the quality of decisions is the selection of intermediate standards used in the process, e.g., the criteria used in forecasting future business conditions. See Joel Dean, Managerial Economics (New York: Prentice-Hall, Inc., 1951), pp. 25-26. Another basic determinant has to do with the standards used in evaluating the planning process itself. Cf. George Katona, "Psychological Analysis of Business Decisions and Expectations," The American Economic Review, XXXVI (March, 1946), pp. 44-62.

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individual is different,[22] perceptions of the same set of objective data vary. However, since a "fact" depends upon the incidence of observation, the most commonly observed phenomenon can be considered as the "objective" event.

Personal and Private Variables

Entrepreneurial Aspirations

The nature of proprietorship goals. The entrepreneur who closely identifies his private success with that of the enterprise, or vice versa, may substitute his personal value structure for the formal purpose of the firm. Where the owner-manager identity has been splintered, the personal and private motives of the manager may play a role at the expense of the formal (economic) purpose of the firm. This section examines the situation where motives of managers are identified with enterprise purpose, but the formal goals of the firm are defined in terms of a psychological field.

Some entrepreneurial aspirations may be based upon emotion or sentiment.[23] Perhaps the firm's advertising is directed toward maintaining "at any cost" the name of its first line of products.[24]

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[22]Eric Fromm, Man for Himself (New York: Rinehart & Company, Inc., 1947), pp. 511-17, presents five orientation types, none of which are pure: (1) receptive (or defensive); (2) exploitative (or aggressive); (3) hoarding; (4) marketing; and (5) productive.

[23]Cf. Clare E. Griffin, Enterprise in a Free Society (Chicago: Richard D. Irwin, Inc., 1949), pp. 64-74.

[24]Cf. Keith Powlison, "The Profit Motive Compromised," Harvard Business Review, XXVIII (March, 1950), p. 104.

Certain aims may be explained only in terms of altruism: There appears to be a growing preoccupation with the "social responsibility of business," e.g., concern with the direct effects of management's decisions upon workers.[25] Various other aims may be explainable in terms of pretentiousness. "It may be, a Napoleonic ambition for sales-volume imperialism as an end in itself outruns the quest for profit beyond a certain level."[26] Ambition may take further forms, for example, sponsoring the most elaborate television program.[27]

One action may be effective in attaining more than one end--two or more ends may be directly and positively related.[28] This is particularly true with advertising efforts. While advertising may create immediate profits and be utilized with that objective in mind, it may, at the same time offer additional security for the firm. On the other hand, ends

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[25] Cf. Edgar M. Hoover, "Growth Decisions in the American Economy, Some Institutional Factors in Business Investment Decision," The American Economic Review, Papers and Proceedings, XLIV (May, 1954), p. 211. Drucker states: "The nature of the profit motive is very often incompatible with that which is socially desirable." Peter F. Drucker, "Management Must Manage," Harvard Business Review, XXVIII (March, 1950), p. 82. Yet Dean, op. cit., p. 33, states that to the entrepreneur ". . . maximizing profits is the chief social responsibility . . . in a competitive economy."

[26] M. Bronfenbrenner, "Imperfect Competition on a Long-Run Basis," The Journal of Business, XXIII (April, 1950), p. 82.

[27] The pursuance of these nonprofit ends requires a permissive situation which allows the sacrifice of at least short-run profits. Cf. George J. Stigler, "The Kinky Oligopoly Demand Curve and Rigid Prices," Readings in Price Theory, George J. Stigler and Kenneth E. Boulding, eds., published for The American Economic Association (Homewood, Illinois: Richard D. Irwin, Inc., 1952), pp. 410-39.

[28] Cf. K. W. Rothschild, "Price Theory and Oligopoly," The Economic Journal, LVII (September, 1947), p. 452. See also, Dean, op. cit., p. 360.

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may conflict with each other. Security, for example, may be attained only at the expense of immediate profits over some range.[29] Thus, if the possibility of unfavorable surprise is weighed more heavily than favorable surprise,[30] predominance may be given to survival. Yet the firm must exist in the short run or the long run becomes irrelevant. Thus, the decision-maker is faced, in part, with an either-or situation with respect to the employment of inputs.[31] The means for treating this problem is preference analysis.

Preference analysis.[32] The basis of preference analysis is the indifference curve which shows various combinations of quantities of two or more values to which the individual is indifferent. Assume

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[29]Nonprofit ends may be only superficially "nonprofit": the payoff for the associated means may merely be difficult to include in a profit and loss statement. Although the relationship may not be expressed, a firm may grant extraordinarily high wages because the good will gained sells more products. Thus a portion of current labor costs should be allocated to future outputs in terms of advertising expenses. Cf. Machlup, op. cit., p. 527.

[30]"The fear of loss may be a more powerful motivation than the hope of profit." Victor E. Smith, "Note on the Kinky Oligopoly Demand Curve," The Southern Economic Journal, XV (October, 1948), p. 206. Cf. See also, Drucker, The Practice of Management, op. cit., p. 46. This apprehensive security-consciousness may tend to reduce, if not make "negative," the uncertainty discount which is deducted from the more distant values.

[31]"Business is multivalued. Decisions are made on very complex criteria, and whether a profit is achieved is only one of the important ones. . . . One of the principal jobs of managing large concerns consists precisely of assigning proper weight to the variety of considerations which always have to be taken into account." John D. Glover, "The Attack on Big Business," Planning the Future Strategy of Your Business, Edward C. Bursk and Dan H. Fenn, Jr., eds. (New York: McGraw-Hill Book Company, 1956), p. 240.

[32]For a similar analysis treating consumer demand, see J. S. Bain, Pricing, Distribution and Employment (New York: Henry Holt and Company, Inc., 1948), Chapter 2; and Bernard F. Haley, "Value and Distribution," A Survey of Contemporary Economics, Howard S. Ellis, ed. (Philadelphia: The Blakiston Company, 1948), pp. 1-48.

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that the satisfactions arising from these ends are positive and continuous and that the individual can rank these ends ordinally according to an "equal," or a "less than equal," desirability.[33] In Exhibit 4, let contours I and II be indifference curves:[34] Any two points (as M and N) on contour I, for example, are equally satisfactory to the entrepreneur. Further, let curves AB and CD be outlay contours, showing equal amounts of outlays, i.e., all points on CD show equal costs of various combinations of the two ends (i.e., security and short-run monetary profits).

Points of tangency (Q and R) will exist between the outlay and indifference curves. If the outlay contour is tangent from below, these will be equilibrium positions.[35] At these points the entrepreneur will maximize end-attainment for the associated outlay. The line QR is the

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[33] Cf. Gerard Debreu, "Representation of a Preference Ordering by a Numerical Function," Decision Processes, R. M. Thrall, C. H. Coombs, and R. L. Davis, eds. (New York: John Wiley & Sons, Inc., 1954), pp. 159-66.

[34] The convexity to the origin (O) implies diminishing marginal substitutibility between the ends. The negative slope of these contours is required because of the positive value of each end. Beyond some range, however, the marginal substitution of nonprofit ends for profit may become infinite. A business institution is first and foremost an economic organization. In the light of our politico-economic system, pursuance of the economic purpose by business firms must remain sovereign. Where nonprofit ends are sought which conflict with the economic purpose, a sacrifice of profits results; but the magnitude of this sacrifice is severely limited. The limits might include: (1) earnings required to attract outside capital, and (2) profits which the company or comparable firms have normally earned. Cf. Dean, op. cit., pp. 33-34. See also, Peter F. Drucker, "The Function of Profits," Fortune, XXXIX (March, 1949), p. 77.

[35] The proof of the "equimarginal" position was demonstrated in Part A, Chapter II, of this thesis. See also, Kenneth Boulding, Economic Analysis (2d ed.; New York: Harper & Brothers, 1948), pp. 739-40.

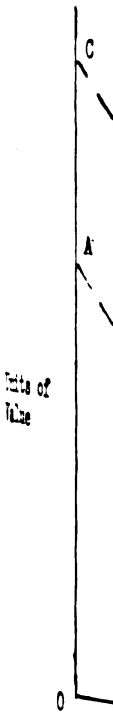
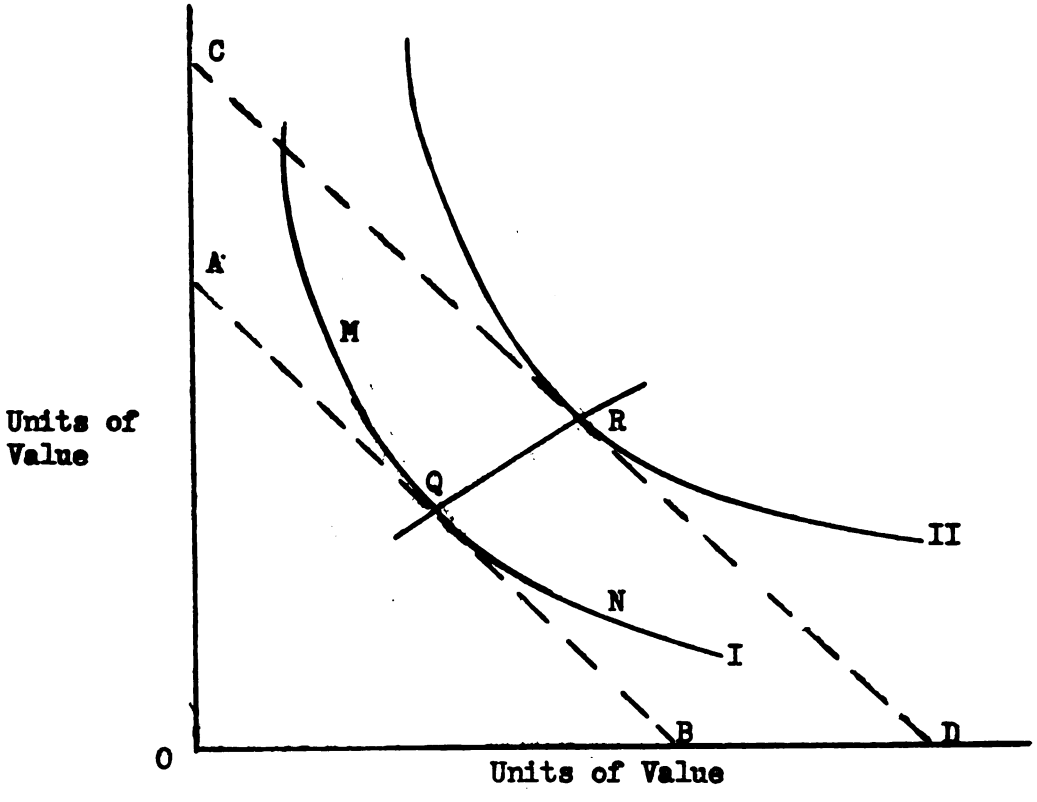

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Figure 4

PREFERENCE ANALYSIS: EQUILIBRIUM POINTS FOR SUBSTITUTION BETWEEN POSITIVE ENDS, COSTS GIVEN



Source: Adapted from Kenneth E. Boulding, Economic Analysis, 2nd ed. (New York: Harper & Brothers, 1948), p. 737.

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"preference expansion" line, showing the path of equilibrium positions as the firm expands to meet its ends.

The equilibrium conditions can be expressed for a number of ends, where the marginal satisfactions are: ΔE_s, ΔE_p, ΔE_g. . . ΔE_n;[36] and where the corresponding marginal outlays are: ΔO_s, ΔO_p, ΔO_g. . . ΔO_n, as: $\frac{\Delta E_s}{\Delta O_s} = \frac{\Delta E_p}{\Delta O_p} = \ldots = \frac{\Delta E_n}{\Delta O_n}$ for any given end-attaining total outlay.[37]

Ego-Centered Nonconformity of Managers

The owner-manager dichotomy.[38] With the advent of the corporate form of organization, it is no longer necessarily true that "where lies the risk also lies the control."[39] Although risk-bearing may not be delegated, broad responsibilities and authority have been delegated to nonowner executives. The locus of at least operating decisions may be transferred from owners to professional managers who are merely hired

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[36]The symbols s, p, and g, might denote security, short-run monetary profits and growth respectively.

[37]Schickele suggests that an indifference curve might be constructed which connects the points of indifference between the value of a "certain" income and the expected value of an uncertain income. Thus, the expected income sacrificed in order to obtain the certain income measures the "value" of meeting survival ends (e.g., security). Rainer Schickele, "Farmers' Adaptation to Income Uncertainty," Journal of Farm Economics, XXXII (August, 1950), p. 362.

[38]Cf. Griffin, op. cit., pp. 44-46 and 95-97. See also, James Burnham, The Managerial Revolution (New York: The John Day Company, Inc., 1941), pp. 71-88; and Neil W. Chamberlain, The Union Challenge to Management (New York: Harper & Brothers, 1948), especially Chapter 2.

[39]Ernest Dale, Planning and Developing the Company Organization Structure, Research Report No. 20 (New York: American Management Association, 1952), p. 107.

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factors.[40] This splintering of the owner-manager identity may weaken the association between institutional purpose and the personal ends of the decision-maker.

Nevertheless, risk-bearers (owners) do exercise some control over management decisions, especially in the long run.[41] Furthermore, interests of stockholders and (nonowner) managers partially coincide because ". . . both parties derive benefits from successful operations. Profitable operations enhance the prestige, secure the position, and probably increase the monetary rewards to management."[42] Therefore an individual operating in a managerial role has strong allegiance with ownership interests.[43]

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[40]Economists have long recognized the dichotomy of the entrepreneur-manager relationship and have speculated upon its effects. Early views attributed to human nature a lack of responsibility toward property where such property was not owned. "The 'intensity of interest in the subject' that is necessary to the 'successful conduct of a great business is seldom to be expected (in a man), conducting a business as the hired servant and for the profit of another.'" John Stuart Mill, Principles of Political Economy (Boston: Charles C. Little & James Grown, 1848), I, p. 168. In Adam Smith's view ". . . the directors of such companies . . . being the managers rather of other people's money than their own, it cannot be expected, that they should watch over it with the same anxious vigilance with which the partners in a private co-partnery frequently watch over their own." Adam Smith, Wealth of Nations, Modern Library Edition (New York: Random House, Inc., 1937), p. 700.

[41]"The promotion of managerial power, prestige, and salary increases at the expense of profits tends to be checked by the ownership interest." Walter W. Heller, "The Anatomy of Investment Decisions," Harvard Business Review, XXIX (March, 1951), p. 96. Ben W. Lewis, "The Corporate Entrepreneur," Quarterly Journal of Economics, LI (May, 1937), pp. 539-49, states that stockholders do control, for example, by expressing confidence in the stock market.

[42]J. Fred Weston, "Enterprise and Profit," The Journal of Business, XXII (July, 1949), p. 143.

[43]Norman S. Buchanan, The Economics of Corporate Enterprise (New York: Henry Holt and Company, 1940), pp. 448-449, concludes that the owner-manager dichotomy is not particularly significant.

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This allegiance, however, may not coincide with ownership interests over the full range of his preference field. The extent of the deviation is determined by at least three factors: (1) the restraints imposed by the employment contract and its actual application; (2) the inducements offered for conformity; and (3) the direction and strength of the individual's volition while operating as a manager.

Determinants of identification.[44] The extent and nature of the employment contract is indefinite in most cases.[45] Managerial authority is generally defined in a negative sense, with only the nature of the business and specific stockholder rights explicitly given in the corporate charter.[46] The vagueness associated with delegated legal authority has permitted the accumulation of powers in the hands of management.

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[44]Considerable research has been done concerning operative employees' identification with the firm. See, for example, the work done by Elton Mayo, The Human Problems of an Industrial Civilization (Boston: Harvard University Press, 1946). On the other hand, relatively little has been done with respect to management, a major exception being the work by Gordon. This may be explained by the fact that labor has been viewed as having a basic conflict with management, the latter viewed as merely representing owners. It is management that applies certain social skills to integrate and direct workers' efforts. In fact, many employee studies have given the impression that management is essentially logical and completely bounded by the formal structure and objective of the organization. See, J. A. C. Brown, The Social Psychology of Industry (London: C. Nicholls and Company, Ltd., 1954), p. 94. Also see Delbert C. Miller and William H. Form, Industrial Sociology (New York: Harper & Brothers, 1951), pp. 217-18.

[45]Cf. Herbert A. Simon, "A Formal Theory of the Employment Relation," Econometrica, XIX (July, 1951), pp. 293-305.

[46]"It is customary for bylaws to specify the powers which the stockholders grant to the board of directors. . . . [But] it is by no means unknown for the board to be provided with authority to amend or enact bylaws themselves. . . . [and] limitations upon the board's powers have not been, primarily, with respect to the type of actions which it may take but, rather, with respect to the purpose and intent of the action taken under the almost limitless powers granted to the board." Chamberlain, Union Challenge to Management Control, op. cit., p. 12.

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Moreover, the lack of stockholder organization and the apathy with which stockholders view their ownership responsibilities have increased the real authority of professional management.[47]

Another determinant of managerial identification has to do with the inducements offered for identification. The inducement which best accounts for the association of an individual with any economic organzation is his desire to gain control over goods and services,[48] through the acquisition of salary, incentive pay, or both. Nevertheless, motivation for membership may differ from motivation with respect to participation.[49] If a range of discretion exists wherein private motives may be exercised without loss of membership rights, two limitations of the formal reward system may further reduce the propensity to identify.

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[47]The specific conditions which expand management's real discretion area are: (1) dispersion of ownership, (2) docility and apathy of shareholders, (3) the costs of organization and opposing management, (4) strategic position of management with respect to machinery of vote-gathering, and (5) changes in corporation laws and their application which have diluted stockholder strength. Cf. Harry L. Purdy, Martin L. Lindahl, and William A. Carter, Corporate Concentration and Public Policy (New York: Prentice-Hall, Inc., 1949), p. 95. See also, Neil W. Chamberlain, "The Corporation as an Organization," Industrial Conflict, Arthur Kornhauser, Robert Dubin, and Arthur M. Ross, eds. (New York: McGraw-Hill Book Company, Inc., 1954), Chapter 11. Chamberlain, The Union Challenge to Management, op. cit., p. 13, states that, although certain legal restrictions apply, "this authority . . . is profound. Indeed, so singular, so undivided, is the power of management . . . that it has been held to exist independently of the stockholders themselves."

[48]Certain nonfinancial motives may play a role, especially in the selection of a particular source of employment.

[49]Regular executive compensation ". . . could be cited as an incentive to make executives stay at their job. But it is not a direct incentive to sound judgments and wise decisions--in short to efficiency on their jobs--since rarely does premium or penalty attach to executive performance." Maurer, op. cit., p. 79. Cf. also Daniel Katz and Robert L. Kahn, "Some Recent Findings in Human-Relations Research in Industry," Readings in Social Psychology, Guy E. Swansen, Theodore M. Newcomb, and Eugene L. Hartley, eds. (New York: Henry Holt and Company, 1952), p. 658.

The company's inducements may not be representative of the individual's goals, or his private rewards may not be maximized through greater individual effort.

In the first instance, even though profits and salaries are directly related, the decision-maker may not strive for maximizing profits where salaries are not representative of his goals.[50] Moreover, there is a difference between assuming that the rewards return directly to the individual and assuming that the rewards accrue directly to the organization and thus indirectly to the individual, although the two may be related in the form of bonuses. Since executive compensation is not related directly and completely to the results of operations, the manager may turn his attention to those standards which determine his salary most directly.[51]

The third factor determining the degree of institutional identification concerns the volition and the ego-centered motives of the individual.[52] Motives may stem from needs completely unrelated to his business position. His actions may contribute to organizational

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[50] "The connection between the formal reward system of the organization and the behavior of the individual is often indirect and is mediated by processes which in themselves may be more significant than the formal reward system." Katz and Kahn, op. cit., p. 658.

[51] Cf. Weston, op. cit., p. 152. See, in addition, Robert B. Fetter and Donald S. Johnson, Compensation and Incentives for Industrial Executives (Bloomington, Indiana: Indiana University Press, 1952).

[52] The strength of individual self-structure varies from person to person; but it is difficult to contradict the presence of a private gyroscope or stabilizer which holds the individual to the course that his concept of himself sets. Cf. Donald M. Johnson, Essentials of Psychology (New York: McGraw-Hill Book Company, 1948), p. 51. Henry states that a study of the "personality communalities of a group of successful business executives" showed that they were ". . . firm and well defined in their sense of self-identity." William E. Henry, "The Business Executive: Psychodynamics of a Social Role," Human Relations in Administration, Robert Dubin, ed. (New York: Prentice-Hall, Inc., 1951), p. 104.

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purpose but not enhance personal need-satisfactions;[53] or they may enhance personal need-satisfactions but not contribute to the organization. Decision-makers are torn between these "inner" and "outer" pressures.[54] In the absence of compulsory identification, they may be governed by personal needs and ambitions, which may be at variance with those of the organization.[55]

Ego-centered goals. Managers may not receive profits from taking a chance, but may lose their positions if they commit serious error. If so, preservation of the job may become a stronger motive than

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[53]On the other hand, the exercise of a personal motive may enhance formal end-attainment. Katz and Kahn, op. cit., p. 658, report that: "The workers who were motivated to produce above the norm were not primarily activated by the desire to increase company earnings. They were presumably more interested in furthering individual ambitions to acquire better position, wages, and prestige."

[54]The theory of "homeostasis" appears applicable to the tendency of the individual for unity of personality, i.e., the proclivity for integrating the many and diverse emotions, desires, and needs involved.

[55]See Arthur M. Ross, Trade Union Wage Policy (Berkeley: University of California Press, 1953), p. 25. The discussion is not a complete denial of institutional identification. Although the psychological basis of identification and the determination of its strength are obscure, imposition of organizational aims upon the individual's value structure cannot be denied--identification is required for cooperative effort. Cf. Barnard, op. cit., p. 86. Simon, Administrative Behavior, op. cit., p. 18, gives these factors of identification: "First, personal success often depends upon organizational success. . . . Second, loyalty seems based partly on . . . the spirit of competition which is characteristic of private enterprise. Third, the human mind is limited in the number of diverse considerations which can occupy the area of attention at one time, and there is a consequent tendency to overemphasize the importance of those elements which happen to be within that area."

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increasing the enterprise accomplishment.[56] In this light, the desire to keep the record clear of mistakes has stultifying effects.[57]

Ego-centered drives may find their release in the association with and preservation of an inordinately large enterprise or with an excessively bureaucratic management organization. To some extent executive authority, promotion possibilities, and recompense are related to the size of an organization.[58] Moreover the manager may derive certain satisfactions from activities involved in manipulating the organization structure in the light of expanding requirements. This motivation stems in part from an interest in the task of managing itself.[59]

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[56]"Who is to condemn (or even know), if management turns down a risky venture that could cost them their jobs." Dean, Managerial Economics, op. cit., p. 582. Cf. Gordon, op. cit., p. 324, and E. A. J. Johnson and Herman E. Krooss, The Origins and Development of the American Economy (New York: Prentice-Hall, Inc., 1935), p. 205.

[57]See, for example, Franklin G. Moore, Manufacturing Management (Chicago: Richard D. Irwin, Inc., 1953), p. 47.

[58]"The salaries of the management group, and particularly of top management, appear--aside from chance variation--to vary with the size of the company (measured by capital employed) and with volume of sales rather more definitely than with the rate of profits." Griffin, op. cit., p. 98. See also, Heller, op. cit., p. 97, and J. M. Clark, "Symposium on Profits and the Entrepreneur," Journal of Economic History, supplement (December, 1942), p. 139.

[59]Economists have long recognized the presence of "psychic" income involved in working. Something more than the absence of a "pain-cost," pleasure, may be derived from labor. See Zenas Clark Dickinson, Economic Motives (Cambridge: Harvard University Press, 1924), pp. 237-38 and 271-85. See also Solomon E. Asch, Social Psychology (New York: Prentice-Hall, Inc., 1952), pp. 316-19. The need has been termed "creativeness" and the motive "task-oriented." See, for example, Morris S. Viteles, Motivation and Morale in Industry (New York: W. W. Norton & Company, Inc., 1953), p. 305.

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A "psychic" income, something other than a financial return, may be forthcoming from the problems and challenges which the job itself offers.[60]

The exercise of ego-centered, nonconforming motives may prove irrational in terms of the formal purpose of the organization. The advertising manager may expend more time upon the preparation of a highly formalized budget than can be justified by the extrinsic value of such a presentation, merely because he likes to do a "good" job.[61]

Sociological and Organizational Variables

Sociological Elements of Nonidentity

Assumptions. The discussions in this final section rest upon two basic tenets: one, an economic institution embodies a social system, part of which is structured formally and part informally, and two, individualism is an inadequate explanation of man's behavior.

With the evolution of "masses" in our modern industrial environment, man typically works through others or with groups. Each individual may voluntarily and informally ally himself with others who have similar aims, through some innate or acquired desire for association.[62]

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[60]"Successful businessmen when they can be induced to analyze their motives attach great importance to what they call a 'sense of accomplishment.' This is a manifestation of the impulse to create something. . . ." William Foote Whyte, Money and Motivation (New York: Harper & Brothers, 1955), p. 11. See also Griffin, op. cit., p. 84, and Maurer, op. cit., p. 89.

[61]For prediction purposes, preference analysis may be employed with an equilibrium position attained for the choice between organizationally rational and nonrational ends. See the section entitled: Preference Analysis.

[62]See, for example, Charles A. Ellwood, The Psychology of Human Society (New York: D. Appleton and Company, 1926), p. 118.

In addition, since individuals and sub-groups require coordination and direction, a hierarchy of values and a system of relationships are institutionalized formally by "leaders." In this light, the business firm may be viewed as a social organization.[63]

The original nature of man includes a strong affiliative disposition.[64] Moreover, the process of social learning results in a genuine transformation of motives: ". . . The group compels changes in the psychological character of the individual and, therefore, in the motives of individuals which otherwise would not take place."[65] The group transmits custom and tradition, while implanting social ideals.[66]

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[63]Gordon W. Allport, "The Historical Background of Modern Social Psychology," Handbook of Social Psychology, Gardner Lindzey, ed. (Cambridge, Mass.: Addison-Wesley Publishing Company, Inc., 1954), p. 17, presents the characteristics of a social organization.

[64]Parsons states that a ". . . very substantial component of the individual's self-interest is directly dependent on his enjoying the favorable attitudes of others with whom he comes in contact in his situation." Talcott Parsons, "The Motivation of Economic Activities," Canadian Journal of Economic and Political Science, VI (May, 1940), pp. 190-91.

[65]Eugene L. Hartley and Ruth E. Hartley, Fundamentals of Social Psychology (New York: Alfred A. Knopf, Inc., 1952), pp. 41-42.

[66]Ellwood, op. cit., pp. 41-42. Recent industrial studies ". . . show the inadequacy of applying the behavioral model of individual motivation to a social organization. The studies argue strongly for the inclusion of social-organizational variables, or at the very least of perceptual and attitudinal factors which reflect the complexities of organizational structure." Katz and Kahn, op. cit., p. 650. Also see Allport, op. cit., p. 15. In 1921, Robertson stated: "A high wage will not elicit effective work from those who do not feel themselves an integral part of a community. . . ." D. H. Robertson, "Economic Incentives," Economica, I-II (October, 1921), p. 244. In 1913 Gilbreth stated that ". . . there is nothing that can permanently bring about results from scientific management and the economies that it is possible to effect by it unless the organization is supported by the heavy cooperation of men." Frank B. Gilbreth, "Units, Methods and Devices of Measurement Under Scientific Management," Journal of Political Economy, XXI (July, 1913), p. 623.

The informal organization.[67] A formal structuring of job and personnel relationships and a system of values are requirements for effective large-group undertakings. However, since the formal organizing process abstracts from the people fulfilling the ideally defined roles, the individual is incidental to his defined relationships.[68] But people do not meet precisely the definitions of their offices. In fact, whenever persons are placed in continued formal contact, their relationships become characterized by actions and reactions over and above formal expectations.[69] These superfluous relationships and any spurious values (in terms of organizational rationality) constitute the informal organization.[70]

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[67]Although most of the material concerning informal organizations deals with operative personnel, the behavior manifested by executives is " . . . just as human as the reactions exhibited by employees within the organization." Burleigh B. Gardner and David G. Moore, Human Relations in Industry (Homewood, Illinois: Richard D. Irwin, Inc., 1952), p. 1.

[68]Cf. Miller and Form, op. cit., pp. 145-46.

[69]One of the best known studies of industrial organizations concluded that " . . . there is something more to the social organization than what has been formally recognized. Many of the actual existing patterns of human interaction have no representation in the formal organization at all, and others are inadequately represented by the formal organization." F. J. Roethlisberger and William J. Dickson, Management and the Worker (Cambridge, Mass.: Harvard University Press, 1950), p. 559.

[70]Cf. Asch, op. cit., p. 265. The informal organization " . . . is a spontaneous group that arises simply because men associate with one another. Such groups are to be found in all kinds of organizations, regardless of their nature." Dubin, op. cit., p. 57. Barnard, op. cit., p. 112, has suggested the following as functions of informal organizations: (1) communication, (2) maintenance of cohesiveness, and (3) maintenance of the feeling of personal integrity.

The relationships of the informal organization[71] to the formal organization determines how effectively the latter will function.[72] The informal group may be indifferent to, attracted to, or oppose the formal purpose of the business institution and the formal (blueprint) organization structure. Combating the formal enterprise objectively may not be the original aim of an informal group, but, whether deliberate or inadvertant, evidence indicates that such may occur.[73]

Actions reflecting the informal aspects of an organization include: (1) decisions that are based, in part, upon the sentiments and values of the informal group, or upon the information transmitted by the "grapevine"; and, (2) decision-making that is transferred informally to unauthorized individuals. Basic to an informal group is " . . . the intense and constantly policed unity that makes for near unanimity among its members.[74] The individual desiring membership must accept

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[71]Manifestations of informal systems are exemplified by the "grapevine," interrelationships of authority and social contacts, which cannot be charted, and unwritten rules of organizational conduct. Cf. Koontz and O'Donnell, op. cit., p. 286.

[72]See Dubin, op. cit., p. 57. "Informal organization at the executive level, just as at the work level, may either facilitate or impede purposive co-operation and communication." Roethlisberger and Dickson, op. cit., p. 562. Edward A. Shils, "Informal Organization and Formal Organization," Human Relations in Administration, Robert Dubin, ed. (New York: Prentice-Hall, Inc., 1951), p. 51, states that because of " . . . generalized moral predispositions," the primary group actually will operate so as to facilitate attainment of the formal purpose.

[73]The results of a study in union-management relations indicated that " . . . often union and management officials are forced to make decisions . . . when alternative courses of action cannot be brought into the open because of prior informal committments and possible damage to their own status and/or the status of individuals who have claims on them. . . ." Melville Dalton, "Unofficial Union-Management Relations," Human Relations in Administration, Robert Dubin, ed. (New York: Prentice-Hall, Inc., 1951), p. 77.

[74]Ibid., p. 48.

and respond in terms of the norms of the group. Even the formal leader must maintain some social affinity with informal groups of subordinates. Therefore, he accepts and expresses to some extent the norms of these informal groups. To the extent that decision-makers employ the values and the factual premises of informal groups and to the degree that such premises are in conflict with organizational rationality, the formal purpose of the firm will be subverted.[75]

In the case of a transference of decision-making to informal unauthorized individuals, decision premises reflecting more fully standards of the informal group than those established according to the formal purpose of the firm are likely to be employed.

Status drive. To a considerable extent, social learning results in an acceptance of positional roles. Forced by biological limitations to join "groups," the individual eventually reaches a point where membership sanction becomes so important that he is willing to limit physiological drives to attain it. Some part of the individual's "ego-ideal" will require satisfactions in terms of group acceptance.[76] Countering this desire for social proximity, however, his competitive

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[75]Cf. Talcott Parsons, op. cit., pp. 190-91. Because of departmentalizing and specialization of work within the typical enterprise, "work contact" groups tend to develop that have the usual characteristics of primary groups. Each work contact group has a peculiar and identifiable psychological environment, quite apart from that of the formal organization. The nature of these formal or informal groups determines the directional affinity of the individual. The relationships established by ". . . the formal organization in general are more logically explicit and articulate than those of the informal organization, but they are not for that reason more powerful in their effects than those of the informal organizations." Roethlisberger and Dickson, op. cit., p. 562.

[76]Cf. Mason Haire, Psychology in Management (New York: McGraw-Hill Book Company, 1956), p. 24.

spirit sets up a barrier to undifferentiated association with others of lesser ability, with those holding inferior resources, or with others performing less significant activities. Thus the intrinsic value of social approval rests upon differentiated acceptance.

In a business enterprise, as in any organization of people, a process of social evaluation is constantly taking place.[77] The levels within the management hierarchy provide the formal status system,[78] while the attitudes and preferences of constituents define status in the informal organizations. Socializing increases an individual's awareness of status attributes and they become desirable to him.[79]

Status may be related to the nature of the task associated with an executive's position. If, for example, a particular management group is "production-oriented," the production manager may exercise more real authority than the advertising manager, although both are at the same management level. This informally expanded authority may manifest itself in committee action, with the advertising manager playing a role subordinate to the production manager.

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[77]See, for example, Roethlisberger and Dickson, op. cit., p. 555.

[78]The hierarchy of differentiated positions is the status system, while status refers to a particular place within the hierarchy. Cf. Hartley and Hartley, op. cit., p. 568.

[79]Whyte, op. cit., p. 145, says that many management aspirants have the mistaken idea that status and "all that sort of stuff" is an extremely minor incentive for executives. In fact, however, privilege stratification ". . . seems to be as much an accepted thing as salary differentials. . . . It has become a larger section of the carrot a corporation man chases." "The Big Puzzle: Who Gets How Much of What?" Business Week (October 16, 1954), p. 70. See also Petersen and Plowman, Business Organization and Management (Chicago: Richard D. Irwin, Inc., 1953), p. 507.

The desire for status leads to rationalizations concerning the need and use of it, especially with respect to the exercise of authority.[80] The executive may attempt to influence decisions outside his purview or, in order to maintain status, may insulate himself from communication with subordinates having superior knowledge concerning the decision area.[81]

Because of the importance of status in an organization,[82] status symbols are required that visibly distinguish position in the hierarchial relationships. These symbols become highly desirable for, among other functions, they create a presumption concerning rank or privilege and act as prima facie certification of ability.[83] One status symbol relates to the magnitude of the budget allocated to an executive's department. If larger budgets impute greater prestige, the executive may act in an organizationally irrational manner in order to attain it.[84]

Reference groups. Participants in a work situation maintain multiple sociological attachments within and outside the work environment. Groups with which they identify themselves, although physically distant

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[80] Cf. Simon, op. cit., p. 209.

[81] Hartley and Hartley, op. cit., p. 583, discusses the development of "yes men."

[82] Cf. Burleigh Gardner, "Management and the Worker," An Introduction to Social Science, Arthur Naftalin, et al., eds. (Chicago: J. B. Lippincott Co., 1953), p. 132.

[83] Cf. Chester I. Barnard, "Functions and Pathology of Status Systems in Formal Organizations," Industry and Society, William F. Whyte, ed. (New York: McGraw-Hill Book Company, 1946), pp. 46-47.

[84] Cf. Everett C. Hughes, "Status and Informal Relations," Human Relations in Administration, Robert Dubin, ed. (New York: Prentice-Hall, Inc., 1951), pp. 268-70. See also Katona, op. cit., pp. 47-8.

at the decision period, are "reference groups."[85] In spite of the fact that reference groups may be unrelated to the participant's source of employment, they may be used as points of reference for business decisions.[86] The decision-maker may be a member of a local advertising club whose constituents measure skill or attainment according to the amount of the advertising appropriation with which a member deals. This standard may be employed in judging candidates for office in the club. Aspirants to such offices may apply this standard to budget requests in their firms.

The intensity with which reference groups shape the decision-maker's orientation varies over time and among individuals.[87] Since these groups depend largely upon a highly voluntary type of membership, the affinity for such associations is strong.[88] The extent of the conflict between the values of the reference group and the formal purpose of the business firm is determined by the culture of the reference group; and the degree to which the values are transposed to business decisions depends upon the organizational rationality of the individual.[89]

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[85]Physical proximity relates to"membership" groups. Cf. Hartley and Hartley, op. cit., p. 466.

[86]Miller and Form, op. cit., p. 186, suggests that ". . . purely 'social' clubs may be more influential in business affairs than business organizations."

[87]Cf. Op. cit., p. 185.

[88]Cf. Hartley and Hartley, op. cit., pp. 491-92.

[89]See Miller and Form, op. cit., p. 186.

Formal Organizational Impediments to Identification

The formal organizing process. The business firm is more than a heterogeneous unrelated collectivity.[90] The referent for the formal organizational relatedness--the rallying point--is the objective of that group.[91] But identification with the objective and cooperation among the members do not occur randomly. Individual efforts must be directed and coordinated, i.e., internal equilibrium and direction must be created. This process is called organizing.[92]

Although organizing can be viewed as costless or given, the process may be defective or ineffective. Formal organizing may actually

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[90]Marschak defines an organization as ". . . a group of persons deciding about different variables on the basis of different information [i.e., each having different facts and perceptions of the facts], but agreeing to obey a set of rules and decisions [i.e., statements with respect to formal enterprise purpose, delegated authority, etc.] and rules of information about the state of nature in pursuing their respective goals." Jacob Marschak, "Theory of Organization," a paper presented at Michigan State University, May 24, 1955. See the same author, "Elements for a Theory of Teams," Management Science, I (January, 1955), pp. 127-37.

[91]"In its most elementary sense, a group transforms out of a collection by physically coming together and interacting with each other about a common objective or problem." Eugene E. Jennings, "Forces that Transform a Collection into a Group," Personnel Journal, XXXV (September, 1956), p. 127.

[92]The energy of any group can be expended in two ways: (a) maintenance energy: that used in the internal machinery which keeps the group in being; and (b) effective energy: the residue, that used to carry out the purposes for which the group explicitly exists. The effective energy--for example, the energy used in preparing and disseminating the advertising message--is directly income-producing. Cf. D. Cartwright, "Survey Research: Psychological Economics," Experiments in Social Progress, J. G. Miller, ed. (New York: McGraw-Hill Book Co., 1950), p. 52. Problems of internal equilibrium are not separate from, or unrelated to, the objectives of the enterprise, since ". . . the success with which the concern maintains external [or economic] balance is directly related to [the effectiveness of] its internal organization." Roethlisberger and Dickson, op. cit., p. 552. "The analysis of internal balance resembles in some degree the discussion of homeostasis in biology. . . ." Alderson, "Survival and Adjustment in Organized Behavior Systems," op. cit., p. 67.

impose impediments to organizationally rational behavior. Formal institutional arrangements, for example, may create inflexible and inconsistent decision actions.[93] Much of the difficulty arises because of the diffusion and fractionization of decision-making authority within the firm.

As an organization grows, the additional complexity and number of human interrelationships[94] place an increasing demand upon any single executive. Assuming some optimum (or maximum) span of control,[95] an increasing number of direct subordinates will eventually curtail the

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[93]Some decisions are made according to a body of policy and practice already in existence (previously decided upon). Such systems are intended to increase the "routineness" of decision-making and thus to reduce the costs, especially of mistakes, of subordinates involved in the process. Nevertheless, tradition, as contrasted to ad hoc examinations of cause-and-effect relationships, may be more costly than beneficial. Cf. Ernest Dale, "New Perspective in Managerial Decision Making," Journal of Business, XXVI (January, 1953), p. 2, and Simon, Administrative Behavior, op. cit., p. 4. See also Ross Hagner, Psychology of Personality (New York: McGraw-Hill Book Co., 1934), p. 275, and Marion Harper, Jr., "Making Business Decisions," Journal of Marketing, XV (July, 1950), p. 58.

[94]V. A. Graicunas, "Relationship in Organization," Papers on the Science of Administration, Luther Gulick and L. Urwick, eds. (New York: Institute of Public Administration, Columbia University, 1937), pp. 181-87, presents three sets of relationships: (1) the direct single relationships with each subordinate; (2) the direct group relationships with each possible combination of subordinates; and (3) the relationships among the subordinates of a common supervisor.

[95]The concept is used here in the narrow sense, excluding, for example, the span of knowledge. Cf. Peterson and Plowman, op. cit., p. 110.

executive's ability to coordinate effectively.[96] To overcome this limitation, the superior will delegate certain responsibilities and authorities to selected subordinates. In this respect, the organization is coordinated through the progressive devolution of authority to successive tiers of subordinate executives.[97] The executive organization becomes a series of decision centers, particularized and diffused throughout the hierarchy.[98] The formal structuring thereby reduces centralized, authoritarian, and controlled decision-making.

At a minimum the superior retains the right of review over decisions made by subordinates.[99] Since a superior cannot divest

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[96] E. A. G. Robinson, in 1931, stated that ". . . no one individual can effectively control more than four or five subordinate department heads. If he attempts to manage more he must either cause endless delays, or else become no more than a rubber stamp." E. A. G. Robinson, The Structure of Competitive Industry (London: James Nisbet & Co., Ltd., 1931), p. 49. "Just why an executive already having four subordinates should hesitate before adding a fifth . . . becomes clear if it is realized that the addition not only brings twenty new relationships with him, but adds nine more relationships to each of his colleagues." Graicunas, op. cit., p. 185.

[97] Peterson and Plowman, op. cit., p. 107, state that the management hierarchy consists ". . . of persons of varying ranks arranged in a series of strata, or levels, ranging from those with the highest authority and corresponding responsibility at the top level to those with the least authority and responsibility at the bottom." These authors term this the "levels theory of organization."

[98] Cf. J. L. McCamy, "Analysis of the Process of Decision-Making," Public Administration Review, VII (January, 1947), p. 42.

[99] ". . . By 'superior' we mean 'more comprehensive'; by 'subordinate' we mean of 'a lower or more restricted order.'" Barnard, op. cit., p. 96. By implication, a subordinate is accountable to some higher superior. Cf. Ralph C. Davis, Industrial Organization and Management (New York: Harper & Brothers, 1940), p. 320.

himself of any responsibility in the delegation process,[100] the decision process becomes a series of implied or explicit decisions. But the discretion of subordinates is limited by the extent of the authority delegated to them. If the definition of duties and responsibility is communicated in very general terms or not at all considerable decision-making discretion rests with subordinates.[101] As a result, directives may coincide with the formal purpose, yet the additives--the detailed and specific decisions at lower levels--may deviate from the objectives of the firm.

The second effect of organizational growth arises from the fragmentation of decision-making.[102] Increasing functional variety and complexity will eventually transcend the span of comprehension of any single executive. Along with the vertical relationships which are established by delegation, a horizontal pattern of relationships--departmentalization--occurs which enhances the employment of specialists.[103] This horizontal segregation of activities generally takes place according to similarity of duties. Through this process, the major executive can delegate responsibility and authority to a

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[100] Cf. Harold Koontz and Cyril O'Donnell, Principles of Management (McGraw-Hill Book Co., 1955), pp. 61-62. See also Simon, "Decision-Making and Administrative Organization," op. cit., p. 130.

[101] Cf. Robert Tannenbaum, "The Manager Concept: A Rational Synthesis," The Journal of Business, XXII (October, 1949), p. 237. See also, Robert Dubin, "Decision-making by Management in Industrial Relations," American Journal of Sociology, LIV (January, 1949), p. 292.

[102] Cf. Ralph C. Davis, The Fundamentals of Top Management (New York: Harper & Brothers, 1951), p. 161.

[103] Knight distinguishes between specialization and division of labor on the basis that the former includes "differentiation." Knight, op. cit., p. 165.

group of subordinates for the more routine and detailed aspects of some particular set of tasks, thus creating formal subordinate organizations within the original group.[104]

Nevertheless a single supervisor for each section must be appointed. The responsibility and authority for decision-making, and control of the execution thereof, must finally be centralized within a single decision center. Authority must be localized within each unit as a means of gaining accountability.[105] Since communication and cooperation among these decision centers are necessary for the total structure to function effectively, an executive organization develops that knits together the heads (loci of accountability) of the departments.[106]

Communication: A filtering process. With the introduction of the "levels" theory of organization, a serial type of decision-making is implied. Authority for decision-making may be delegated and then the choice reviewed, or a tentative decision may originate at a relatively low level, then pass upward in the management hierarchy. Therefore organizationally rational decisions require that the common purpose of the organization and the specific ends of the particular work-group be known to the subordinate decision-maker: Communication is required.

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[104] Cf. Barnard, op. cit., pp. 110-11.

[105] See, for example, Simon, "Decision-making and Administrative Organization," op. cit., pp. 130-32.

[106] "The executives of several unit organizations as a group, usually with at least one other person as a superior, form an executive organization." Barnard, op. cit., p. 111.

The completeness and manner of this communication influence the nature of the decision.[107]

If the initiative for the determination and communication of value premises is not undertaken formally, the informal group will develop its own. These standards, developed informally by default, may be based upon the isolated, the specific, and the expedient.[108] The direction offered by these standards will not lead necessarily toward formal purpose accomplishment. Only haphazardly will decisions based upon inadequate or inaccurate value premises coincide with the enterprise objectives.

In the feedback of information, there is a tendency for ". . . the relay point (decision center) to de-emphasize data inconsistent with the information with which it is primarily concerned."[109] Furthermore, the communication center may distort the information that it believes will reflect unfavorably upon it.[110] Each responsible decision center up and down the communication channel acts as a sieve or filter.[111]

Finally, in a dynamic environment, changes may occur during the period of communication which are not reflected in the original

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[107] Cf. National Industrial Conference Board, Communication Within the Management Group, Studies in Personnel Policy No. 80 (New York: National Industrial Conference Board, 1947).

[108] Cf. Edward C. Schleh, "Personnel Policy--a Track to Run On," Personnel, XXX (May, 1954), p. 445.

[109] R. M. Cyert and J. G. March, "Organizational Structure and Pricing Behavior in an Oligopolistic Market," The American Economic Review, XLV (March, 1955), p. 134.

[110] See, for example, Earl Planty and William Machaver, "Upward Communication: A Project in Executive Development," Personnel, XXVIII (January, 1952), p. 305.

[111] Cf. Miller and Form, op. cit., p. 163.

communication. This temporal bias can be ". . . represented as a function of the number of relay points [for example, assistant budget director, advertising manager, sales manager, etc.] through which the information must pass . . . ."[112] Either incomplete or fallacious information will impair the factual premises employed in decision-making.

Budgets: Symbolizing profit-maximization. In the typical, many-layered, highly functionalized business organization where the product results from collective efforts, difficulty is encountered in identifying the effectiveness or contribution of any one individual or department.[113] In the first place, decision-making may be accomplished at a level in the management hierarchy several levels above operative performance: In actuality, the management process is an overlay upon technical or operative performance. Thus administrative decisions are remote from physical transformation or distribution. In the second place, especially operative management decisions may be executed considerably below the top of the management hierarchy. This latter characteristic requires that the standards of accomplishment for the organization be translated into terms expressing individual or departmental contribution. The standard, profit, even though a personal

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[112] Cyert and March, op. cit., p. 134. This bias may find its release through the establishment of a regular budget period which corresponds to some fiscal period rather than according to changes in the market place.

[113] See: Maurer, op. cit., pp. 145-46; and Peter F. Drucker, The New Society, op. cit., p. 3.

motive, becomes far removed from the individual[114] and only measures organizational success which must be expressed to the individual or department in symbolic form.

What becomes of significance to the decision-maker is the connection[115] (e.g., a budget) between the measure of collective attainment (profit) and his individual efforts. These connections are the primary locus of the individual's attention since he has been taught that these measures are what one should consider. Moreover these symbols are understandable and real.[116]

Various operating goals are proposed that lend themselves to profit-maximization, that is, they can be translated into such terms,

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[114]Most activities of managers are far removed from their primary needs. For example, the advertising manager makes a decision to expend a given sum of money for advertising, the purpose of which is to increase the number of sales leads. These sales leads should eventually result in a greater profit for the firm. If this is accomplished, he will receive an increase in wages (or, possibly, no reduction in wages). This increase in money wages (assuming other conditions remain the same) will permit him to meet biological or sociological needs more fully.

[115]This involves the symbolizing process which can be described as ". . . setting up some substitute name or designation or sign or formulation for an object, relation, or situation, and reacting to this name or sign or formulation as if to that which it signifies." Dashiel, op. cit., p. 539. This process permits learning by association to stimuli more and more remote from that stimulus which was previously adequate. Cf. Edwin G. Boring, Herbert S. Langfeld, and Harry P. Weld, Foundations of Psychology (New York: John Wiley and Sons, 1948), p. 142.

[116]See, for example, Kenneth C. Wagner, "Those Annoying 'Human Factors'," The Journal of Industrial Engineering, V (March, 1954), p. 3. The ". . . relative submergence of the profit test may reflect a recognized fact that profits may be influenced by many factors beyond the control of the individual. On the other hand, it may mean that, in the scale of values of these managers and especially operating men, profits rate lower than other evidences of business competence." Griffin, op. cit., p. 78.

but they must be translated.[117] One of the most prevalent standards of performance is the budget. Yet the use of budgets does not necessarily result in profit-maximizing behavior. To the extent that budgets are exhaustive, directive, and adhered to, they may lead to profit-maximization. Assuming budgets are ideal standards of performance, profit-maximization will be limited by omissions or errors in relevant considerations[118] and to the extent of deviations of actual performance from the budget.

How an individual responds to the budget depends upon his orientation and intentions. The decision-maker may react to it in terms of its extrinsic value, e.g., for the prestige attached to a larger budget. On the other hand, if the budget is a pressure device, an unfavorable response may be elicited, e.g., in the form of "budget-busting."[119]

The probability of eliciting desired responses through the use of a symbol (the appropriation or budget) depends upon the strength of the association between the symbol and the reward or punishment.[120] Where confusion exists as to the behavioral meaning of the budget--e.g., whether accomplishment is judged high if the total budget is not spent--the reinforcement between the symbol and the reward is depleted. Finally, the response resulting from the repeated application of a

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[117]The inadequacies of standards arising from the use of static measures as applied to dynamic conditions should also be noted. Cf. Boulding, A Reconstruction of Economics, op. cit., p. 8.

[118]"The things included in the measurement become relevant; the things omitted are out of sight and out of mind. . . ." Drucker, The Practice of Management, op. cit., p. 64.

[119]Cf. Chris Argyris, "Human Problems with Budgets," Harvard Business Review, XXXI (January-February, 1953), p. 97.

[120]See Whyte, op. cit., p. 96.

particular stimulus may involve greater and greater lethargy. Therefore, a "wearing-off" effect may occur in the use of budgets. As the budget is employed again and again as a control instrument, its value for this purpose may fall.[121]

Suboptimization: Departmental avarice. Although a member of management (i.e., the command group), the executive is also a member of a suborganization or work unit.[122] Being primarily responsible for the work unit, the executive has a tendency to evaluate decision problems as dictated by the needs of his own department.[123] Since performance criteria for a department head are expressed in terms of the contribution of the work unit, he may become over-jealous in that regard.[124]

Secondly, in view of the ". . . complexity of the business enterprise the manager has not been able as a rule to see the whole, understand it and define his relationship to it. . . . Unless he can attain a vision of the whole he is forced to try to obtain the optimum for a partial area regardless of the effect on the whole."[125] This attitude

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[121] Cf. Ibid., p. 194.

[122] Cf. Barnard, op. cit., p. 111.

[123] "The tendency of a larger group to divide into smaller ones is called the segmentation tendency. . . . When different parts struggle to dominate each other or retain independence, segmentation tendencies are greater than the coordination or integration tendencies. . . . The theory of formal organization seems to ignore these segmentation and integration forces." Miller and Form, op. cit., p. 162.

[124] Cf. Maurer, op. cit., p. 225.

[125] Peter F. Drucker, "Management Science and the Manager," Management Science, I (January, 1955), p. 120.

may permeate all of his decisions and manifest itself, for example, in the magnitude of the appropriation request.[126]

Suboptimizing may stem, in part, from the strength of membership allegiance within the subunit. A natural cleavage develops between the various subunits as a result of departmentalization.[127] Furthermore, the work units tend to become socially isolated, especially if departments have been established on a functional basis.[128] Since "all groups tend to regard themselves as somewhat separate and superior to all other groups,"[129] the schism between suborganizations perpetuates itself. Thus suboptimizing stems in part from membership allegiance within the subunit.

If each "department" is judged on the basis of different standards, divergent and conflicting value premises will exist among the departments.[130] The differing value premises will result in differing considerations and decisions. The "cost-conscious" production executive's emphasis upon product simplification versus the "sales-minded" advertising manager's desire for product diversification is a case in point.

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[126] Departmental loyalties may result in ". . . incapacitating almost any department head for the task of balancing the financial needs of his department against the financial needs of other departments. . . ." Simon, et al., op. cit., p. 18.

[127] "One of the most difficult conundrums of organization teamwork, then, is how to fix responsibility. . . and yet ensure cross-departmental cooperation at the same time." Edmund P. Learned, "Getting the Organization to Work Effectively as a Team," Planning the Future Strategy of Your Business, Edward C. Bursk and Dan H. Fenn, Jr., eds. (New York: McGraw-Hill Book Co., 1956), p. 72.

[128] ". . . It is usually more difficult to coordinate disparate units than similar ones. . . ." Miller and Form, op. cit., p. 167.

[129] Ibid., p. 161.

[130] Cf. Rothschild, op. cit., p. 456.

In reality, the problem of ". . . maximizing gain is not the result of a single unified action but of dealing successfully with a number of subordinate problems."[131] The course of action chosen is usually a "program" which involves, for example, not only adjusting the advertising appropriation but also determining expenditures for some other input.[132] But, because of previous friction, physical and social segregation, a tendency develops to treat the parts of the problem in isolation--an imperative is created ". . . only for consistency within rather than between areas of business operations."[133]

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[131] Wroe Alderson, Problem Solving and Marketing Science, Charles Coolidge Parlin Memorial Lecture, 1954 (Philadelphia: Alderson and Sessions), p. 15.

[132] Means for treating these multi-dimensional problems are being developed in many disciplines known variously as operations research, activity analysis, and linear programming. For a discussion of activity analysis, see: Tjalling C. Koopmans, "Activity Analysis and Its Application," The American Economic Review, XLIII (May, 1953), pp. 406-14. For a discussion of linear programming, see: A. Charnes, W. W. Cooper, and A. Henderson, An Introduction to Linear Programming (New York: John Wiley & Sons, Inc., 1953). The primary advantage of operations research, other than the mathematical tools which it embodies, is the utilization of conceptual models which incorporate a larger number of variables (and associated parameters) of the total problem field. Alternative technologies themselves can be treated as variables. Given an objective (a value to create), this method provides solutions which indicate maximizing behavior for various departments of the business firm. The major limitation of operations research is that the value premises must still be assigned by the human decision-maker. For further discussions, see: P. M. Morse and G. E. Kimball, Methods of Operations Research (New York: John Wiley & Sons, Inc., 1951) or C. C. Hermann and J. F. Magee, "Operations Research for Management," Harvard Business Review, XXXI (July, 1953), pp. 100-112.

[133] Dubin, op. cit., p. 294.

One technique other than dominance[134] for integrating departmental decisions is the use of committees to increase the members' understanding of the areas of conflict.[135] However, even here, where emphasis is placed upon the preservation of the committee, leveling occurs; if "... thinking and judging are brought in line with the structure and norms of the group ... group agreement is not necessarily indicative of the validity of the decision."[136]

Based upon the concepts of "economic man" and "institutional decisions," the presentation in Chapter II drew from literature examining the variables and rules involved in profit-maximizing behavior. Chapter III was based upon works that concentrated attention upon the purposes and behavior of the professional manager as he operates within a management hierarchy and work unit. The latter presentation treated selected institutional characteristics as well as certain aspects of the decision-maker that impede organizationally rational decision-making, or that encourage personally rational decision-making at the expense of formal goal accomplishment.

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[134] Dominance may prevail in a firm which is strongly oriented toward the finance function. Here the budget request prepared by the controller may actually carry with it more formal authority than that of the shrewd advertising department head. Cf. Richard M. Alt, "The Internal Organization of the Firm and Price Formation: An Illustrative Case," Quarterly Journal of Economics, LXIII (February, 1949), p. 106.

[135] Early, op. cit., p. 48, would argue that administrative differentiation of the organization by function, market-area, etc., actually enhances marginalism. But he states that "... the rationality of complicated business decisions depends upon the inclusion in the decision-making group of officials from several functions of the enterprise."

[136] Eugene Jennings, "Agreement or Compromise? The 'Leveling' Effect in Group Discussion," Personnel, XXXI (July, 1954), p. 68. See also Maurer, op. cit., p. 147.

The individual was considered the unit of decision-making, since only individuals are capable of making decisions. Responding to a situation in terms of his whole being, the psychological field of an individual embodies a number of diverse interests. These interests vary in importance to him according to the immediacy with which they affect him. Some may conflict with each other, in which case he must choose between them, if they cannot be reconciled.

Where financial income does not exhaust the motives of the individual, the decision-maker may perceive a complex of formal purposes for the firm. For the entrepreneur, personal interests may be increased by a growing prosperity for the company, but prosperity may be defined in terms of standards tangential or indirectly related to profits.

The second facet of the problem was examined in Chapter III based on the dichotomy of the individual and the institution. To the individual was imputed volition not completely controlled by the formal aspects of the organization. His private welfare may be increased by improving his position within the company, but the means he employs may not necessarily lead toward formal goal-accomplishment.

Third, the modern industrial environment requires the recognition of group behavior. To enhance group attainment, formal structuring of the group is required. Thus, fractionalization and diffusion of authority for decision-making within the firm create the problems associated with symbolizing profits and suboptimizing. Such problems impede immediate and accurate profit-maximizing adjustments.

Finally, the personality of the decision-maker as it results from the interactions with some larger social environment was examined.

Since the decision-maker is a member of several groups at the same time, his business decisions may be affected by his multiple loyalties and attachments to other groups. Motives irrelevant or inconsistent with the economic institution may play a role.

CHAPTER IV

THE NATURE AND PRACTICES OF THE RUBBER TIRE INDUSTRY

The sources of the empirical data analyzed in this study are respondents for firms in the tire and tube industry.[1] Since the preceding discussion has been presented without reference to a specific industry, the nature and operating characteristics of the tire industry require examination. The decisions of individual advertisers are affected by the diverse characteristics of the members of the industry. These varying characteristics explain the choices of the individual units in terms of the relative advantage that each strives to perpetuate or overcome. Therefore, if the environment of decision-makers imposes limits upon alternative choices and influences their orientations, a definitive presentation of this environment will lend insight for later analyses.

General Nature and Environment

Introduction

The rubber products industry. The tire industry is only a segment, albeit an important segment, of a larger classification--the rubber industry. The latter is divided into three general product classes: (1) raw rubber, either synthetic or natural; (2) reclaimed rubber; and (3) fabricated rubber products. Of these three, the rubber products

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[1] Tube manufacturers not producing tires are excluded from the universe of this study.

industry is the largest, approximating 90 per cent of the total value of rubber shipments.[2] This class is most relevant to this thesis since it encompasses tires and tubes.

Many tire manufacturers fabricate other rubber products as well as nonrubber goods. Most rubber products are related in demand (e.g., sold through the same dealers), and all are related in supply (competing for the basic factor of production). In addition, tire and tube manufacturers dominate the rubber fabricating industry. During the years 1938-1941, sales of tires and tire sundries contributed an average of 58 per cent of the dollar value of manufactured rubber goods, and in 1954 these sales accounted for almost 44 per cent of the total of all manufactured rubber products (see Table 1).[3] Therefore, to a large extent, discussion of the rubber products industry is a discussion of the characteristics of rubber-tire manufacturing and marketing.[4]

Stemming largely from the dominance of the tire producers in this field, the rubber products industry has a high degree of concentration. In terms of the output of the industry in 1946 the rubber products industry was the third most highly concentrated manufacturing industry

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[2]For the rubber industry as a whole in 1947, the value of synthetic rubber shipments constituted approximately eight per cent of the total value of rubber shipments, and reclaimed rubber less than one per cent. Fabricated rubber products constituted the remainder. Cf. John G. Glover, William B. Cornell, and G. Rowland Collins, The Development of American Industries (New York: Prentice-Hall, Inc., 1951), p. 654.

[3]Cf. Standard and Poor's, Industry Surveys, "Rubber" (New York: Standard and Poor's, Inc., April 5, 1956), p. R121.

[4]In certain instances the secondary sources employed in this chapter have not classified the data by subdivisions of the rubber products industry. These more general data are used in such cases.

in the United States, ranking just behind automobiles and tobacco.[5] Four firms account for 80 per cent of the output of tires and tubes, and produce 81.8 per cent of rubber boots and shoes and 19.2 per cent of the rubber goods not elsewhere classified.[6]

TABLE 1

RUBBER INDUSTRY SHIPMENTS BY PRODUCTS, 1954
(Millions of Dollars)

Product	1947	1954
Synthetics	253	392
Tires and Tubes	1463	1622
Reclaimed	36	45
Footwear	159	163
Rubber Industry, N.E.C.	986	1744
	2897	4020

Source: Standard and Poor's, Industry Surveys, "Rubber" (New York: Standard and Poor's Inc., April, 1956), p. R118.

In 1947, five firms in the rubber products industry were included in a list of the 200 largest manufacturing corporations with total assets greater than 1.2 billion dollars. These five firms accounted for 66 per cent of the assets held by all corporations in the industry.[7]

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[5] Cf. John M. Blair, Harrison F. Houghton, and Matthew Rose, Economic Concentration and World War II, A Report to the Senate's Small Business Committee (Washington, D.C.: U.S. Government Printing Office, 1946), p. 172.

[6] Ibid.

[7] National Association of Manufacturers, Profits and Prices, Economic Policy Division Series, No. 31 (October, 1950), p. 11.

Furthermore, in 1950, three rubber fabricating firms were included in the list of the 100 largest nonfinancial corporations.[8]

The product defined. For purposes of this study,[9] tires refer to the rubber casings, natural or synthetic, designed for use as tread on motor vehicle wheels that operate on or off the road.[10] Tires may be retreads, recaps, or new. The industry as herein defined may include firms involved in the manufacture of products other than new tires, but such firms must produce some new tires.

The product of the tire industry is by no means completely homogeneous. "Important differences can be found among the products of a single manufacturer and among the products of different manufacturers . . . . Each of the differences is significant to the competitive policies of all units in the manufacture and sale of tires."[11]

Tires may be classified according to type of vehicle use (e.g., passenger car). There are five major classes.[12] Each of these basic

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[8]The National City Bank of New York, Monthly Letter, July, 1951, p. 1.

[9]Although all tire manufacturers produce other lines of products, insofar as possible, attention will be directed toward the problems involved in the manufacture and distribution of tires.

[10]Cf. "In the Matter of a Quantity Limit Rule as to Replacement Tires and Tubes Made of Natural or Synthetic Rubber for Use in Motor Vehicles as a Class of Commodity," Findings, Order and Statement of Basis and Purpose, United States of America Before Federal Trade Commission, Federal Trade Commission (Washington, D.C.: U.S. Government Printing Office, December 13, 1951), p. 2. Henceforth this will be referred to as File No. 203-1.

[11]Richard G. Gettell, Pluralistic Competition, With An Illustrative Case Study of the Rubber Tire Industry, an unpublished dissertation, University of California, 1940, p. 223.

[12]As compared to the common passenger car tire, ". . . a large earth mover tire may stand over 7 feet high, weigh some 2,000 pounds, and cost as much as a small automobile." Warren W. Leigh, "Automotive Tires," Marketing Channels, Richard M. Clewett, ed. (Homewood, Illinois: Richard D. Irwin, Inc., 1948), p. 116.

classifications may be further subdivided. Passenger car tires, for example, may be classed as (1) passenger car, (2) station wagon, (3) house trailer, (4) motorcycle, (5) sidecars, (6) motor scooters, and (7) passenger-car-baggage-trailers.

Passenger car tire casings may be either 4-, 6-, 10-ply balloon or 4-ply high pressure casings. The 6-ply balloon tire casings may be further classified by the diameter of the casing or by diameter of the wheel, of which there are 36 different sizes, most of which are offered with either a black or white side-wall. The classification becomes more complex when the different degrees of quality are included, such as: premium line, both low and high pressure, 100 per cent (tires which are used as original equipment) low and high pressure, 80 per cent, and 70 per cent quality.[13]

Additional complexity is added when private and manufacturer brand names are introduced. U.S. Rubber, for example, has three major brands. Finally, with respect to performance, there is no absolute measure: ". . . a standard tire is the judgment of some man--technician or businessman--as to the best compromise between the conflicting values of bulk, endurance, dependability, and price."[14]

Intentionally or not, advertising effort has played a role in promoting real and psuedo differences in the product. Certainly product variations have served to complicate the price structure and to confuse the consumer.

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[13] Cf. Quarterly Detailed Tire Report (New York: Accounting and Statistical Department, The Rubber Manufacturers Association, Inc., 1954), pp. 1 and A-1 to A-8.

[14] Albert Abrahamson, "The Automobile Tire--Forms of Marketing in Combat," Price and Price Policies, Walton Hamilton and Associates, eds. (New York: McGraw-Hill Book Co., 1938), p. 83.

Composition of the Industry

The major producers. More than 500 firms have been engaged in the production of tires.[15] In 1951 the tire industry was composed of not more than 21 companies.[16] These tire manufacturers can be divided into three major groups: (1) the Big Four--Firestone, Goodyear, Goodrich, and U.S. Rubber (1955 sales volume ranged from $755 to $1372 million), (2) the General Tire and Rubber Company (1955 sales volume, approximately $300 million), and (3) the "independents" (1955 sales volume ranged from $20 to $70 million). The eight largest companies produce more than 90 per cent of the output of tires and tubes,[17] and the "Big Four" own approximately 88.3 per cent of the net capital assets.[18]

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[15] Cf. Leigh, "Automotive Tires," op. cit., p. 118. It is interesting to note that from the standpoint of production capacity in 1933, the facilities of all the eight leading firms are in existence today. However, of the four smallest of these eight, only General Tire is neither partially nor completely merged with the larger four. Fisk, for example, which was the fifth largest, was purchased by U.S. Rubber. In 1933 these firms owned 82.3 per cent of the capacity of the industry. Cf. W. H. Gross, Evidence Study No. 36 of the Rubber Tire Manufacturing Industry, Washington N.R.A. Division of Review (Washington, D.C.: U.S. Government Printing Office, October, 1935), p. 5. Now the largest eight firms own 94.8 per cent of the net capital (not necessarily the same as capacity) of the industry. Cf. Harold Koontz and Richard W. Gable, Public Control of Economic Enterprise (New York: McGraw-Hill Book Co., 1956), p. 306. If the capacities, including the facilities gained through mergers since 1933, are ranked, the ordering of the top four firms would appear as the ranking of current sales with the exception that the positions of U.S. Rubber and Firestone would be reversed.

[16] "The [Federal Trade] Commission is warranted in believing that since 1947 some of the smaller of the twenty-one manufacturers, perhaps as many as four, have ceased to function or to function independently, and that at least some of the latter have become affiliated with one or more of the larger manufacturers." File No. 203-1, op. cit., p. 6.

[17] Edward L. Allen, Economics of American Manufacturing (New York: Henry Holt and Co., Inc., 1952), p. 191.

[18] Koontz and Gable, op. cit., p. 306.

However, the four largest firms are not homogeneous; each has different merchandising and product policies.

The Goodyear Tire and Rubber Company, the largest producer of rubber products in the world, derives approximately 73 per cent[19] of its sales revenue from tires and tubes. To secure maximum economies from mass-production, this company has concentrated on comparatively few products. It distributes largely through 30,000 independent dealers;[20] however, the company owns about 425 retail stores.[21] Goodyear 1955 sales were approximately 1.37 billion dollars, of which a substantial proportion of tire sales were made through Sears, Roebuck and Co. and directly to The Chrysler Corporation. Of this sales figure, "... twenty-seven per cent of its business was done through its company stores and about 75 per cent of this share was done with consumers, and 25 per cent was done with associate dealers."[22]

The second largest producer of rubber products is Firestone Tire and Rubber Company, whose 1955 sales were approximately 1.11 billion

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[19] Allen, op. cit., p. 161. It has been reported that this percentage fell to 60 per cent in 1955. See Merrill Lynch Stock Report on Goodyear Tire and Rubber Company, Merrill Lynch, Pierce, Fenner and Beane (New York: November 21, 1956), p. 1.

[20] See Moody's Industrials (New York: Moody's Investors Service, 1950), p. 1471.

[21] Problems of Independent Tire Dealers, Staff Report to the Select Committee on Small Business, United States Senate, 83rd Congress, 1st Session, Committee Print, July 27, 1953, p. 12. Henceforth cited as Problems of Independent Tire Dealers.

[22] "... But Facts Show That the Tire Bill Is a 'Naked Request' for Nothing but Fair Play." National Independent, XIV (November, 1954), p. 3. Henceforth cited as But Facts Show.

dollars, of which 67 per cent was derived from tire and tube sales.[23] The estimate has been made that 10 per cent[24] of its sales has been from nonrubber products.[25] Firestone supplies about one-half of Ford's original equipment requirements and a considerably smaller share of General Motors' needs.

Although The United States Rubber Company is the third largest manufacturer of rubber products, only 55 per cent of its total sales (approximately $926 million in 1955) is dependent upon tire sales.[26] This company receives most of its original equipment business from General Motors, especially the Chevrolet Division.[27] Strangely enough, U.S. Rubber has a higher replacement-market sales ratio than Firestone, and yet the company owns no retail stores. However, U. S. Rubber does a large business with Montgomery Ward and Co. and chain gasoline stations.

The fourth largest of the rubber products manufacturers, the B. F. Goodrich Company, is the most diversified. The sales of Goodrich approximated $755 million in 1955, although the company owned only 485 retail

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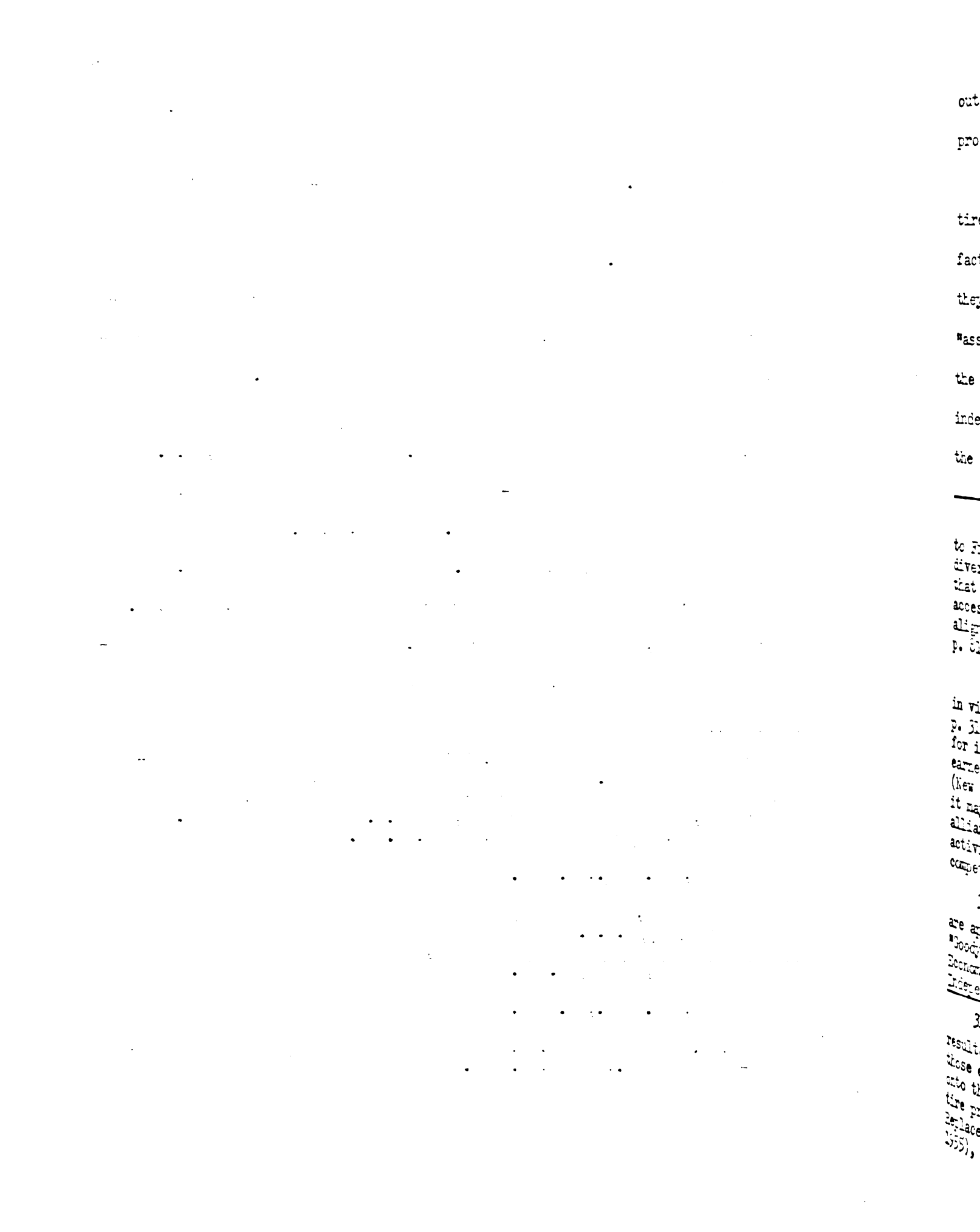
[23]As in the case of Goodyear, this percentage figure may be somewhat smaller for 1955. Forbes estimates the sales volume derived from nontire products of the Big Four as: Goodyear 40 per cent, Firestone 40 per cent, Goodrich well over half, and U.S. Rubber 50 per cent. "Goodyear Gain," Forbes (November, 1956), p. 14.

[24]Allen, op. cit., p. 192.

[25]"Firestone, for example, is the largest producer of vehicle rims in the world [and] . . . also containers made from stainless steel," The Marketing of Rubber Tires and Tubes, The Firestone Tire and Rubber Company (January, 1954), p. 12.

[26]Allen, op. cit., p. 192.

[27]E. B. Alderfer and H. E. Michl, Economics of Industry (New York: McGraw-Hill Book Co., 1950), p. 314.



outlets.[28] This company produces approximately 30,000 different rubber products, depending upon tire sales for only 45 per cent of its business.[29]

The Big Four concentrate their major efforts on the sale of branded tires and tubes to the original equipment market (e.g., automobile manufacturers). However, they do not neglect the replacement market, which they contact through 1,600 retail company stores[30] as well as through "associated retail stores" and independent retail tire dealers. It is the replacement market which provides the livelihood for the smaller independents. When the original equipment market softens, attention of the Big Four is transferred to the replacement market.[31] This creates

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[28] Problems of Independent Tire Dealers, op. cit., p. 6. In contrast to Firestone's policy of private brands, Goodrich follows a policy of diversification with nationally known brands. It is surprising to note that Goodrich has the lowest percentage of dealers handling automotive accessories as well as vulcanizing, recapping, wheel-balancing, wheel-alignment, and brake service. Cf. Moody's Industrials (1954), op. cit., p. 818.

[29] "This highly diversified line of products may prove to be an asset in view of the growing competition in the tire market." Alderfer, op. cit., p. 315. Goodrich has been the best money-maker in its industry. In 1953, for instance, it earned 5.1 per cent on sales, as compared to 4.2 per cent earned by the industry as a whole. Herrymon Maurer, Great Enterprise (New York: The MacMillan Co., 1955), p. 123. On the other hand, ". . . it may be suggested that heterogeneity breeds conflict and is a bar to alliance among business units, and . . . /those/ which concentrate their activities in the fewest areas are likely to be the most active in their competitive adjustment in these areas." Gettell, op. cit., p. 101.

[30] "The tire sales of stores owned and operated by tire manufacturers are approximately 10 per cent of the total replacement tire business." "Goodyear Says Tire Bill a Naked Request that Congress Legislate for the Economic Benefit of One Man by Outlawing His Competitor," National Independent, XIV (November, 1954), p. 2.

[31] "When, in 1954, there was a temporary decline in the economy which resulted in an excess supply of tires in the original equipment industry, those extra tires not taken by automobile manufacturers were unloaded onto the replacement market. . . . /This resulted in/ a long and vicious tire price war among manufacturers." "Seiberling 1954 Profit Off 79%, Replacement Tire Price War Blamed," Wall Street Journal (February 21, 1955), p. 5.

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severe hardship for the small firms, since they are faced by a greater than proportionate reduction in sales.[32]

General Tire and Rubber, the fifth largest unit in the industry, occupies a special position as an independent tire manufacturer. General has grown rapidly until its assets and sales are more than three times the size of the next smallest firm. Nevertheless, its total sales equal only 25 per cent of Goodrich sales. Dealers handling General tires appear to be highly specialized in terms of lines handled but offer considerable service, e.g., recapping and vulcanizing.

The "independents." The proportion of industry sales for each of the small firms is relatively insignificant. From the standpoint of production facilities, those of Armstrong were, in 1955, only 3.0 per cent of those of Goodyear; and were only 14.1 per cent of those of General.[33] Yet for the past few years the percentage increase in sales of the independents has been greater than the increase for the Big Four.

Although many of the independents have undertaken a greater diversification of products, diversification has not occurred evenly among them. Mohawk has remained almost exclusively a tire manufacturer while others, such as Lee, Norwalk, and Dayton, receive much of their revenue from the sale of other products, which generally carry a higher profit margin.

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[32] Ibid. In the first quarter of 1948, with a decline in sales for the industry, the Big Four experienced only a slight reduction in sales volume; for example, Firestone's volume dropped only 3.2 per cent while Dayton Rubber sales fell by 28 per cent and Lee Rubber and Tire sales dropped by 14 per cent. In the 1954 fall in demand, sales of Seiberling declined by 11 per cent while its earnings fell by 79 per cent.

[33] Moody's Industrials (1956), op. cit., p. 167.

Most of these "independents" manufacture standard tires, but they concentrate their efforts largely on premium tires. The latter have some exclusive sales feature, such as nylon cord or heat vents. In an effort to attract loyal dealers, most small manufacturers offer their tire dealers advantages which larger manufacturers do not offer, for example: (1) an exclusive sales franchise and (2) the right to make adjustments for faulty tires without immediate factory inspection.[34]

The average sale made by the independents is relatively small. The seven smallest manufacturers concentrate their sales with customers with an annual volume of $100,000 to $600,000. The 14 smallest firms have only 12 per cent of the customers whose annual purchases run between $5 and $25 million, while the seven largest firms have 97.3 per cent of the accounts of the $25 to $50 million annual-purchases class.[35] This affinity between large-scale buyers and sellers is largely explained by the fact that the automobile companies making the original equipment purchases favor the large companies in order to gain ". . . assured supplies, and farflung tire service organizations."[36]

In an absolute sense, the large firms are more able financially to devote large allocations of funds to advertising effort than the independents. Moreover, where such firms have widespread geographical

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[34]An exception to this generalization concerning the smaller firms is Seiberling, which attempts to follow most closely the merchandising policies of the "majors." Although Seiberling's 1955 sales were but $46 million, it distributed its products through 1700 independent dealers and distributors, and 3,000 associated distributors in the United States. Further, the company is the major supplier of Atlas tires for the Standard Oil Company of Ohio. Ibid., p. 818.

[35]See File No. 203-1, op. cit., p. 6.

[36]Leigh, "Automotive Tires," op. cit., p. 125.

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distribution, the use of national media in the dissemination of their advertising message may be feasible where such might not be the case for the smaller firms. Nevertheless, the small firms may be able to concentrate their efforts upon particular markets and thereby gain significantly through a greater repetition of the message and a reduction in marginal or wasted coverage. On the other hand, the small firms may not be financially able to afford the services of the better advertising talent, either that of an agency or of their own personnel. In this case, increased quantities of advertising may be required to offset the lower quality.

The characteristics and efforts of the small companies do significantly affect the industry structure and success of the various competitive techniques. However, in most cases the small firms have been in a precarious financial status.[37] Throughout the history of the industry, reorganizations and sales have occurred, frequently at distress prices, to new entrepreneurs. "In such cases, the depreciation of plant and obsolescence of equipment were more than offset by the reduction in the capital charge which attended the writing down of the initial investment."[38] As a result, the previous marginal firms, as reorganized companies, were able to become low-cost producers. "Thus, an active competition persisted from plants which had failed; and excess productive capacity was kept active; and the investments of bankrupts were used to subsidize a destructive campaign for markets."[39]

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[37] Cf. Abrahamson, op. cit., p. 91.

[38] Ibid.

[39] Ibid.

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External Influences

Government. Because of the war-time importance of the tire industry, the government keeps it under close surveillance. Of most importance in this respect is its productive capacity. In addition, the governmental attitude concerning the presence of monopoly in the industry is important. The view of one group of government officials was expressed as: "Your committee [Senate Select Committee on Small Business, 1952] is uneasy about the general balance of power within the rubber industry, and consequently it plans to keep under closest observation the existence or development of any condition which even gives the appearance of fostering monopoly in any and all segments of the industry."[40] This attitude may be a major factor in the explanation of the existence of marginal firms in the industry. The Big Four, fearing antitrust action, may permit certain independents to exist even though some likelihood persists that the latter may precipitate a vicious price war.

At several times throughout the history of the industry, antitrust action has been taken against various individuals, firms, and the trade association (The Rubber Manufacturers Association). In 1948, the association, eight corporations and two individuals entered pleas of nolo contendere to the 1947 charge claiming a conspiracy in restraint of trade and interstate commerce in the sale of rubber tires and tubes. "It charged that the defendants agreed on prices, discounts . . . allocations of sales to state, county, and municipal government agencies,

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[40]Distribution of Motor Vehicle Tires, Hearing before a Subcommittee of the Committee on Judiciary United States Senate, Eighty-third Congress Second Session, January 21, 1952 (Washington, D.C.: United States Government Printing Office, 1954), p. 8. Many other reports expressing similar attitudes have been made; for example, the Report of the Federal Trade Commission on the Concentration of Productive Facilities, Federal Trade Commission (Washington, D.C.: U.S. Government Printing Office, 1947).

limitations upon production of specified types of tires and other related practices for the purpose of eliminating price competition."[41]

The tire industry may face additional government investigations of its pricing and marketing practices if the recommendations of a staff report to the Senate Small Business Committee are followed.[42] This report requests that the Justice Department determine ". . . how fully the tire-makers have stopped the practices for which the 1948 action cited them. It also suggested the department determine if the practice of including a spare tire on new cars and trucks is a 'tie-in sale' in restraint of trade."[43]

The same study urged further that the Federal Trade Commission speed its enforcement of the 'quantity limit rule."[44] In 1952, the Federal Trade Commission promulgated a ruling[45] implementing the earlier cost-

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[41] Problems of Independent Tire Dealers, op. cit., p. 18.

[42] Cf. "Tire Industry Probe by Two Federal Agencies Urged in Senate Report," The Wall Street Journal (July 27, 1953), p. 16.

[43] Ibid.

[44] In 1936, an amendment to the Clayton Antitrust Act known as the Robinson-Patman Act was passed. It was designed to strengthen existing antitrust laws, prevent unfair price discrimination and preserve competition. The relevant provision here is Section 2 (a) of the Robinson-Patman Act. This statute authorizes the Federal Trade Commission to ". . . fix and establish quantity limits as to particular commodities . . . where it finds that available purchasers in greater quantities are so few as to render differentials on account thereof unjustly discriminatory or promotive of monopoly in any line of commerce." Problems of Independent Tire Dealers, op. cit., p. 13.

[45] See J. S. McGee, "The Decline and Fall of Quantity Discounts: The Quantity Limit Rule in Rubber Tires and Tubes," Journal of Business, XXVII (University of Chicago Press, July, 1954), pp. 225-34.

justification proviso to the effect ". . . that a carload quantity of 20,000 pounds ordered at one time, for delivery at one time, was the maximum quantity which could be used to justify price differentials on replacement tires and tubes fabricated of natural or synthetic rubber for use on motor vehicles."[46] This ruling will have far-reaching effects upon sales made to mail-order or private-brand distributors.

The Federal Trade Commission also has within its authority the control of "ethics" in advertising continuity. The commission may base such action upon two specific orders, the 1936 Tire Industry Trade Practice Rules and the Commission's 1941 Tire Advertising Order, as well as the Wheeler-Lea Act. More than a dozen complaints, dating back to 1950, involving alleged deceptive practices and misleading advertising have been referred to the Commission. However, the Executive Secretary of the Federal Trade Commission, in 1954, stated that ". . . the Federal Trade Commission had made a searching probe of tire advertising in 1953, and had found, as of June, 1954, that no major tire maker had broken the Commission's 1941 directive."[47]

The considerable government intervention appears to have had little direct effect upon advertising appropriation decisions. Yet the corporate income tax structure has affected the amount of dollars allocated to advertising, and the government does exert indirect influence. There may be, for example, a desire for an intense cultivation of the relatively small purchaser through advertising because of the "quantity limit rule."

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[46] Problems of Independent Tire Dealers, op. cit., p. 13.

[47] Ibid., p. 17. See also, "Don't Expect Too Much from F.T.C. on Tire Ads," National Independent, XIV (October 1, 1954), p. 1.

Labor and unions. The exact influence of labor upon advertising decisions cannot be determined. Nonetheless, the message of an advertisement may be directed toward the advertiser's labor force. Secondly, wages are a very short-term liability that must be met from the firm's working capital and, as such, they draw from the same general source of funds from which advertising expenses are met. And finally, "indirectly, probably not intentionally, and perhaps unwillingly, the International Union influences the decision of employers to expand or contract production through the International Union's influence in establishing relative wage costs."[48] These production adjustments will create certain changes in marketing effort. Employment in the industry appears to be very stable. Labor turnover for 1947 in tire and tube manufacturing was 2.1 per cent with an average of 1,648 workers per establishment.[49] According to the Census of Manufacturing (1947) wages constituted 20.1 per cent[50] of the value of the product in the tire industry.[51] During the five years following 1948, weekly earnings increased approximately

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[48] Edgar A. Parsons, Some Economic Aspects of Collective Bargaining in the Rubber Industry, Ph. D. dissertation, New York State School of Labor and Industrial Relations, Cornell University, Ithaca, New York, 1950, p. 18.

[49] Cf. Alderfer, op. cit., p. 11. Irwin Sobel, "Collective Bargaining and Decentralization in the Rubber Tire Industry," The Journal of Political Economy, LXII (February, 1954), p. 17.

[50] Ibid., p. 12.

[51] Cf. Alderfer, op. cit., p. 312. Goodyear, for example, showed that 24.3 per cent of its net sales were paid out in employees' pay and benefits. The Goodyear Tire and Rubber Company 53rd Annual Report to Stockholders, Goodyear Tire and Rubber Company, Akron, Ohio (February 18, 1952), p. 16.

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60 per cent and hourly earnings 45 per cent.[52] Assuming that the firms set prices in the elastic range of their demand schedules, either the total of the more discretionary expenses or total profits must be reduced to meet higher wages. On the other hand, advertising expenditures may be increased in order to decrease the elasticity of demand for the product. Therefore, wages and advertising have reciprocal effects.

Available measures indicate a fairly large variation in labor productivity between geographic areas and between firms. In 1948, productivity varied from a low of 14½ tires per hour in one plant to a high of 19 tires per hour in another.[53] The differences may be explainable partially in terms of the degree of mechanization and may be offset by savings in other costs. Unless offset, however, these differences in labor productivity affect the ability of the manufacturer to compete in the market, particularly on a price basis.

The major labor organization in the rubber products industry is the United Rubber Workers of America (CIO), which was established in 1935. The absence of nonunion tire plants[54] within the industry suggests the bargaining position of the union. This union has claimed credit for raising the wage rate and standardizing the wage structure[55] and has been blamed for the decrease in labor productivity, particularly in the Akron area.[56]

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[52] Bureau of Labor Statistics, Department of Labor, Monthly Labor Review (July, 1954), p. 14.

[53] Cf. The Newark Advocate, Newark, Ohio, July 23, 1948, p. 16.

[54] Cf. Parsons, op. cit., p. 403.

[55] Cf. Alderfer, op. cit., p. 312.

[56] Cf. Irwin Sobel, op. cit., p. 17.

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Policy

Until World War II, the union bargained on a local plant or company basis, although the "national" held veto power over the local agreements. But during the war it turned to company-wide and even industry-wide bargaining.[57] Although political pressures within the union affect the accomplishments made by that organization,[58] evidence indicates that the URWA has been an extremely militant union. "Even today, quickie walkouts are a regular feature of labor relations; one wildcat a week is not considered abnormal."[59] In 1954, the industry had several major strikes. Goodyear's plants were shut down for a 52-day period, including two smaller localized strikes.[60]

The union apparently has had some effect upon the distribution and success of various firms in the industry. A group of management engineers " . . . found that the main contributing causes to a high production cost were the inflated rates of pay, and loss of incentive work with its corresponding slowdowns."[61] Neither Seiberling nor Norwalk, two other firms facing financial difficulties during the 1940's, were granted relief, since the " . . . International Union wage policy makes no provision for continuation of employment by lowering wage demands."[62]

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[57] Ibid., p. 180.

[58] Sobel, op. cit., p. 25.

[59] "Inelastic Rubber Workers," Fortune, XLIV (July, 1951), p. 46. See also "Rubber Workers Reject Proposal to Shift to Larger Work Day," Business Week (October 13, 1956), p. 60.

[60] Cf. "GAW," Business Week (September 4, 1954), p. 46.

[61] Furber Marshall, President, letter to the stockholders of the Pharis Tire and Rubber Company, Annual Stockholders Report, August 25, 1948, p. 3.

[62] Parsons, op. cit., pp. 243-44. Norwalk was forced into bankruptcy proceedings in 1948.

Entrepreneurial and Manufacturing Characteristics

Ownership and Management

Ownership. For the rubber products industry the corporate form of ownership is associated with less than one-half (approximately 43 per cent) of the number of manufacturing establishments.[63] However, with this exception, the predominant form of ownership from the standpoint of production and market control is the corporation. Profits of unincorporated enterprises, for example, accounted for only 3 per cent of the total profits in the industry for 1946.[64]

Ownership equities are highly diversified and scattered, especially for Goodrich and Goodyear.[65] Furthermore, investments of the holders of voting rights are relatively small as compared to creditors' equities. In 1954 the net worth of Cooper, for example, constituted only 43 per cent of the total assets, while common stock represented only 31 per cent of its capitalization (funded debt plus capital stock).[66] For U.S. Rubber in 1954 the net worth was 51 per cent of the total assets, but only 12 per cent of the capitalization existed in the form of common stock.[67] The proportion of the capitalization represented by voting

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[63]The distribution by type of ownership was as follows (in thousands): Partnership, 0.3; Individually Owned, 0.5; Corporation, 0.6; All Firms, 1.4. Council on Economic Advisers, The Economic Situation at Mid-year, The President's Economic Report (July 26, 1951), p. 17.

[64]Parsons, op. cit., p. 21.

[65]Cf. Harry L. Purdy, Martin L. Lindahl, and William A. Carter, Corporate Concentration and Public Policy (New York: Prentice-Hall, Inc., 1949), p. 94.

[66]The 1954 data was compiled from Moody's Industrials (1956), op. cit., p. 903.

[67]Ibid., p. 1508.

common stock for most of the other companies was likewise small:[68] 19 per cent for Goodyear,[69] 29 per cent for Firestone,[70] and approximately 2 per cent for Seiberling.[71]

A relatively small share of common stock ownership resides in the management group of the four major firms in the industry. Table 2 shows that in no case did their holdings of common stock constitute 20 per cent or more of the total value of the issue.

TABLE 2

OWNERSHIP OF OFFICERS AND DIRECTORS IN COMMON STOCK OF THE FOUR LARGEST FIRMS

Company	Per Cent
Firestone	17.40
Goodrich	1.96
Goodyear	1.10
U.S. Rubber	2.03

Source: Investigation of Concentration of Economic Power, The Distribution of Ownership in the 200 Largest Non-Financial Corporations, Monograph No. 29, Temporary National Economic Committee, Senate Committee Print (Washington, D.C.: Government Printing Office, 1940), p. 802.

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[68] There is, however, a notable exception to this general situation: The stockholders' equities of Lee Rubber, which is relatively free of long-term debt, represent approximately 87 per cent of the total capitalization.

[69] Moody's Industrials (1956), op. cit., p. 2702.

[70] Ibid., p. 135.

[71] Ibid., p. 175. Forbes reports: "U.S. Rubber has one of the highest debt-to-capitalization ratios in the rubber industry--40%. Its $173.4 million in funded debt works out to 18.7¢ for each dollar of sales, vs. 17.9¢ for Goodyear, 9.7¢ for Firestone, and 6.4¢ for Goodrich." "Rubber," Forbes (January 1, 1957), p. 114.

Although executive compensation is a significant cost item (for the rubber products industry, such salaries constitute approximately 40 per cent of net income),[72] executives are paid in the main on a straight salary basis. Table 3, which follows, shows Firestone to be the only major firm using a bonus system for the top level executives.[73]

TABLE 3

COMPENSATION OF THE MAJOR EXECUTIVES OF THE FOUR LARGEST COMPANIES, 1953

Company and Executives	Type of Compensation		
	Salary	Bonus	Pension
U.S. Rubber Company			
H. E. Humphreys, Jr., Chm. and Pres.	$299,101	-----	-------
W. McGovern, V.P.	208,720	-----	-------
Firestone Tire & Rubber Company*			
S. Firestone, Jr., Chm.	$142,000	$42,600	$25,012
R. Jackson, Pres.	115,500	34,650	26,961
J. Shea, V.P.	92,000	27,600	16,317
Goodyear Tire & Rubber Company			
E. J. Thomas, Pres.	$188,629	-----	-------
P. W. Litchfield, Chm.	141,093	-----	$ 2,174
P. E. H. Leroy, V.P.	131,380	-----	-------
The B. F. Goodrich Company			
L. Collyer, Chm. and Pres.	$235,000	-----	-------
W. S. Richardson, Ex. V.P.**	140,000	-----	-------

*Year ended October 31.
**Richardson replaced Collyer as President in 1954.
Source: "What Happened to Executive Salaries in 1953?" Business Week (May 22, 1954), p. 64.

[72] "Effects of Taxes Upon Corporate Policy," Conference Board Reports (New York: National Industrial Conference Board, Inc., 1943), p. 21.

[73] Moody's Industrials (1950), op. cit., p. 1823, however, reports that U. S. Rubber has had a management bonus plan since 1930.

Management and internal organization. The results of Healey's study[74] of the main plants of Ohio rubber fabricators indicated that maximizing returns on investment was not the major objective of their firms according to the chief executives who responded to the study: The service objective received the largest number of responses as the principal objective. According to Healey, the executives selected the following goals, listed in order of importance by number of responses: service to customers (10), reasonable return on investment (9), provide employment (4), reasonable return on sales (3), maximize return on investment (3), and maximize returns on sales (1).[75]

It is significant to know not only the objective of the organization but also the means of communicating the objective. With respect to the latter, Table 4 presents the means employed by the chief executive in communicating the objective of the firm to subordinates within the main plants of Ohio rubber fabricators. If written communications and those which are repetitive and authoritative can be assumed to be the most effective, the respondents are employing less than the most effective means for gaining understanding and acceptance of the group's goal.[76]

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[74]James H. Healey, Executive Coordination and Control, Monograph No. 78 (Columbus, Ohio: Bureau of Business Research, The Ohio State University, 1956).

[75]Healey, op. cit., p. 338.

[76]With respect to other aspects of written, authoritative communication, Goodyear has no organization manual. Cf. Herrymon Maurer, Great Enterprise (New York: The MacMillan Co., 1955), p. 257. Healey, op. cit., p. 127, found that 61 per cent of the Ohio rubber fabricators did not use a policy manual.

TABLE 4

MEDIA EMPLOYED BY CHIEF EXECUTIVES IN COMMUNICATING THE COMPANY'S OBJECTIVE

Media Used in Initial Orientation to Company's Objectives		Media Used in Keeping Subordinates Informed of the Company's Objective	
Media (In Order of Importance)	Number of Chief Executives	Media (In Order of Importance)	Number of Chief Executives
Oral Communication	12	Oral Communication	9
Assumed Knowledge	5	Conference	6
Memorandum	3	Memorandum	3
Conference	1	Orally and Conference	2
Employee Handbook	0	Periodicals	1
No Response	1	Other	2
		No Response	1

Source: Adapted from James H. Healey, Executive Coordination and Control, Monograph No. 78 (Columbus, Ohio: Bureau of Business Research, The Ohio State University, 1956), pp. 342 and 346.

Other features of the management organization appear to interfere with maximum integration of efforts and operating decisions. Goodrich has a dual-authority system at the top level of the management hierarchy (a chief executive and a chief operations officer).[77] Furthermore, the firms selling to the original-equipment market establish, in general, a schism within the sales organization--a special original-equipment sales department separated from the department selling to the replacement market.[78] Another feature concerns upward communication: Healey's study found that approximately 17 per cent of the subordinates of chief

[77] Cf. Maurer, op. cit., p. 257.

[78] The Marketing of Rubber Tires and Tubes, op. cit., p. 2.

executives do not participate in their area of specialization, while approximately 72 per cent of the executives responded that their subordinates do not participate in all areas.[79]

These limitations notwithstanding, Forbes ranked the management abilities of the five largest firms relatively high.[80] With an ideal score of 100, the managements of these firms were rated as shown in Table 5.

TABLE 5

RATINGS OF MANAGEMENT ABILITIES OF THE MAJOR TIRE PRODUCERS, BY FIRMS

Firm	Assets (In Millions)	Rating (Ideal Score: 100)
Goodyear	$819.7*	95
Firestone	635.4**	95
U.S. Rubber	581.6***	80
Goodrich	484.2*	90
General Tire	188.6****	80

*6/30/56 **10/31/55 ***9/30/56 ****2/29/56

Source: "Rubber," Forbes (January 1, 1956), p. 111.

Profits. Although earnings have fluctuated rather widely, the industry generally has been profitable since 1937.[81] Profits on invested capital for all rubber products firms were 8.7 per cent in 1949, but

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[79]Healey, op. cit., p. 141.

[80]"Rubber," Forbes, op. cit., p. 111.

[81]Cf. Profits and Prices, op. cit., p. 10.

increased to 16.9 per cent in 1950.[82] Since then, the ratio has remained fairly high. It was, for example, 15 per cent in 1956.[83]

Recently profits, as a per cent of sales, have been higher for the large firms than for the small firms (see Table 6). Furthermore, since 1950 the profits have been more stable for the former than for the latter. The greatest point spread between the highest and lowest percentage return on sales for the years 1950, 1952, 1954, and 1955 was 1.2 for any one of the Big Four (Goodrich), while the least point spread for any one of the smaller firms (Mansfield) was 1.4. U.S. Rubber had the least point spread (0.3), while Mohawk had the greatest (12.5). However, presumption notwithstanding, Goodrich, the most diversified of the Big Four, has the greatest point spread of the Big Four, although as an unweighted average the net profit percentage for Goodrich has been larger than that for the other three firms.

Assuming that advertising expenditures are a highly discretionary item, the absolute and relative profit positions of the individual firms in the industry serve as significant determinates of the dimensions of the advertising appropriation. With profits relatively stable and high, greater advertising expenditures may be elicited.

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[82] See Council of Economic Advisors, The Economic Situation at Midyear, transmitted to the Congress, July 23, 1951 (Washington, D.C.: U.S. Government Printing Office, 1951), p. 11.

[83] Cf. "Rubber," Forbes (January 1, 1957), p. 16.

TABLE 6

RATIO OF PROFITS TO NET SALES FOR SELECTED TIRE MANUFACTURERS, SELECTED YEARS, 1950-1955

Company*	1955	1954	1952	1950
Goodyear	4.4%	4.4%	3.4%	4.2%
Firestone	5.0	4.4	4.5	4.8
U.S. Rubber	3.6	3.6	3.3	3.5
Goodrich	6.2	6.2	5.5	6.7
General	3.3	2.1	3.3	6.8
Mansfield	2.4	1.8	2.4	3.2
Seiberling	2.5	0.6	1.9	4.8
Lee	3.8	3.6	3.9	7.5
Cooper	1.7	0.8	1.8	4.3
Mohawk	2.3	7.3(d)	3.6	5.2

*In the order of 1955 sales.
(d) Deficit, per cent.
Source: Moody's Industrials (New York: Moody's Investors Service, 1956), pp. 116, 133, 175, 712, 898, 903, 1506, 1978, 2646, and 2700.

Purchasing and Manufacturing Characteristics

Purchasing and inventory. Inventory management relates to the advertising-appropriation decision. Advertising may be used in the attempt to alleviate certain inventory problems--e.g., leveling seasonal fluctuations in demand. On the other hand, any fluctuations in seasonal demand will be reflected in a reverse movement in inventories as an attempt is made to keep monthly production level. The importance of material costs in the total cost structure of the manufacturer may force him to adopt greater production flexibility. If such is the case, advertising may be used to reinforce rather than to counteract seasonality of demand. At a minimum, however, the turnover of inventories and the associated cash requirements affect the funds available for advertising.

Inventories--including raw materials, goods-in-process, and finished goods--account for approximately one-third of total assets (see Table 7). Average monthly inventories were approximately 2.3 times larger than average monthly sales for the rubber industry in 1954.[84]

TABLE 7

INVENTORIES IN DOLLARS AND AS A PER CENT OF TOTAL ASSETS FOR SELECTED FIRMS, 1955

Company	Inventory (Millions of dollars)	Inventories as a Per Cent of Total Assets
Goodyear	$785.7	38.5%
Firestone	635.5	33.2
U.S. Rubber	575.9	39.0
Goodrich	507.9	29.0
General	183.2	26.3
Mansfield	30.8	45.3
Dayton	40.0	28.9
Seiberling	24.2	37.6
Lee	29.9	35.7
Cooper	9.3	30.6
Mohawk	7.0	37.0

Source: Moody's Industrials (New York: Moody's Investors Service, 1956), pp. 116, 133, 175, 712, 187, 898, 903, 1506, 1978, 2646, and 2700.

As further proof of the importance of inventories, materials, fuels, and electricity accounted for 55.7 per cent of the value of products shipped in 1947 by tire manufacturers. (See Table 8).

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[84] Cf. Rubber World, 1955-56 (Washington, D.C.: Chemical and Rubber Division, Business and Defense Service Administration, U.S. Department of Commerce, Vol. 133), p. 543.

TABLE 8

VALUE OF PRODUCTS SHIPPED BY TIRE MANUFACTURES, BY EXPENSE ITEM 1947

Item	Per Cent
Materials, fuels, electricity	55.7
Value added by manufacture	44.3
Production wages	16.4
Other wages and salaries	4.3
Depreciation, interest, rent, other selling and advertising, taxes, profit	23.6

Source: Warren W. Leigh, "Automotive Tires," Marketing Channels, Richard M. Clewett, ed. (Homewood, Illinois: Richard D. Irwin, Inc., 1948).

With inventories playing such a significant role, the price of the basic raw material is of vital interest to the tire manufacturers. Leigh[85] estimates that a one-cent-per-pound reduction in the price of raw rubber costs the fabricating industry as much as $5 million in inventory losses. The price level of raw rubber has varied from year to year and has varied over a large range for any one year. In this light the rubber products manufacturer has been particularly vulnerable to the vagaries of the factor market.

Individual firms have reacted to the possibility of price changes in various ways. The large companies have usually carried large inventories, keeping available several months' supply as a safeguard against scarcities and to achieve flexibility in meeting large orders. In contrast, the small manufacturers have maintained relatively insignificant raw-materials inventories, often little more than a month's

[85] Leigh, "Automotive Tires," op, cit., p. 125.

supply.[86] However, in general, inventory tonnage has declined sharply in recent years, even in the face of mounting production and sales.[87] Furthermore, the increasing availability of synthetic rubber[88] will tend to stabilize the price of raw rubber.[89]

Although some of the problems associated with purchasing and inventory management have been reduced, the habits which members of the industry have followed for years may not be dispelled immediately. On the other hand, the availability and development of synthetic rubber has offered tire manufacturers increased opportunity for product innovations which could, or possibly must, be exploited through various types of advertising and promotional activities. In addition, the government's disposal of the synthetic plants will significantly affect the future structure and operations of the industry. It seems plausible that the government's disposal program[90] fostered greater industrial integration

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[86] Cf. Albert Abrahamson, "The Automobile Tire--Forms of Marketing in Combat," Price and Price Policies, Section III, Walter Hamilton and Associates, eds. (New York: McGraw-Hill Book Co., 1938), p. 94.

[87] See Harry A. McDonald, Program for Disposal to Private Industry of Government-Owned Rubber-Producing Facilities (Washington, D.C.: Reconstruction Finance Corporation, March 1, 1953), p. 20.

[88] The growing importance of synthetic rubber is evidenced by the fact that the United States consumes twice as much synthetic as it does natural rubber; by 1957 an estimated deficit of 1.7 million long tons in the supply of world rubber must be filled by synthetic rubber. See McDonald, op. cit., p. 44.

[89] "Unlike natural rubber, . . . synthetic rubber . . . promises to be a more stable-priced raw material that ought to reduce the inventory problems heretofore encountered by the tire manufacturers." E. B. Alderfer and Michl, op. cit., p. 323. See also, "Synthetic Rubber: All Aboard," Fortune, LI (July, 1953), p. 71.

[90] The negotiation deadline was December 27, 1954.

than existed previously. "In the words of Morton E. Yohalem, an old S.E.C. hand who came over to draft the R.F.C. report, 'The best you can hope for is a fairly competitive oligopoly.'"[91]

The distribution of ownership and control of synthetic rubber manufacturing facilities by present members of the industry may reduce the emphasis given to advertising. Freedom of entry into the industry may be restricted by limiting the access to synthetic rubber rather than by maintaining or increasing existing preferences for current members' products. To the extent that relative size in the industry is regulated by the allocation of raw materials, reduced emphasis will be given to advertising as an agent employed for strategic growth purposes.

Production and capacity. In 1948, approximately $4.90 of fixed assets were employed per dollar of tire and tube production,[92] yet an investment of only $7,000 per worker was employed.[93] "This is about one-half the per capita investment of the leading 100 American manufacturing corporations. Compared to these corporations, therefore, the tire and tube industry is (a) a low capital employing industry or (b) it has been able to effect an efficient capital-manpower operating unit."[94]

The industry is not a low capital-employing industry. For the rubber products industry as a whole, the ratio of total assets to the net value of product (national income originating)[95] is high. The ratio

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[91] "Synthetic Rubber: All Aboard," op. cit., p. 71.

[92] Cf. Parsons, op. cit., p. 337.

[93] Leigh, "Automotive Tires," op. cit., p. 117.

[94] Ibid.

[95] Too much reliance should not be placed upon this measure, since the industries compared may not be operating at the same proportion of capacity and the role of the more current assets is not known.

for all manufacturing in 1947 was $1.47, while for the rubber products industry it was $1.61. This figure ($1.61) can be compared to the ratio for apparel (0.43), autos and automobile equipment ($1.54), and iron and steel and their products ($1.48).[96]

The explanation may lie, in part, in the fact that the tire industry has suffered through much of its history from excess capacity.[97] Moreover, recent war-time demands have necessitated productive facilities of greater magnitude than would be justified under normal peace-time requirements. It is estimated that the industry's capacity to produce tires had (in 1948) increased 35 per cent over the pre-war period.[98] Following World War II, the production capacity of the firms exclusive of the Akron area was more than capable of meeting the anticipated peace-time demand for tires.[99] The 1947 capacity outside the Akron area was estimated to be 56.5 million units, while the postwar normal demand was estimated to be 1.5 million units less.

One explanation of the excess capacity arises from the fact that, although the manufacturing equipment has a very long life,[100] considerable technological progress has taken place. Two firms, for example, General and Goodyear, have each publicized an ". . . automatic tire building machine which requires the operator merely to control a button

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[96] Business Size and the Public Interest, Economic Policy Division Series, No. 18 (New York: National Association of Manufacturers, November, 1949), p. 12.

[97] Leigh, "Automotive Tires," op. cit., p. 125.

[98] A. F. Schalk, Jr., "Significant Merchandising Trends of the Independent Tire Dealer," Journal of Marketing, XII (April, 1948), p. 463.

[99] Parsons, op. cit., p. 2.

[100] Cf. Allen, op. cit., p. 203.

switchboard and lift off the completed tire. The former company claimed an increase in output from 180 tires daily by the old process to 720 tires daily by the new."[101] Finally, the single pieces of machinery used in tire production are relatively large units. This makes it particularly difficult to adjust to technological innovation. "Where production is carried on in a considerable number of identical units, one or more can be closed down with relative ease. One part of a large production unit, on the other hand, cannot be allowed to deteriorate without disrupting the entire production process."[102]

The nature of demand may also account for some of the apparent excess capacity. Since a significant seasonal variation in demand exists that is not completely leveled through inventory management, a plant is required which will be ". . . reasonably efficient throughout the range of variation rather than a plant that will have optimal efficiency at any given output."[103] Thus, during periods of relatively low demand, excess capacity may appear to be greater than it would be if annual demand were expressed as a monthly average compared to productive facilities.

Another marketing characteristic has tended to increase the capacity of the industry. The marketing advantages arising from decentralized

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[101] Kenyon A. Knopf, The Location of the Rubber Tire and Inner Tube Industry (Unpublished Ph.D. dissertation, Harvard University, 1949), p. 111.

[102] Lloyd G. Reynolds, "Competition in the Rubber Tire Industry," The American Economic Review, XXVIII (1938), p. 466.

[103] Cost Behavior and Price Policies, Conference on Price Research, Committee on Price Determination (New York: Bureau of Economic Research, Inc., 1943).

production have led to the building of branch plants, at the expense of the Akron plants, increasing further the total capacity of the industry.[104]

No concrete evidence is available concerning the cost characteristics of the total rubber products industry. One study[105] of the Massachusetts rubber industry indicated that decreasing costs were prevalent with plants of fixed size. This study stated that "... to expand production by 25 per cent, you need to increase electric power and man-hours by only about 20 per cent."[106]

Reynolds stated in 1938 that the large Akron plants were well beyond the optimum size for producing tires. He said that "... the economies of machine production are fully realized with a relatively small plant. Beyond this point administrative difficulties increase, and in plants of the Akron size, coordination of effort becomes a pressing problem."[107] On the other hand, it is argued that the small (1,000 tires daily capacity) plant is relatively uneconomical as indicated by the fact that, in the 15 years after 1938, the number of small plants had not risen. "Branch plants have been built with the goal of from 5,000 to 10,000 tires daily capacity, and as production has expanded it has been through

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[104]The following illustrates the magnitude of this decentralization: "The expansion at Gadson and Cumberland (by Goodyear) has approximately doubled previous capacities. They are capable of producing 10,000 tires and 6,000 tubes. In Jackson (Goodyear) the announced capacity was 5,400 passenger car tires and 1,000 truck tires daily. The Memphis (Firestone) plant produced about 10,000 tires daily, while Ford in Detroit (since sold) produced 18,000 tires daily. Production at Oaks (Goodrich) was 4,000 tires and 4,000 tubes daily." See Knopf, op. cit., p. 146.

[105]"New Way to Gauge Production," Business Week (January 15, 1955), pp. 89-90, reporting a study by Harry B. Ernst (Economics Department, Tufts College).

[106]Ibid., p. 90.

[107]Reynolds, op. cit., p. 466.

the expansion of these plants to an even higher figure. If efficient scale of operations had permitted, these expansions would have been in other locations for smaller market areas because of the dominant influence of the market on location."[108]

The conclusions concerning economies of scale depend in part upon the costs included in the study. The very small plant is probably inefficient, if "cost" refers to pure manufacturing costs, i.e., if general administrative and selling expenses are not included. In 1943, a 6.00-16 4-ply synthetic tire involved a total factory cost of approximately $6.71 for the Big Four, but $7.09 for ten other small manufacturers, yet total selling and general administrative costs for the former were $2.44 and $1.56 for the latter.[109] Thus, total unit costs were $.50 higher for the large firms than for the small.

Relatively different production and marketing costs are an effect of, and in turn determine, the competitive adjustments made by the various firms. If the decision-maker of the small firm should believe that his costs are higher, the tendency will be for him to develop devices for mitigating or overcoming the differential--either by lowering his costs (perhaps by reducing advertising costs, since they are highly "manageable") or by offsetting the cost differential (as by striving for a price advantage).

At any rate, decisions with respect to marketing and advertising cannot be divorced from those of production. Certainly, the characteristics of the product market influence manufacturing processes and costs.

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[108] Knopf, op. cit., p. 103.

[109] Cf. Survey of Tire and Tube Manufactures, op. cit., p. 5.

The ability to meet changes in the product demanded by the automobile manufacturers may require, at least superficially, general-purpose rather than special-purpose machines and personnel. Thus it is important to determine the marketing strategy of the firms in question. A medium-sized company may be only an ineffective compromise between certain (e.g., production) advantages of small units and certain (e.g., marketing) advantages of large units.[110]

The Demand and Marketing Strategy of the Industry

Introduction

General strategy. The selling behavior of the tire industry has been a mixture of two elements of marketing strategy: competition and collusion. The competitiveness of the industry varies by type of market, by level in the trade channel, and by selling technique. Product innovation, for example, has always been an area of considerable competition, yet follow-the-leader pricing appears to be prevalent.

The industry's marketing strategy has been both convergent and divergent in nature. Immediately after World War II, an attempt was made to concentrate production and distribution upon some modal or typical demand (convergence), while recent efforts have been directed toward a full line of sizes and varieties (divergence).[111] The nature and extent of these marketing strategies are basic determinants of advertising expenditures. A firm perceiving increased competition and desiring to

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[110] Cecil E. Fraser and George F. Doriot, Analyzing Our Industries (New York: McGraw-Hill Book Co., 1938), p. 20.

[111] Cf. John A. Howard, "Collusive Behavior," Journal of Business, XXVII (July, 1954), p. 196.

establish brand familiarity for a full-line of products may increase its advertising budget tremendously.

Market characteristics. Approximately 225 million tires are used in highway transportation, with another 10 million used on farm tractors and implements,[112] and an additional ¼ million casings required for civilian and military aircraft.[113] "Millions of additional units shoe everything from baby carriages and lawn mowers to industrial equipment and great earth movers."[114] The value of all the tires and tubes shipped in 1953 was approximately $2 billion.[115] Passenger and truck-bus tires accounted for approximately 83 per cent of the wholesale value of tires sold in 1947. Tire manufacturers sell these casings in three distinct markets: (1) the replacement, (2) the original equipment, and (3) the export markets. Table 9 illustrates the distribution of shipments by the various major markets.

Domestic replacement demand is satisfied not only by new tires but also by retreading and recapping the old ones. Of the total domestic market in 1952, 54.0 per cent of the demand was for new replacement tires and 25.2 per cent[116] in recaps and retreads, although the latter

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[112]Farm tires go to market generally through the same distribution channels that characterize automotive tires. Both new and used automobile tires are used on many types of farm implements. Cf. Leigh, "Automotive Tires," op. cit., p. 116.

[113]Ibid., p. 120.

[114]Ibid.

[115]"Rubber and Rubber Products--Basic Industrial Data," National Industrial Conference Board (New York: National Industrial Conference Board, Inc., 1956), p. 13.

[116]D. H. Kaplan, Big Enterprise in a Competitive System (Washington: The Brookings Institution, 1954), p. 100.

percentage is higher for truck and bus than for passenger car tire renewals.[117] "Recaps" are a competitive substitute for new tires and must be recognized as such in the sales strategies of the manufacturers.

TABLE 9

AUTOMOTIVE CASING SHIPMENTS BY MARKETS,
ALTERNATE YEARS 1949-1955
(per cent of annual shipments)

	Original Equipment		Replacement		Export	
Year	Passenger	Truck & Bus	Passenger	Truck & Bus	Passenger	Truck & Bus
1949	36%	5%	48%	9%	1%	1%
1951	34	7	44	13	1	1
1953	35	5	47	9	1	1
1955	39	4	47	8	1	2

Source: Rubber World (New York: Rubber Manufacturers' Association, Inc., April, 1957), p. 144.

The historical pattern of tire production shows an uneven cyclical fluctuation. Annual production has shown irregular growth, with the distribution among the various markets remaining approximately in the

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[117] Camelback, which is the material used to recap old casings, is essentially the same as new tread stock but is especially prepared for retreading. In 1955, production of this retreading stock amounted to over 126,000 long tons. Cf. The Marketing of Rubber Tires and Tubes, op. cit., p. 5. Retreading can give as much as 80 per cent of the mileage of a new tire on passenger cars and even more on trucks and buses--it is not unusual to extend the life of a truck tire by 200 per cent. See Abrahamson, op. cit., p. 88. Its use is increasing, as evidenced by the fact that the proportion of cars having recaps in 1953 was 9 per cent and rose to 15 per cent in 1955. Cf. Automotive Survey, Number 20, conducted by U. R. Simmons & Associates Research, Inc. (Crowell-Collier Publishing Co., 1956), p. 37. The demand for recaps is a function of income. Of car owners with incomes of $10,000 and over, only 7 per cent had any recaps, while those with incomes less than $3,000 had recaps accounting for 17 per cent. Ibid., p. 39.

same proportions.[118] In the long run, production and sales tend to be equal, although average finished-goods inventories approximate 15 per cent of the total production (units) for the industry.

The seasonal fluctuation in wholesale sales has a regular pattern from a low in January to a high in June and July (see Table 10 and Exhibit 5). This sales peak coincides with increased vehicle use during the summer months.[119] The pattern of wholesale sales is due in part to the volition of the manufacturer as contrasted to the dictates of retail demand. Wholesale sales approximate retail sales over a span of years, but within any one fiscal period, inventory variations may cause considerable disparity.[120] On the other hand, with the use of consignment selling, the wholesale sales figures do not reflect the total inventory in the trade channel available to the ultimate purchaser.

The industry has attempted to some extent to overcome the seasonal fluctuations in demand.[121] The most recent effort is the promotion of snow tires. In addition to increasing total annual demand, the purchase of an extra set of snow tires in the fall and winter months would reduce

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[118] See, for example, Allen, op. cit., p. 184.

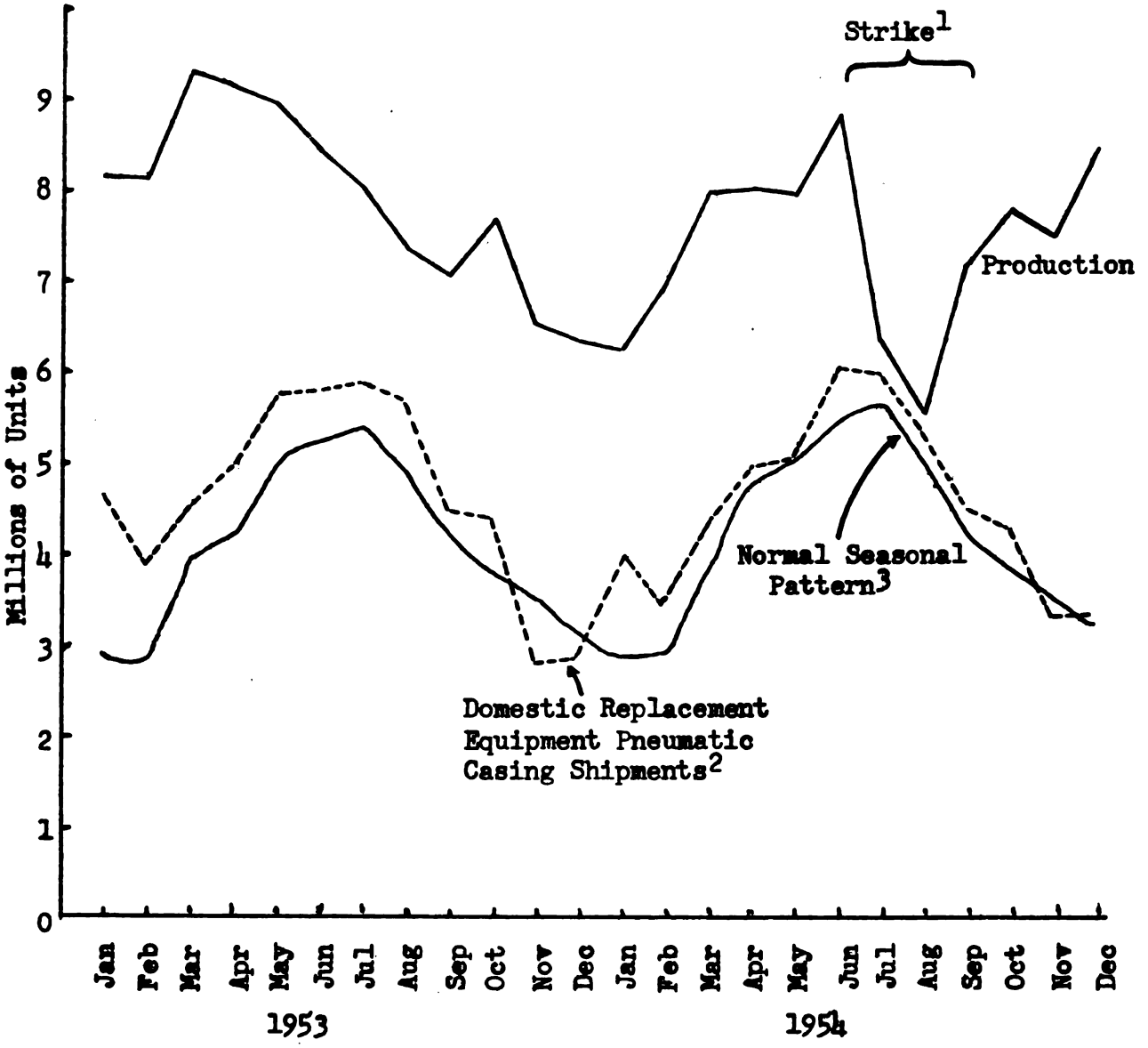
[119] Cf. The Marketing of Rubber Tires and Tubes, op. cit., p. 10.

[120] "In 1947, for example, retail sales were undoubtedly 7 to 10 per cent less than manufacturers' shipments as tire outlets steadily expanded in number and inventories were being accumulated." Knopf, op. cit., p. 73.

[121] The seasonal allocation of the advertising appropriation for replacement tires shows a high degree of correlation to that of the seasonal replacement sales pattern. See, for example, Survey of Rubber Tire and Tube Manufacturers, op. cit., pp. 2, 4 and 5. This might indicate that little advertising effort is directed toward overcoming the reluctance to buy during periods of relatively low seasonal demand.

Figure 5

DOMESTIC REPLACEMENT PNEUMATIC CASING SHIPMENT AND PRODUCTION, 1953-1954



1. Strike at Goodyear for 52 days, ending August 24, and at Firestone for 24 days ending September 4.
2. Shipments include sales, consignment, and deliveries under mileage contracts.
3. Projection made from 1948-1949 experience.

Source: The data concerning shipments and production were taken from Survey of Current Business, Office of Business Economics, U.S. Department of Commerce, XXXV (March 1955), p. S-35. The "normal seasonal pattern" was adapted from a chart prepared by the Rubber Manufacturers Association, Inc., entitled "Estimated Industry Passenger Tire Retail Sales Compared with Normal Seasonal Pattern, December, 1951."

the seasonality of sales.[122] The seasonal fluctuations in demand, however, have not been eliminated. As reflected in production and shipments, the demand by months in 1955 is shown in Table 10.

TABLE 10

SHIPMENTS AND PRODUCTION OF AUTOMOTIVE PNEUMATIC CASINGS, 1955
(Millions of Units)

Month	Production	Shipments	
		Original Equipment	Replacement
January	9.04	3.79	4.97
February	8.74	3.83	4.28
March	10.08	4.78	4.93
April	9.15	4.46	5.32
May	9.95	4.35	5.36
June	10.70	3.93	6.13
July	9.03	3.89	5.71
August	8.72	3.36	5.98
September	9.13	3.14	5.17
October	9.56	3.50	4.46
November	9.60	4.30	3.59
December	8.48	4.04	3.30

Source: Survey of Current Business, Office of Business Economics, U.S. Department of Commerce, XXXVI (March 1956), p. S-38.

A significant measure of replacement tire sales potential is vehicle registration.[123] On this basis, the market is concentrated geographically. Over 63 per cent of passenger car and approximately 60 per cent of truck

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[122]Stressing greater safety and convenience, the marketing efforts have been, in general, successful with the proportion of cars having snow tires increasing from 11 per cent in 1952 to 19 per cent in 1955. See Automotive Survey, op. cit., p. 38.

[123]Cf. Office of Domestic Commerce, U.S. Department of Commerce, State and Regional Market Indicators 1939-1945, Economic Series No. 60 (U.S. Government Printing Office, 1947), pp. 52-55.

registrations are located in the Middle West and the southern two-thirds of the Atlantic Coast region. Furthermore, industry statistics show that 165 market areas account for almost two-thirds of total retail sales.[124] Thus a firm desiring to expand its efforts in the market areas of only the highest potential could concentrate on such market tracts. Moreover, local and regional advertising media would be appropriate.

Demand

Original equipment. A significant proportion of tire demand is directly related to new vehicle production.[125] Although of secondary importance, the original equipment market has absorbed about 30 per cent of the tires sold in past years.[126]

Since tires represent only 5 to 8 per cent of the sales value of an automobile,[127] demand for tires in the original equipment market is a function of the demand for automobiles almost regardless of tire prices. The demand for automobiles is dependent, to a large extent, upon the

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[124] Distribution of Motor Vehicle Tires, Hearing before a subcommittee of the Committee on the Judiciary, United States Senate 83rd Congress, second Session on S-175, May 21, 1954 (Washington, D.C.: Government Printing Office, 1954), p. 6.

[125] A contributing factor to the high degree of concentration in the tire industry is that it sells to an oligopolistic market, the automobile industry. For example, Philip Neff, Lisette C. Baum, and Grace E. Heilman, Production Cost Trends in Selected Industrial Areas (Berkeley: University of California Press, 1948), p. 108, state that the automobile industry purchases over 82 per cent of the total output of rubber products manufactured in the Akron area. A strong tendency exists for a countervailing power to form in response to any related or competing concentration of economic power. See, for example, John Kenneth Galbraith, "Countervailing Power," The American Economic Review, XLIV (May, 1954), pp. 1-2.

[126] This market is made up of automobile, truck, and trailer manufacturers who buy tires to mount on the vehicles which they produce.

[127] Knopf, op. cit., p. 73.

capacity of the retail market to purchase. The original determinant of this demand for tires, then, is national income.[128]

Sales are direct and outright to original equipment purchasers and, since the working relationship between car engineers and tire engineers must be close, a rather continuous contractual arrangement exists between purchaser and supplier.[129] Thus, little advertising effort is directed specifically toward this market. But the tire manufacturers' pricing policies in this market indicate a type of hidden sales promotional allowance,[130] and at least one of the original equipment suppliers feels that sales to this market can only be maintained by a ". . . strong public acceptance of the brand name which can result only from satisfactory public experience with a brand supported by large advertising expenditures."[131]

Replacement demand. The remaining 70 to 75 per cent of the domestic pneumatic auto and truck tire demand is represented by renewals which are bought by car and truck owners to replace the worn out tires on their vehicles. This section of the market may be subdivided into two sections: (1) tires sold under the manufacturers' own brand names, such as United States Rubber, Firestone, and Goodyear as well as those of smaller manufacturers, Mohawk, Cooper, and Lee; and, (2) those marketed under private

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[128] Cf. Abrahamson, op. cit., p. 86. Historically, the demand in the original equipment market has fluctuated more violently than in the replacement market. Leigh, "Automotive Tires," op. cit., p. 122.

[129] See, for example, Knopf, op. cit., p. 68.

[130] This aspect of the original equipment market will be discussed more fully in the section on pricing.

[131] The Marketing of Rubber Tires and Tubes, op. cit., p. 2.

brand names, such as Gulf, Allstate, Amoco, and Atlas.[132] The latter category accounts for approximately 15 per cent of the domestic tire sales, or approximately one-third of the new tire replacement demand.[133]

"Since tires on a new car or truck will normally give at least two years of service, the estimation of future sales replacement demand generally is directly related to the number of cars or trucks in operation that are two years old and older."[134] The replacement factor may be reduced through careful use of the tire and the opportunities for retreading, but such possibilities are subject to severe limitations. The replacement tire ratio (tires required per year) has dropped from two in the late twenties to approximately one and one-half (1.52 in 1953)[135] tires per car on the road two years old or older.

Within the replacement market, the most important accounts from the standpoint of growth are the private enterprises owning from 5 to 1,000 trucks or buses.[136] The larger of these customers are classified as national accounts. Those owning fleets of 5 to 99 units are classified as commercial accounts. The national accounts are generally held by the larger tire companies and are negotiated by the home office.[137] These purchasers buy several hundred tires at a time. Thus tire costs are a

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[132] Although not treated in this study, some major share of the advertising expenditures for these private brands is supported by nonmanufacturers. Atlas Supply had a 1953 national advertising expenditure of $404,000.

[133] Cf. Automotive Survey, op. cit., p. 28.

[134] The Marketing of Rubber Tires and Tubes, op. cit., p. 6.

[135] Ibid. The ratio for trucks and buses is somewhat less.

[136] Lee Rubber & Tire Corporation, 38th Annual Report (Conshohocken, Pennsylvania, January 19, 1953).

[137] Cf. Gettell, op. cit., p. 269.

significant item to them.[138] Psuedo product differentiation created through advertising is unimportant. Of greatest significance are the discounts available, services rendered, and the opportunity of extending the life of the tire. Evidence indicates that some price elasticity of demand exists for these purchasers.[139]

The greatest number of renewal sales are made in the retail market to individual passenger car owners who buy largely for personal use. The tire purchase for them is a simple act with style and design playing a relatively minor role; and, although type of tread is a consideration, the major factors are durability and safety. However, the certainty and significance of these features are as much or more a reaction to advertising as to concrete fact of performance.[140] Prices, within given ranges, are also of secondary importance with the exception that the quoted price is merely a point of pecuniary departure. Ultimate consumers shop from one dealer to another, securing different trade-in bids on old tires, which become in reality allowances or price concessions on the purchase of a new tire. All of the special discounts, free merchandise, and offerings for purchases in pairs constitute further deductions.

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[138] Gettell, op. cit., p. 265. Some bus and taxi companies secure their tires on a rental basis, leasing tires at a specified rate per mile or per day.

[139] Leigh, "Automotive Tires," op. cit., p. 123, quotes one spokesman for a tire producer as saying: "Large users of truck and bus tires, realizing that natural rubber [for which a price fall was anticipated] is a large element of cost, slowed up their buying in April-June, and we felt it necessary to reduce prices in June and July from 2½ per cent to 13 3/4 per cent. . . ."

[140] Cf. Abrahamson, op. cit., p. 85.

Although to the retail customer the tire purchase is a significant purchase, the transaction is made infrequently. "The modal purchase consists of two tires which at present prices would amount to $40 or $50. Since each car owner requires just over one replacement tire per year, this means that the average tire buyer is in the market only once in approximately every two years."[141]

The magnitude of the purchase and the ability to extend the tire life both tend to impart to the replacement tire market an income elasticity of demand.[142] As a personal consumption expenditure item, tires and tubes have an "above-average sensitivity" to changes in disposable personal income. For the period 1929-1940, a one per cent change in disposable personal income was associated with a 1.2 per cent change in expenditures for tires and tubes.[143]

Moreover, a definite relationship exists between the income classification of the retail consumer and the brand purchased--the higher the income classification, the stronger the preference for the extensively advertised manufacturers' brands (see Table 11). A reverse preference is shown for the large private-brand distributors. This situation probably reflects the total purchasing behavior as well as the price-advertising effects.

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[141] Leigh, "Automotive Tires," op. cit., p. 123.

[142] See Parsons, op. cit., p. 18. When, in 1941 and 1946, national income increased to the levels of $104 and $178 billion, the proportion spent on rubber products increased to .47 and .63 per cent of the national income respectively. Ibid.

[143] Clement Winston and Mabel A. Smith, "Income Sensitivity of Consumption Expenditures," Survey of Current Business, XXX(January, 1950), pp. 17-20. See also, Elmer C. Bratt, "The Use of Behavior Classifications in Business-Cycle Forecasting," The Journal of Business of the University of Chicago, XXII (October, 1949), p. 223.

TABLE 11

DISTRIBUTION OF BRANDS OF REPLACEMENT TIRES TO BE PURCHASED NEXT RESPONDENTS CLASSIFIED BY INCOME, 1954

Brand	Income Classification			
	Under $4,000	$3,000-$4,999	$5,000-$9,999	$10,000 and over
Goodyear	28%	29%	30%	31%
Firestone	20	21	22	23
Goodrich	8	8	9	12
Allstate (Sears)	9	10	8	6
Atlas (Standard Oil)	5	3	4	1
Riverside (Montgomery)	5	4	2	2
Davis (Western Auto)	2	1	1	0.5
Others*	23	24	24	25.5
	100%	100%	100%	100%

*The study showed no significant preferences for the "other" brands included in the study.

Source: 10th Annual Passenger Car Tire Survey, conducted by U. R. Simmons & Associates Research, Inc. (Crowell-Collier Publishing Co., 1955), p. 6.

Another characteristic of the replacement passenger car tire market is that competition exists between the various grades of tires. These grades are fairly distinct with respect to price classifications (see Table 12). Competition between grades requires either full-line merchandising associated with a more institutional type of advertising or specialty merchandising and specific product advertising with the associated cost distributed over a smaller assortment.

TABLE 12

PRICE RANGES FOR VARIOUS GRADES OF 6.70-15, 4-PLY PASSENGER CAR TIRE WITH STANDARD TREAD, 1953

Tire Grade	Price Range	
	Blackwall	Whitewall
Premium	$40.70	$47.90
Tubeless	33.00	39.60
Puncture-sealing	22.05	27.00
Second line	15.95 - $19.50	
Third line	12.95 - 16.25	
Recaps	6.50 - 10.00	

Source: A. D. H. Kaplan, Big Enterprise in a Competitive System (Washington, D.C.: The Brookings Institution, 1954), p. 102.

Distribution Channels and Dealers

Channels. The complexity of the distribution channels and the number of dealers involved in the process pose severe marketing problems to the tire manufacturer. Tires may be sold directly to the ultimate user or pass through as many as four independent middlemen. In the latter case, the problems of "discounting" prices in the complex channel and of communicating with the heterogeneous markets become particularly significant. Furthermore, since the product enjoys ". . . a relatively wide distribution margin, tires have become a part of the merchandise assortment in many varied types of outlets. Tire distribution and prices, therefore, reflect the effect of competition among the numerous outlets of a common type as well as the impact of the new forms of

distribution upon the older, more specialized types as each struggles for market position."[144]

The major channels involved in the replacement market are:[145]

1. Direct to large consumers, such as taxi-cab operating companies and bus lines
2. To branch warehouses and sales agencies to retail dealers
3. Through jobbers to the ordinary type of merchant
4. Oil companies having retail outlets
5. Direct to mail-order houses, chain stores, and department stores
6. Company-owned-and-served retail stores

Wholesaling. Of the two independent middlemen in the channel performing the wholesaling function, the full-service wholesaler has never gained much importance. This is largely due to the fact that ". . . they were unable to develop dealers and teach them to handle tire service problems, and they were unwilling to carry adequate stocks and assume the financial risks involved."[146] An exception to this situation, and growing in importance, is the agent middleman--the jobber or manufacturers' agent. Maintaining a close relationship with the manufacturer, the agent has been highly successful in contacting the large-scale purchaser.

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[144]Warren W. Leigh, Automotive Tire Sales by Distribution Channels: Study 5 (Akron, Ohio: Bureau of Business Research, University of Akron, October 11, 1948), p. 3.

[145]Cf. Allen, op. cit., p. 569.

[146]Leigh, "Automotive Tires," op. cit., p. 124.

The major wholesaling establishment, though, is an extension of the manufacturer's own organization.[147] These branches perform the characteristic wholesaling functions and, in addition, act as repair and tire service agencies. This forward integration, although extending the control of the manufacturers into the trade channel, does increase the amount of inventories which they must maintain. However, the proximity to the market permits highly sensitive promotional efforts.[148]

Recently the wholesaling function has been undertaken by such large retail organizations as mail-order houses, chain stores, and petroleum companies.[149] Standard Oil of New Jersey established the Atlas Supply Corporation as a buying agency and wholesaler of tires to the various Standard Oil operating companies.[150] In most instances, however, a separate institution has not been established by the petroleum companies, but a direct purchase-resale contract is maintained. Nevertheless, "private" branded tires are usually carried by these large oil companies.[151]

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[147] In 1948 there were 234 manufacturers' branches with sales of $748,507,000. U.S. Census of Business, 1948, Trade Series, The Automobile Trade (Washington, D.C.: U.S. Government Printing Office, 1952), p. 22.

[148] The manufacturer's branch in 1948 had an expense ratio of 7.6 per cent of sales, considerably less than one-half the 19.7 per cent for full service wholesalers. Ibid.

[149] "The relations of the tire companies with these large retailing organizations are in certain ways similar to the original equipment market. They are faced with large buyers who command special treatment; here, also, contracts are negotiated separately and secretly. The large retailers either spread their purchases to maximize their bargaining power or grant contract renewals to their existing suppliers only on increasingly advantageous terms." Gettell, op. cit., p. 293.

[150] With respect to the exposure to sale, "Atlas tires are on sale at 40,000 dealer outlets and Socony-Vacuum's Mobile Tire, at perhaps 30,000 outlets." Leigh, "Automotive Tires," op. cit., p. 130.

[151] Cf. Problems of Independent Tire Dealers, op. cit., p. 3.

Small as well as large manufacturers sell to these wholesale-retailers and private brands of these large distributors compete with the manufacturers' own brands.[152] The advertising inelasticity of demand for tires in general causes the advertising efforts of these wholesale-retailers to have a negligible effect upon increasing total industry demand. To a large extent they merely compete with the manufacturer for existing prospects. On the other hand, the producer does not bear the cost of advertising the private brand, except where an advertising allowance is offered to the purchaser. Thus, the nature of the channel and the terms of the contractual arrangement between the distributor and the manufacturer will affect the size of the advertising appropriation of both.

Retailing. The number of retail outlets for tires is very large. In 1947, the Bureau of the Census listed 335,000 outlets of 20 different classifications which sold tires.[153] The 1952 replacement tire sales by retail outlets are presented in Table 13.

Marketing facilities have evolved in such a fashion that less and less reliance is placed upon the small independent retail dealer.[154] The major growth has been in the rise of manufacturer-owned retail outlets. Among other purposes, with cost allocation essentially a matter

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[152] It should be noted that the Big Four account for only 62.7 per cent of the private-brands production. Ibid.

[153] Cf. Leigh, Automotive Tire Sales by Distribution Channels: Study 5, op. cit., p. 20.

[154] Their share of the replacement-tire market has fallen markedly. "In 1926 independent dealers handled 89.3% of the replacement demand for tires. By 1952, their share of this market had shrunk to about 50%." Problems of Independent Tire Dealers, op. cit., p. 3.

TABLE 13

1953 REPLACEMENT TIRE SALES BY RETAIL OUTLET

Retail Outlet	Per Cent of Retail Sales
Independent tire dealers	50
Gasoline stations	26
Chain stores	12
Manufacturer-owned outlets	8
Mail-order companies	2
Others (department stores, co-ops, etc.)	2

Source: Distribution of Motor Vehicle Tires, Hearing before a Subcommittee of the Committee on the Judiciary United States Senate, May 21, 1954, 83rd Congress Second Session on S-175 Washington, D.C.: United States Government Printing Office, 1954), p. 29.

of accounting procedure, these manufacturer-owned units can be used to strengthen weak markets at the expense of more powerful areas.[155]

". . . Small tire companies, such as Pennsylvania, Norwalk, Gates, and Seiberling, that are not affiliated with larger retailing organizations, and Firestone, which has refused to jeopardize the market for its own tires by making private brands for chains and oil companies, tend to cater to the independent dealers more than the tire producers which distribute their tires through other outlets."[156]

The typical independent tire dealer's annual volume ranges from $22,000 to $70,000 and he has a staff of 1.25 to 3.50 persons.[157]

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[155] Cf. Abrahamson, op. cit., p. 104.

[156] Gettell, op. cit., p. 280.

[157] Dealer News, National Association of Independent Tire Dealers (April 5, 1954), p. 1.

He is not in a position financially, nor does he have the ability, to develop and to pursue large advertising campaigns. However, the manufacturers extend their counsel and aid in the performance of advertising and other related activities.[158] The advertising allowances offered to the dealers may be disguised price concessions, but often they are bona fide. A usual practice is to grant 50 per cent of the dealers' local advertising expense as an allowance.[159] Most of the companies have also provided such aids as advertising matrixes, materials for direct-mail advertising, and radio continuity to be used at the dealers' expense.

A significant proportion of the manufacturer's advertising budget is explainable in terms of the needs of the various distributive agencies. In addition, his expenditures are supplemented by the appropriations of independent dealers. Thus, from this standpoint, too much emphasis cannot be placed upon the mutuality of interest and interdependence of the tire manufacturers and the retail outlets distributing their products.

The Price Structure and Pricing

Price level. Competitive practices in the tire industry, as with any industry, have been determined both by the characteristics of the market and by the policies of its members. The market, for example, has never been very sensitive to style features of the product, and manufacturers have tended to force price competition toward the dealer level.

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[158] "The assistance that has been extended to the dealers includes various facilities, such as (a) merchandising and promotional plans, (b) display instructions, and (c) newspaper advertising." Cf. "Firestone Says Its Dealers Get Same Treatment as Stores, Argues the Tire Bill Undermines Our Economic Freedoms," National Independent, XIV (October, 1954), p. 3.

[159] Gettell, op. cit., p. 285.

Depending upon the production and use given cars and trucks, demand is of a derived nature and relatively inelastic. Since no substitute for the rubber tire is available, the industry is somewhat impervious to substitution. Seemingly, under the protection of the large manufacturers, a price structure has been established which permits profitable operations. "Some of the smaller companies have taken advantage of the situation to gain footholds in special markets, but thus far have not pressed this advantage to the point where the larger companies would attack them."[160]

Pre-war tire prices tended to mirror fluctuations in the price of natural rubber.[161] Since World War II tire prices, as compared to other manufactured products, have tended to remain relatively low and fairly stable. Prior to 1950, the rubber tire industry had experienced one of the lowest price increases of nonfarm products. "In 1947, for example, despite the fact that the volume of sales was 80 per cent higher than in 1939, that rubber costs were up 28 per cent, wages were up 100 per cent, and plant expenditures were up 250 per cent, the wholesale tire price was increased only about 60 per cent over 1939."[162]

A major factor enforcing low prices in the industry has been the presence of large purchasers. The original equipment business, for example, has always been the low-profit market for the tire

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[160] Gettell, op. cit., p. 287.

[161] "Even with the use of over 75 per cent synthetic rubber per unit, the tire industry has not been freed fully from its price dependence upon natural rubber." Allen, op. cit., p. 208.

[162] Parsons, op. cit., p. 85.

manufacturers.[163] Because of prevalent excess capacity, major attention has been directed toward increased volume rather than high unit profits. The long-term contract promising a large volume is eagerly sought by the tire manufacturers, in spite of ". . . its extractions in service, its inconvenience to the production schedule, and its low rate of return. . ."[164]

For firms selling to the original equipment market, certain advertising and merchandising benefits result, even if the sale is made at cost.[165] The tire manufacturers believe that ". . . this affiliation puts them in touch with large organizations of automobile dealers who will be prospective dealers for their replacement tires . . . and that they can build up consumer preference for their particular brands by having it known that their products have been selected as stock equipment on well-known automobiles."[166] Even at the risk of being dominated by the powerful customer, the small companies ". . . welcome the impetus to their production that follows the negotiation of a contract to supply a chain or an oil company . . . . And to the small company, loss of one

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[163]"Automobile manufacturers, trading on the knowledge that their business is extremely attractive to tire makers, sometimes threatening to manufacture tires themselves, have played off one seller against another and precipitated bitter rivalry for their long-term original equipment contracts." Clair Wilcox, Competition and Monopoly in American Industry, Monograph No. 21, Investigation of Concentration of Economic Power, Temporary National Economic Committee, 76th Congress, 3rd Session (Washington, D.C.: United States Government Printing Office, 1940), p. 49.

[164]Abrahamson, op. cit., p. 98.

[165]The sacrifice in the price of tires may be in part a subsidy for the maintenance of contracts for other, possibly more profitable, rubber products.

[166]Gettell, op. cit., p. 257.

of these large accounts spells almost certain disaster."[167] Its loss necessitates a readjustment of his production to a much smaller output, which generally results in a higher cost per unit. An additional competitive disadvantage occurs, since the volume contract will be made with another supplier resulting in lower costs for the latter.[168]

Various other considerations have been offered to explain the competitive level of the finished-goods prices. "The individualistic and independent nature of the men"[169] who manage the major rubber companies has often been a factor mentioned. The practice of "spring dating," which is the inducement to dealers to carry inventories in off-season winter months (for which he doesn't pay until spring and summer) has undoubtedly affected the price level.[170] If dealers have stocked heavily, and if the spring demand does not meet expectations, the dealers tend to reduce prices in the effort to sell their inventories.

Price structure. The price structure is a hierarchy of prices, each with an array of published and hidden discounts. The formal discount structure includes at least seven types of discounts, which may be cumulative. These allowances may vary from 25 per cent for a trade discount to 2.5 per cent as a super bonus.[171] At the retail level

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[167] Ibid., p. 295.

[168] Cf. Abrahamson, op. cit., p. 100.

[169] Leigh, "Automotive Tires," op. cit., p. 125.

[170] This practice is practically a guarantee to the dealers against a price decline, so that the manufacturer may regularize production. Cf. The Marketing of Rubber Tires and Tubes, op. cit., p. 5.

[171] Problems of the Independent Tire Dealers, op. cit., p. 7. Discounting is now restricted, in part, by the quantity limit rule.

the actual selling price is obscured by trade-in allowances and other concessions.[172]

To protect the retail price of the product, each tire manufacturer issues a price list to all of his dealers. The price lists tend to provide nation-wide uniform prices and appear to restrict price competition in the consumer market.[173] The difficulties and cost involved in disseminating information about price changes may cause authorized price changes to be minimized. On the other hand, two factors limit the enforcement of suggested retail prices. First, no apparent penalties are attached for noncompliance. Second, trade-in allowances cannot be controlled by the manufacturer.

Competition at the dealer level has generally been very strong. Tires were one of the few major manufactured products over which price wars were relatively common in the post-war period.[174] The year 1954 was characterized by serious price-cutting at the retail level.[175] This competition, although initially absorbed at the retail level, had an impact at the manufacturers' level because of the special discounts offered the dealer by the manufacturer. These special discounts approximated 5 per cent of the manufacturer's price.

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[172]Trade-ins are ". . . not only used as a sales tool by the retailer in price competition, but there exists a sizeable market for these used tires as bodies for retreads, for use on farm implements, and for resale of the least worn to purchasers of limited means." The Marketing of Rubber Tires and Tubes, op. cit., p. 5.

[173]See "The Marketing Pattern: A New Kind of Price Competition," Business Week (October 23, 1954), p. 50.

[174]Cf. Allen, op. cit., p. 209.

[175]Cf. "Seiberling 1954 Profit Off 79%; Replacement Tire Price War Blamed," The Wall Street Journal (February 21, 1955), p. 5.

For the period 1929-1937, the tire industry did not have a single price leader at the manufacturer's level.[176] Among the Big Four ". . . price changes are announced now by one firm and then by another."[177] However, the small firm, the follower, must act as though there were a single price leader with the exception that he must be sensitive to the actions of four or five firms, rather than one.

Thus, price competition is shifted between different levels, sellers and over time, with neither the wholesale base nor the published retail prices reflecting actual conditions. "Here is an industry in which most manufacturers and most dealers would like a uniformly maintained retail price, but apparently neither group wants it badly enough to risk serious competitive disadvantages."[178]

Yet some price collusion may exist in certain markets at different times, especially at the manufacturing level. On one occasion a suit for triple damages was filed under the Sherman Anti Trust Act against the Big Four and several of the smaller companies. The allegation was that the defendants had participated in a bidding ring. "The government contended that the defendants had submitted bids in four bid openings and

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[176] George J. Stigler, "The Kinky Oligopoly Demand Curve and Rigid Prices," Readings in Price Theory, George J. Stigler and Kenneth E. Boulding, eds., published for The American Economic Association (Homewood, Illinois: Richard D. Irwin, Inc., 1952), p. 429.

[177] Leigh, "Automotive Tires," op. cit., p. 125.

[178] W. C. Behoteguy, "Resale Price Maintenance in the Tire Industry," Journal of Marketing, XIII (January, 1949), p. 319.

that on all four occasions their bids were identical on more than 80 different types and sizes of tires."[179]

Some evidence exists indicating that "follow-the-leader" pricing is prevalent in the industry.[180] However, the presence of constant excess capacity and the changing shares of the market indicate that perfect collusion does not exist. That which does exist may actually force a greater emphasis upon nonprice methods of competition.

Nonprice Competition

Advertising. Although alliances among either the dealers or manufacturers could benefit the members of the alliance, ". . . the best known active attempts to bring these companies together have generally broken down."[181] Recently, however, ". . . there is evidence that at least a tacit alliance has existed among the companies to restrict their conflict to a limited number of areas and tactics."[182] Certain types of vicious price-cutting tactics have been eliminated and ". . . the quasi-

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[179]Wilcox, op. cit., p. 50. "The complaint was dismissed, however, on the ground that the government could not sue for triple damages, since it was not a 'person' within the meaning of Section 7 of the Sherman Act.

[180]Evidencing this is the statement that "Two more producers, Goodyear Tire & Rubber Company and General Tire & Rubber Company, last night announced tire price increases because of increasing costs of crude rubber and other factors. The increases were similar to those announced twenty-four hours earlier by B. F. Goodrich Company. . . . Other producers are expected to announce similar boosts." "Tire Prices Increased," The Lansing State Journal, February 15, 1955, p. 24.

[181]Gettell, op. cit., p. 140.

[182]Ibid., p. 145.

price[183] concessions made by manufacturers to dealers in the form of discounts or allowances have been restricted or standardized."[184]

Product differentiation, both real and psychological, has been adopted as the primary means of increasing competitive advantage without increasing the risks of price or quasi-price competition. To create brand prestige, to build a real or psuedo differentiation in the buyers' minds, the larger producers utilize extensive advertising campaigns. The smaller firms, for whom national advertising is not feasible, generally employ fairly complete cooperative advertising programs at the dealer level. In either event a price reduction equal to the unit cost of advertising would fail to exert a significant influence on buyers' preferences.

To a large extent, advertising is the major factor in maintaining the status quo in the organization of, and in limiting entry to, the industry. It was said in 1938, and is true today, that ". . . there are no apparent restrictions on entrance to the industry, but not a single new producer has gained a foothold during the past 15 years."[185] And the Big Four seem to owe their continuing domination of the industry to their advertising efforts. Some of the smaller firms have attempted to create a quality halo about their products. The intent is to identify quality and safety with price. Under such conditions, these firms avoid

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[183] A very real technique of this nature has been the ". . . progressive establishment of 'second,' 'third,' and even 'fourth' and 'fifth' line tires, and the sporadic jockeying of price and quality differentials among them. . . ." Ibid., p. 226.

[184] Ibid., p. 387.

[185] Reynolds, op. cit., p. 459. George J. Buyer, Confidential Bulletin 689 (November 22, 1954), p. 2, states that "with the exception of the Big Four, and possibly General Tire, the other smaller companies in normal peacetime years, merely exist."

competitive struggles and increase their profits by charging a higher price.[186] But such results are atypical. Without the ability to utilize national advertising (except a nominal amount as a sales approach to dealers) and thereby create "national" brands, a customary price differential exists between the advertised tires of the majors and the "unknown" tires of the smaller firms. The ability of advertisers to create national brand preferences depends upon the geographic extent of the distributive organization and the financial ability to pursue a long-run campaign. Since such efforts have caused the failure of several small manufacturers, the small firms tend to concentrate their efforts on one or a few large population centers.

Although most advertising is directed specifically toward the domestic buyer in the replacement market, not all costs of this effort are chargeable to that market. The merchandising costs and the demand thereby created affect significantly the ability of the various manufacturers to sell in the original equipment market. Furthermore, Firestone believes that in order to compete in the original equipment market, the firm must have ". . . a broad distribution set-up that will adequately serve the user during the life of the equipment and assure him a ready source of service and replacement."[187] Advertising helps maintain this widespread distribution.

Product innovation. A very important form of nonprice competition is product development. This includes improvement in either the composition or the design of the tire. These changes are usually exploited

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[186] General Tire is a case in point. See, for example, Parsons, op. cit., p. 76.

[187] The Marketing of Rubber Tires and Tubes, op. cit., p. 2.

by advertising with the intent of reducing dependence upon price as the focus for market rivalry.[188]

One firm publicized its development in tire composition (polygen), stating that the "Polygen" principle "is recognized as the most significant contribution of the last decade for improving the quality and extending the usefulness of man-made rubber. . . . In truck tires it outperformed natural rubber--something no other synthetic rubber ever did . . ."[189] Another firm, concerned with tire design, made the statement that it recognized ". . . the increasing demand for mud and snow tires by developing a new winter tire that solves the problem of hard riding and noise and provides white sidewalls to match front tires."[190] However, the concerted adoption of the various innovations has often been accomplished so quickly that difficulty is encountered in identifying the originator. This accounts for the low valuation of goodwill and patent accounts in the operating statements of the firms.

With the exception of the World War II period, where successful prosecution of the war required the exchange of technical knowledge, the rubber companies have been very secretive about research and development activities. In fact, since patenting requires that the innovation be made known, secrecy may be the most practical method of capitalizing on the benefits of discovery.

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[188] Maurer, op. cit., p. 123, states that Goodrich's marketing ". . . strategy did not center on price competition but instead on basic research, product development, and management organization within the company itself. . . ."

[189] General Tire and Rubber Company 1951 Annual Stockholder Report, General Tire and Rubber Company, Akron, Ohio, December 31, 1951, p. 9.

[190] United States Rubber Company 61st Annual Report, United States Rubber Company, New York, for the year ended December 21, 1952, p. 13.

The "tubeless" tire may be used as an example of rivalry in product innovation. Although Goodrich announced the first tubeless tire in 1947, ". . . much of the rubber industry saw it as a publicity stunt, a sales gimmick. . . . But they put their research and development people to work just the same."[191] Firestone was the second firm announcing tubeless tires, but encountered a patent suit raised by Goodrich.[192]

Goodrich also brought suit against U.S. Rubber, following closely the latter's announcement of a tubeless tire at a price approximating that for a standard-tire-and-tube combination. Both defendants, Firestone and U.S. Rubber, continued production, with most of the other tiremakers continuing experimentation, although some of them were already selling tubeless tires to their dealers on a test basis. But in July, 1954, Goodyear brought out its tubeless tire while, at the same time, Firestone announced that it was shipping large quantities of tubeless tires to three of the automobile manufacturers.[193]

In 1955, approximately 55 million tubeless tires were shipped to the original equipment and replacement markets and in 1955 there was a total market acceptance of 52 per cent of potential buyers in the

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[191]"Tubeless Tires," Business Week (May 22, 1954), p. 32.

[192]"B. F. Goodrich Company filed suit against the Firestone Tire & Rubber Company . . . charging Firestone with infringing Goodrich patents in the manufacture and sale of tubeless tires. . . . Goodrich asked in the suit that Firestone be enjoined against what it called 'further infringments' and asked also for damages. . . . Firestone's statement said that the latest suit was the third in which it 'has had the burden of defending itself against a series of patents which have no merit [e.g., Goodrich's pretensions that it originated the tubeless tire]'" Rubber Age, LXXIII (June, 1953), p. 383.

[193]"Putting the Tubeless Tire on the Road," Business Week (August 28, 1954), p. 60.

replacement market.[194] Seiberling, one of the smaller firms, introduced innovations to the tubeless tires in the form of an inner liner with leak-proof features, improved traction and a wider white-wall surface.

Product innovation, then, is a pervasive promotional activity within the industry, although the competitive advantage offered by the innovation is not long-lasting. To some extent the investment in research and product development competes with advertising allocations within the master budget. However, the two may be used as complementary sales activities in the marketing program. Advertising may be used to exploit a product development, while a product innovation may offer a unique sales appeal to be utilized in advertising.

General and Comparative Analyses of Operating Data

Introduction. Previous discussions have shown that the tire industry and its market are in a state of flux, to which the individual firms add the effects of their actions and to which each firm must adjust. The actions of these individual units as well as the sales response which each attains can be translated into financial terms. The cost patterns of each can be analyzed with certain judgments made concerning basic operating policies. Then these cost patterns can be analyzed in terms of revenue effects. The purpose of this section is to make such investigations.[195]

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[194] 10th Annual Passenger Car Tire Survey, op. cit., p. 4.

[195] Some of the operating data available does not pertain to current operations. However, if habit is important or if significant reliance is placed upon past experience in anticipating the future, considerable reference may be made to historical data by the decision-makers.

Nonadvertising data. Direct material costs per unit are 7 per cent higher for the small firms than for the large firms (see Table 14). In addition, direct labor costs per unit are approximately 15 per cent higher for the former than for the latter. This differential in labor costs exists in spite of the fact that wage rates are approximately 20 per cent higher in the Akron area (in the main, the site of the Big Four).

TABLE 14

REPLACEMENT RUBBER TIRES: MANUFACTURERS' AVERAGE* COSTS PER TIRE, 1943

Size 600-16 4-ply passenger-car tire (synthetic rubber)	Cost Per Tire		Percentage of Total Cost	
	10 manufacturers**	4 large manufacturers	10 manufacturers**	4 large manufacturers
Direct Material	$4.348	$4.048	50.3	44.3
Direct Labor	0.996	0.867	11.5	9.5
Net Waste	0.145	0.168	1.7	1.8
Factory Overhead	1.605	1.629	18.5	17.8
Total Factory Cost	7.094	6.712	82.0	73.4
Warehouse and Shipping Expense	0.092	0.224	1.1	2.4
Transportation	0.265	0.395	3.1	4.3
Adjustments***	0.260	0.231	3.0	2.5
Selling, General, and Administrative Expense	0.938	1.587	10.8	17.4
Total Cost	$8.649	$9.149	100.0	100.0

*Unweighted arithmetic average.
**These are the so-called "independents."
***Allowance for defective tires sold by trade.

Source: Survey of Rubber Tire and Tube Manufacturers Operating and Unit Cost Data, OPA Economic Data Series No. 10 (Washington, D.C.: Superintendent of Documents, U.S. Office of Temporary Controls, 1948), p. 5.

The lower material costs of the large firms can probably be explained by the preference given large firms in obtaining capital. This reduces the interest charges associated with their inventories. Furthermore, the greater functional differentiation in the management hierarchy required by the large firms enhances executive specialization. This should increase the efficiency of the performance of purchasing and inventory management.

However these factors hardly account for the great difference found in the direct labor costs. Nor does greater mechanization appear to offer a complete explanation, since factory overhead per unit (one measure of mechanization) is only 1 per cent higher for the majors than for the independents. A better explanation appears to lie in the transference of burden or cost from one phase of production to another. Greater leveling of production, which results in a more effective employment of direct labor, may result in an increased burden upon warehousing and shipping activities. This explanation is supported by the fact that warehousing and shipping expense for the small firms is approximately 40 per cent of that for the large firms.

Nevertheless, the comparative advantage of the large firms is not completely offset by the higher warehousing and shipping expense. The per-unit total factory cost, plus warehousing and shipping expense, is 3.6 per cent higher for the independents than for the Big Four. ($7.186 per unit as compared to $6.936.) This difference exists even though the total cost per unit for the large firms is nearly 7 per cent higher than for the small firms. ($9.149 per unit compared to $8.649.)

Part of the difference in total unit cost is accounted for by the fact that unit transportation expenses for the Big Four are approximately

50 per cent higher than for the small firms. This reflects the efforts of the Big Four to meet the entire national market with their distributive systems. As such, the average transportation costs will be larger than for those firms distributing to local or regional markets.

Because of the more liberal returns-and-allowance policy of the small firms, their adjustments are about 12 per cent higher than for the large firms.[196] This differential in the adjustments may be premiums offered dealers for handling lesser known brands. A more liberal returns-and-adjustment policy may be viewed as a cost to the small firms for not expending greater advertising efforts.

As a per-unit cost item, selling, general, and administrative expenses for the larger firms are nearly 70 per cent higher than for the small firms. However, when these costs are expressed as a percentage of net sales, the ratios are approximately the same: 8.1 per cent for the larger and 8.2 per cent for the small companies (see Table 15). Therefore, some premium (possibly a higher price) exists in the total sales figure which offsets the higher costs for the large firms.[197] This premium may be obtainable because of the extensive advertising and merchandising efforts of the large firms.

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[196] The difference may also be accounted for by the higher "waste" cost of the Big Four. They may scrap a larger proportion of defective tires at the manufacturing site, rather than adjusting for them in the trade channel.

[197] A partial explanation may also be that the ratio as a percentage of cost was computed from data pertaining only to replacement tires, while the ratio as a percentage of net sales was computed from data pertaining to all tires and tubes when it was expressed as a percentage of net sales. Note also that the former computations are for the year 1943, while the latter are for 1945.

TABLE 15

ALL RUBBER TIRES AND TUBES: COMBINED DEPARTMENTAL OPERATING STATEMENT, 1945

Accounting Sheet Item	Percentage of Net Sales	
	13 Manufacturers*	4 Large Manufacturers**
Net Sales	100.0	100.0
Cost of Goods Sold	83.3	81.7
Gross Profit	16.7	18.3
Operating Expenses:		
Advertising and Publicity	2.0	1.9
Other Selling Expense	3.7	4.5
General and Administrative Expense	2.5	1.7
Other Operating Expense***	0.9	0.7
Total	9.1	8.8
Net Operating Profit	7.6	9.5

*These 13 manufacturers, the so-called "independents," produced approximately 19 per cent of all rubber tires in 1945.
**These manufacturers produced approximately 76 per cent of all tires and tubes in 1945.
***In most cases, this category includes warehouse, shipping, and freight.

Source: Survey of Rubber Tire and Tube Manufacturers Operating and Unit Cost Data, OPA Economic Data Series No. 10 (Washington, D.C.: Superintendent of Documents, U.S. Office of Temporary Controls), p. 2.

The same conclusions can be reached from a different analysis. Net income as a percentage of total asset value (1955, unweighted average) for the Big Four was 56 per cent higher than for the small firms. This

difference exists in spite of the fact that asset-turnover in terms of dollar-sales activity was highest for the small firms (see Table 16).[198]

TABLE 16

OPERATING RATIOS OF SELECTED TIRE MANUFACTURERS, 1955

Company*	Net Income as a Per Cent of Total Assets	Ratio of Net Sales to Total Assets	Ratio of Selling-and-Administrative Expense to Net Income
Goodyear	7.6	1.74	2.97
Firestone	8.7	1.75	2.54
U.S. Rubber	5.8	1.61	3.15
Goodrich	9.2	1.49	2.09
Unweighted Average, Four Largest Firms	7.8	1.65	2.94
Mansfield	5.8	2.43	2.74
Dayton	5.8	1.73	3.08
Seiberling	4.7	1.90	5.81
Lee	5.9	1.67	4.27
Cooper	4.3	2.53	8.03
Unweighted Average, Five Small Firms	5.3	2.06	4.78

*Listed in order of 1955 sales.

Source: Moody's Industrials (New York: Moody's Investors Service, 1956), pp. 116, 133, 175, 712, 898, 903, 1506, 1978, 2646, and 2700.

The difference in the net profit productivity of the assets cannot be explained by a lower total cost per unit for the Big Four than for the smaller firms, because the opposite is true. The explanation lies in

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[198]Note that the accounting procedures for the different firms will vary and that tire sales will constitute different proportions of sales for each of the firms. Either of these factors limits the validity of any conclusions derived from a comparison of the data.

part with the lower per-unit factory cost (greater manufacturing efficiency) for the large firms. In the main, however, the greater net-profit productivity is derived from the marketing and administrative efforts.[199] In absolute terms, general, selling, and administrative expenses are higher for the Big Four, but when these expenses are expressed as a percentage of net revenue (1955, unweighted average) they are approximately one-half that of the independents. Such expenses are only 2.9 times the net revenue for the Big Four, but 4.78 times the net revenue for the independents.

Therefore, the statement made by Reynolds in 1938 appears to hold true today. He stated that the consumer preference resulting from the advertising of the Big Four ". . . enables them to sell their tires for from 10 to 20 per cent more than the small producers receive for tires of equal quality. The selling expenditures of the large firms . . . have raised both their cost and demand curves so that their equilibrium price is relatively high."[200]

The dominant sales and financial condition of the Big Four places them in a preferential position for using advertising. In an absolute sense, they are tremendously superior financially. A million-dollar advertising program, for example, would approximate 7 per cent of gross sales for Cooper, 13 per cent of selling and administrative expense for Lee, but only 0.12 per cent of sales for Goodyear. Goodrich, the smallest of the Big Four, for example, has a working capital approximately

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[199]Considerable discretion should be exercised in the use of this standard. All inputs and their costs affect profits. Moreover, one company may be expanding its markets, and thus some proportion of the costs should be allocated to future fiscal periods.

[200]Reynolds, op. cit., p. 466.

four times that of General, the next largest in sales (see Table 17). The mere size of the selling and administrative budget of the large firms (approximately $140 million for Firestone compared to approximately $5.5 million for Mansfield) permits the purchase of better talent than that of the small firms.

TABLE 17

PROFIT-AND-LOSS AND BALANCE SHEET ITEMS FOR SELECTED TIRE MANUFACTURERS, 1955
(Millions of dollars)

Firm	Working Capital	Net Worth	Selling and Administrative Expense	Net Profit
Goodyear	$460.6	$469.4	$177.3	$59.7
Firestone	308.2	399.8	140.5	55.4
U.S. Rubber	259.8	273.4	105.8	33.6
Goodrich	241.1	348.8	97.6	46.7
General	52.4	91.8	26.6	9.7
Mansfield	12.2	17.3	5.5	1.8
Dayton	16.2	18.1	12.6	2.3
Seiberling	10.4	14.7	6.6	1.1
Lee	18.1	25.0	7.5	1.8
Cooper	1.8	3.3	3.2	0.4
Mohawk	3.2	5.3	*	0.3
Corduroy	1.3	3.6	0.7	0.3

*Information not classified on this basis.

Source: Moody's Industrials (New York: Moody's Investors Service, 1956), pp. 116, 133, 175, 712, 898, 903, 1506, 1978, 2646, and 2700.

Advertising and other selling-cost data. As a percentage of net sales, the selling and administrative expense is similar for the small

and large firms.[201] But the Big Four dominate the industry's selling efforts. Of the 17 firms responding to the government study,[202] the four largest firms accounted for approximately 75 per cent of the combined selling expenditures of all the manufacturers of replacement tires and tubes. Moreover, the large firms expend a total of approximately five times as much as the small firms, or 79.3 per cent of the industry's efforts, for selling efforts other than advertising.

According to Frey, the percentage of gross sales typically expended on advertising in 1954 was 1.9 per cent.[203] Sandage and Bernstein[204] state that, according to their findings based upon a sample of six firms, advertising expenditures as a per cent of sales were 1.00 per cent or less for one firm; 1.01 to 2.50 per cent for three firms; and 2.51 to 5.00 per cent for two firms. These figures compare favorably with industry data for 1942 and 1945 (see Table 18).[205]

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[201] In 1955, these percentages were: Goodyear (13.0), Firestone (12.6), U.S. Rubber (11.4), Goodrich (12.9), General (9.3), Mansfield (7.3), Dayton (18.2), Seiberling (14.3), Lee (16.3), Cooper (13.6), and Corduroy (10.1). Note that these figures include administrative as well as selling expense. Total selling expense as a per cent of net sales was, in 1945, for the Big Four (11.2 per cent) and for the other 13 manufacturers (8.2 per cent). Survey of Rubber Tire and Tube Manufacturers, op. cit., p. 2.

[202] Ibid., p. 31.

[203] Albert W. Frey, How Many Dollars for Advertising (New York: The Ronald Press Company, 1955), p. 74.

[204] C. H. Sandage and S. R. Bernstein, "University of Illinois and Advertising Age Jointly Sponsored Study of Advertising as Per Cent of Sales," a reprint of a six-page gatefold insert, Advertising Age, 1956, p. 6.

[205] In 1939, for the rubber products industry, advertising expenses accounted for approximately 15 per cent of the total distribution costs and 2.07 per cent of net sales. Federal Trade Commission, Distribution Methods and Costs, "Advertising as a Factor in Distribution," Part V, Federal Trade Commission (Washington, D.C.: U.S. Government Printing Office, 1944), p. 6.

TABLE 18

ADVERTISING AND PUBLICITY EXPENDITURES AS A PERCENTAGE OF NET SALES, TOTAL SELLING COSTS, AND TOTAL OPERATING EXPENSES FOR REPLACEMENT TIRES, 1942 AND 1945

Total Advertising and Publicity Expense as a Per Cent of:	4 Largest Manufacturers		13 Other Manufacturers		Unweighted Average
	1942	1945	1942	1945	
Net Sales	2.4%	3.0%	1.1%	2.6%	2.3%
Total Operating Expense	13.9	21.4	8.7	21.7	16.4
All Selling Expenses	20.2	26.9	12.7	32.7	23.1

Source: Survey of Rubber Tire and Tube Manufacturers Operating and Unit Cost Data, OPA Economic Data Series No. 10 (Washington, D.C.: Superintendent of Documents, U.S. Office of Temporary Controls), pp. 2 and 5.

Industry data, for the years 1942 and 1945, indicate that advertising and publicity costs are (as an unweighted average) approximately 2.3 per cent of net sales, 16 per cent of total (nonfactory) operating expenses, and slightly more than 23 per cent of all selling expenses.

National advertising accounts for 20-25 per cent of the total advertising of the industry. In total, the small firms do little national advertising because of their limited markets. Magazines are the predominant national medium used by the latter. However, both the large and the small firms use cooperative advertising.[206] The allocation of the advertising

[206] Cooperative plans were extended to two types of dealers, wholesalers and retailers. The type of cooperative aid extended to the dealers, according to number of "mentions," were as follows: (1) supplied printed advertising matter, (2) assisted in the preparation of merchandise displays, (3) assisted in the preparation of local advertising, (4) reimbursed for a part or all of the cost of local (dealer) advertising. Distribution Methods and Costs, op. cit., p. 24.

appropriation for the rubber products industry in 1939 is shown in Table 19.[207]

TABLE 19

RUBBER PRODUCTS MANUFACTURERS' ALLOCATION OF ADVERTISING APPROPRIATION (BY MEDIA)

Advertising Media Used	Per Cent
National Magazines	24.7
Joint Advertising with Dealers	16.7
Letters, Folders, etc (for dealers)	15.4
Radio	7.0
Newspapers	6.9
Letters, Folders, etc. (mailed)	6.6
Outdoor Posters	3.1
Trade Journals	1.8
Other Forms of Advertising	17.8
Total	100.0

Source: Distribution Methods and Costs, Part V, "Advertising as a Factor in Distribution," Federal Trade Commission (Washington, D.C.: U.S. Government Printing Office, 1944), p. 6.

In cooperative advertising programs, dealers expend some of their own funds for advertising.[208] Where these dealers are not fully reimbursed, the allocations not refunded would supplement the advertising efforts of the rubber fabricators, and thus increase the total advertising for the industry's products.

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[207]The sample discloses the operations of tire and tube manufacturers, since it includes all but one of the five largest and two-thirds of all the smaller tire producers. Since television was not available, it was not included in the budgets of 1939. Even today, however, the television medium is not applicable in most instances to the smaller tire producers. Similarly, in 1939, only one out of four manufacturers utilized radio as a disseminating agent. Ibid., p. 5.

[208]Dealer expenditures for advertising, in 1939, as a per cent of net sales were 0.60 per cent for wholesalers and .0125 per cent for retailers. Ibid., p. 24.

Advertising of the Big Four accounts for at least 85 per cent of the total industry national-media advertising, with General (the fifth largest) doing another 6.7 per cent. Therefore, the top five firms do more than 90 per cent of the national advertising of the industry.[209] The allocation of the budget for these top five firms, by media, is as presented in Table 20.

TABLE 20

PERCENTAGE ALLOCATION BY MEDIUM OF NATIONAL ADVERTISING EXPENDITURES FOR THE FIVE LARGEST TIRE MANUFACTURERS, 1955

Firm	Magazine	Newspaper	TV Network	Business Paper	Radio Network	Other*
Goodyear	45.6%	20.0%	21.0%	6.9%	3.2%	3.3%
Firestone	32.3	21.4	25.2	2.5	14.2	4.4**
Goodrich	36.7	16.5	21.7	20.5	1.2	3.4**
U.S. Rubber	39.3	17.1	1.6	32.5	0.0	9.5
General	30.0	3.0	2.1	4.5	18.3	39.2***
All Five	37.9%	17.3%	17.3%	10.9%	6.7%	9.9%

*Includes, as a total for all five firms: Sunday magazine section (1.5%), farm publications (3.2%), and outdoor advertising (5.2%).
**All of this was allocated to farm publications.
***All of this was allocated to outdoor advertising.

Source: "Advertisers' Guide to Marketing for 1957," Printers' Ink, CLVI (August 24, 1945), pp. 76-100.

National media expenditures, as a percentage of net sales and as a percentage of selling and administrative expense, for the large firms were similar to those of the small firms. Yet, when expressed as a

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[209]This total for the top five firms was $27,851,220 in 1955, which was a 40.3 per cent increase over 1951. "Advertisers' Guide to Marketing for 1957," Printers' Ink, CLVI (August 24, 1956), p. 76.

percentage of profit, the proportion (as an unweighted average) is much greater for the small firms. (See Table 21).

TABLE 21

NATIONAL ADVERTISING APPROPRIATIONS AS A PERCENTAGE OF VARIOUS OPERATING CATEGORIES, SELECTED TIRE COMPANIES, 1953

Company	Per Cent of Net Sales	Per Cent of Selling & Administrative Expense	Per Cent of Net Profit
Goodyear	0.53	4.6	12.9
Firestone	0.40	3.0	8.9
U.S. Rubber	0.23	2.0	5.7
Goodrich	0.41	3.4	7.5
General	0.51	5.5	14.3
Unweighted Average, 5 Largest Firms	0.40	3.7	8.7
Armstrong	0.63	6.9	23.2
Mansfield	0.20	2.2	13.0
Lee	0.40	2.6	10.8
Seiberling	0.75	5.0	30.1
Cooper	0.17	2.8	9.5
Unweighted Average, 5 Small Firms	0.44	3.8	16.7

Source: The advertising-expenditure data were collected and presented by an advertising agency for one of the tire manufacturers, and were entitled, "Advertising Investments by Tire Companies in 1953, Passenger, Truck-Bus, Tractor," 1954. The names of the agency and the client are held in confidence. The other operating items were taken from Moody's Industrials (New York: Moody's Investors Service, 1954), pp. 200, 219, 818, 902, 1052, 1407, 2080, 2273, and 2589.

Although none of the firms in the industry was included in the 100 largest national newspaper advertisers in 1950,[210] sizeable appropriations in that medium were utilized by these five largest firms. (See Table 22).

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[210] "National Advertisers' 1950 Investment in Newspapers," Printers' Ink, CCXXXV (June 29, 1951), p. 35.

Of the total advertising appropriations, approximately 90 per cent of the combined budgets was spent on tires and tubes (as contrasted to institutional or other products advertising). This was the case even for the firms having considerably less than 75 per cent of their sales in tires and tubes.

TABLE 22

NATIONAL NEWSPAPER ADVERTISING EXPENDITURES FOR THE FIVE LARGEST TIRE MANUFACTURERS, BY PRODUCT, 1950

Firm	Product	Expenditures	
		Tire	Nontire
General	General Tire	$ 115,501	
Goodrich	Goodrich Tires	288.535	
	Hood Rubber Company	90,734	
	Miller Imperial Tires	2,055	
	Institutional		$ 29,520
Goodyear	Lifeguard Safety Tube	2,383	
	Tires	645,222	
	Institutional		4,592
Firestone	Tires	142,312	
	Institutional		56,728
	Products		8,526
U.S. Rubber	Fisk Tires	18,933	
	Golf Balls		1,643
	U.S. Royal Tires	1,086,683	
	Products		186,630
Total		$2,392,563	$287,649

Source: "National Advertisers' 1950 Investment in Newspapers," Printers' Ink, CCXXXV (June 29, 1951), pp. 35-65.

Any expenditures for nontire products will compete with tire-advertising for dollars in the budget. To some extent, sales promotion given the other products, however, may facilitate the advertising of tires and tubes because certain advertising media (e.g., national networks) will be feasible for mixed-product advertising where a single product could not support such a high cost. In addition, the messages of the nontire advertisements may create a favorable association and extend further the impact of tire-advertising.

The structure of the industry and its policies, the operating characteristics, the relationships with the external environment, and the traditions and attitudes of its members determine the purpose and role of advertising in the tire industry. For example, the presence of follow-the-leader pricing, the importance of the tire industry in war-time, and the interdependence between the original equipment and replacement markets have influenced advertising practices. Knowledge concerning these factors is prerequisite to understanding the determinants and nature of the decision associated with the advertising appropriation. To fulfill this purpose, the preceding analysis has been offered.

CHAPTER V

RESULTS OF THE QUESTIONNAIRE AND INTERVIEWS CONCERNING THE ADVERTISING APPROPRIATION DECISION IN THE RUBBER TIRE INDUSTRY

Introduction

Purpose. The second and third chapters of this study suggested certain general characteristics and determinants of the appropriation decision. The third chapter analyzed the nature, market characteristics, and advertising efforts of the rubber tire industry. This latter analysis presented, in a manner more definitive than the theoretical hypotheses, the alternative formulations available to the decision-maker.[1] This chapter presents and analyzes the data obtained directly from advertising managers and their immediate associates in the industry.

Nature and source of the data. The empirical data were obtained from two sources: (1) personal interviews, and (2) a questionnaire. The titles of the interviewees are shown in Table 23 and a classification of respondents to the questionnaire is presented in Table 24.

The firms selected for interviewing were chosen so as to cover almost the complete range of sizes in the industry.[2] The basis for selecting the individual interviewees had to do with their proximity to the appropriation decision. The interviewee was involved directly with the

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[1] The data presented in Chapter IV, obtained from secondary sources, can be compared to the information obtained from primary sources. Certain judgments can then be made concerning the accuracy of the latter.

[2] A willingness to participate in the study is implied. The respondents of one firm were specifically chosen because of their refusal to answer the questionnaire.

development or review of the appropriation, or he was directly accountable to an executive so involved.

TABLE 23

TITLES OF THE INTERVIEWEES WHOSE RESPONSES ARE INCORPORATED IN THE EMPIRICAL DATA, BY FIRM (PSEUDONYM)*

Interviewee** (Title)	Pseudonym and Industry Rank (Range)***			
	Magnum 1-3	Avarie 3-5	Lytle 6-9	Tyre 9-14
Sales Manager	X			X
Director of Advertising and Sales Promotion	X	X		
Advertising Manager		X		X
Assistant Advertising Manager	X		X	
Assistant Sales Promotion Manager		X		
Manager of Market Research	X			X
Accountant			X	X

*In all cases the interviewees were promised anonymity. To respect their confidence, pseudonyms are used.

**These are only approximate titles. For example, Advertising Manager might refer to the Director of Advertising. Identification of a firm might be disclosed by a presentation of its size and various officers' titles.

***To further protect the respondents' confidences, industry position is not offered as a specific rank, but as a range.

The interviews were patterned and open-ended for the first three firms in the table above. For the Tyre Company the interviews were not patterned, but were directed so as to gain specific operating data. Therefore, the information obtained from the Tyre Company deals primarily with specific details of the advertising appropriation and the budgeting process.

The questionnaire was mailed to all advertising executives of domestic tire manufacturers.[3] Of the eighteen questionnaires mailed, thirteen acceptable responses were received.[4] The respondents, classified by title, are presented in Table 24.

TABLE 24

NUMBER OF RESPONDENTS TO THE QUESTIONNAIRE WHOSE ANSWERS ARE INCORPORATED IN THE EMPIRICAL DATA, BY TITLE

Respondents' Titles	Number of Respondents
Advertising Manager (Director of Advertising)	4
Advertising and Sales Promotion Manager (Director of Advertising and Sales Promotion or Advertising and Merchandising)	4
Sales and Advertising Manager	1
Special Assistant to Director of Marketing	1
General Sales Manager	1
Title Not Given	2
Total	13

The addressee of the questionnaire was the highest executive in the management hierarchy whose principal responsibility was advertising. Some of the addressees delegated the responsibility for answering the

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[3] For a complete analysis of the universe, respondents, and statistical technique, see Appendix B.

[4] Three addressees failed to meet the criteria of the study: one was a foreign-owned subsidiary; the other two employed no consumer advertising. Two other addressees did not respond: one was associated with a firm so highly decentralized that he felt it "next to impossible to try to pull the information together." The other addressee stated that the magnitude of the task associated with the questionnaire, the qualifications involved, and the confidential nature of the data requested would not permit him to answer the questionnaire. The latter, however, participated in the interviews.

questionnaire to the subordinate most closely concerned with the mechanics of developing the appropriation.[5]

Method of presentation. To make the presentation of the empirical data manageable, two chapters are devoted to the results of the questionnaire and interviews. The chapter following deals with relationships among answers to the questionnaire.

This present chapter treats typical or representative responses. Here, the data obtained from the interviews are interwoven with those obtained from the questionnaire. The interview data supplement the latter by offering possible explanations for representative as well as atypical responses to the questionnaire. The material in this chapter is divided into six sections and presented in the following order: (1) the organizational aspects of the firm, (2) characteristics of the decision process, (3) personnel involved in the decision, (4) the objective and productivity of advertising, (5) the elements and construction of the appropriation, and (6) selected decision standards or appropriation determinants.

Organizational Aspects of the Firm

Structural features. According to the interviewees, the formal task assigned to the advertising manager was typically considered as involving two distinct sets of activities: (1) those associated with the technical aspects of the function, i.e., preparing and disseminating advertising for the purpose of stimulating sales; and (2) those relating to the administrative aspects of the task, i.e., coordinating operations and

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[5]Such responses will be included with those of the other "advertising managers." The subordinate was answering for the superior and, in all likelihood, the latter reviewed the answers.

personnel within the advertising department. The Director of Advertising at Magnum, for example, stated that the objectives of the department head were: "(1) to maintain preference in the field, and (2) to provide direction for . . . [a certain number of] personnel."[6]

The title of the chief advertising executive for the Tyre Company is Advertising and Sales Promotion Manager. He is responsible for developing and proposing the appropriation request. He reports directly to the Vice President in Charge of Sales, whose superior is the President of the firm. In this capacity, the Advertising Manager coordinates with three operating sales managers.[7] With no assistant, he is third from the top level of the management hierarchy.

The advertising manager is most often found at this third level. Two advertising managers, as shown in Table 25, report directly to the presidents of their firms, and not more than four lower than the third level. Generally, the immediate superior of the advertising manager is the vice president in charge of sales. Therefore, as in the case of the Tyre Company, advertising decisions would appear to be closely coordinated with other marketing decisions through direct accountability to the same superior.

In Magnum, the Assistant Advertising Manager is most intimately concerned with the mechanics of developing the appropriation proposal. He is four levels below the President. This Assistant administers the

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[6]The Sales Promotion Manager at Magnum stated that the objective of the advertising department head is: "first, to promote the general line of products, and second, to correlate [administer the employment of advertising in] all divisions in order to make a profit."

[7]The divisions for which these managers are accountable are: (1) camelback and repair material, (2) field sales, and (3) private brands and original equipment.

budget and prepares the budget request. In both Avarie and Lytle the executive primarily responsible for the preparation of the budget is in the fourth level of the management hierarchy.

TABLE 25

TITLE OF THE ADVERTISING MANAGER'S IMMEDIATE SUPERIOR BY NUMBER OF RESPONDENTS*

Title of Immediate Superior**	Number of Respondents
President	2
Vice President of Sales (or merely Vice President)	5
Sales Manager (or General Sales Manager)	2
Assistant General Sales Manager	1
Director of Advertising	1
Title Not Given	2
Total	13

*Data for this table were obtained from the industry questionnaire.
**Listed in order of assumed rank in the management hierarchy. Some arbitrariness is involved in classifying and ranking the titles.

It appears that considerable delegation and fractionalization of authority for decision-making has occurred. To counteract this, review and supervision is performed. The Manager at Magnum, for example, reviews the request with the Assistant Manager and approves the revised budget before it is sent to an executive committee. Furthermore, the advertising executives typically are accountable to a superior who is also in charge of other marketing managers. In these ways intra- and interdepartmental coordination is attempted.

Control of expenditures and performance criteria. As would be expected, the smaller the firm the less fractionalization and diffusion of decision-making has occurred. For both large and small firms,

the real authority of the advertising manager appears to be severely restricted. For both Magnum and Avarie the discretion of the advertising manager is limited by a general rule of thumb, expressed as a percentage of sales.[8] According to his assistant, the Lytle Advertising Manager has "minor authority in connection with the more 'discretionary' expenditures [of the advertising appropriation] but has considerable authority with respect to the items considered a necessity."

Interviewees for both Lytle and Avarie stated that top management maintains fairly strict control over advertising expenditures. The Advertising Manager thought the purpose of such control was to "see that the advertising department did not run away with expenditures." In contrast, the opinion at Magnum was that detailed and specific control is not exercised because of "the manager's practice of never requesting revisions or extensions of the budget." Although detailed control is not performed continuously at Magnum, "no one ever accidentally exceeds the budget, and a quarterly review is held with the appropriation adjusted in the light of this review."

The Magnum case does not appear to be typical of industry practice. Only four of the thirteen respondents to the questionnaire answered that little supervision of advertising expenditures is given by top management after the budget is approved. As shown in the responses to the questionnaire, top management in a majority of the firms does maintain fairly strict control of the expenditures during the fiscal period.

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[8] The Assistant Manager for Magnum stated: "The executive committee does not require that the manager justify each expenditure, if the total request lies within some general percent-of-sales limits."

Question #8-b: After the advertising budget is approved, little review or supervision of the advertising expenditure is given by top management in your firm.

True	2	More false than true . .	4
More true than false . .	2	False	5
	4		9
		Total responses	13

Apparently too, the Magnum case is not typical of industry practice concerning the rigidity with which the limits of the appropriation are viewed. Only six of the thirteen respondents to the questionnaire stated that it was a mark of success if the advertising manager did not spend more than the amount appropriated for his function.

Question #8-c: In the eyes of top management of your firm, it is a mark of success if the advertising manager does not spend more than the amount that has been appropriated for advertising.

True	0	More false than true . .	3
More true than false . .	6	False	4
	6		7
		Total responses	13

Because of the formal fractionalization of authority within the firms, the institutional objective must be interpreted in terms of performance standards for the advertising function. From the findings above, meeting budget restrictions does not appear to be the primary measure by which the advertising manager is judged. The respondents[9] substantiated this when asked to rank the performance standards of the advertising manager that top management employs. Although meeting

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[9]To insure the distinction between the results of the questionnaire and those of the interview, the term respondents will refer to the former while interviewees refers to the latter.

budget restrictions was ranked second, the sales response obtained was ranked as first choice[10] as shown below.[11]

Question #7: The following are standards which might be used for judging the advertising manager. Rank in order of importance according to the reliance which top management placed upon them.

Standards	Number of Responses by Rank 1st	2nd	3rd	4th	Corrected Composite Index	Average Rank
a. Keeping within the budget	0	8	1	1	27	2
b. Sales response obtained	13	0	0	0	40	1
c. "Rubber-stamping" decisions of top management	0	1	6	3	18	3
d. Maintaining harmonious relations in the advertising department	0	1	3	6	15	4
Total responses	13	10	10	10		
Answers which were merely checked rather than given complete rankings	0	3	3	3		
Total	13	13	13	13		

If these executives respond in terms of the standards by which they are judged, behavior is directed primarily toward the externally-oriented

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[10] No explicit mention is made of the cardinal differences between the composite indices. Nevertheless, the reader may wish to examine them.

[11] The index in this statistic is found by: (1) summing the responses to the individual factors by rank; (2) multiplying this total by a weighting factor which is an inverse number of its position in the series of possible rankings (e.g., if a rank of fourth is assigned, the weight is one); and, (3) adding these totals across all responses for each factor. Eight respondents ranked (a) as 2nd choice. Since there were four possible choices in this array, the weight attached to a 2nd choice is 3. Thus, 8 x 3 equals 24. Adding one 3rd choice (1 x 2) and one 4th choice (1 x 1) to 24, the index for (a) is 27. The index was corrected to include only those responses which were complete.

objective, i.e., stimulating sales. The second objective of the advertising manager--integrating activities and personnel within the department--received a relatively low ranking: According to the respondents, of all the standards presented, top management places the least emphasis upon the need to maintain harmonious relations within the department.[12]

Communication. One of the problems created by particularizing decision-making authority in a firm is the difficulty of communication among the departments. The interviews show that almost constant communication exists between advertising and other marketing activities. A Magnum executive stated: "We live in each others' laps." Apparently, this communication includes some information flowing from, as well as to, the advertising department. The Lytle Assistant Advertising Manager stated that the Advertising Manager contributes both advice and approval to sales and pricing decisions.[13]

In contrast, the interviewees typically stated that little direct intercommunication exists between the advertising department and non-marketing areas. With the exception of Magnum, little formal communication occurs between finance and advertising. Magnum, on the other hand, has established a unique accounting section which deals solely with advertising data.

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[12]It might be expected that the relative reliance which top management places upon these standards depends upon the duration of the time period involved. Sales response may be a long-run consideration while adherence to the budget may be a short-run standard. In either event, the reactions of the executives to these performance criteria will be expected to vary according to the differing weights attached to them. The possibility of varying responses will be examined more fully in the following chapter.

[13]The Lytle Accountant said that this was not the case.

Although the interviewees at Avarie did state that some informal communication exists, formal communication does not appear to occur directly between advertising and production or engineering. The majority opinion was that the advertising manager does not contribute to output and capital-expenditure decisions, although he might deal with special problems, e.g., new products. Integration, accomplished by direct communication, takes place through a committee of top executives which does not include the advertising manager.

The respondents answered that they would make decisions in spite of incomplete information. The results, taken from the questionnaire and presented below, show that nine of eleven respondents stated that they would use data which was incomplete rather than not use the information.

Question #4-b: In decision-making, would you use information which you consider to be incomplete rather than not use that information at all?

Yes	9	No response	1
No	2	Yes-and-no answer	1
	11		2
Total acceptable responses	11	Total	13

On the other hand, any information that is available appears to be communicated to the advertising department. Ten of the thirteen respondents to the questionnaire stated that it was true (or more true than false) that the same information is made available to the advertising manager as is available for sales decisions.[14]

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[14]The explanation for the minority response may lie in the fact that advertising is only one phase of the marketing function.

Question #8-d: In your firm, the same information is made available to the advertising manager as is available for sales decisions.

True	7	More false than true . .	3
More true than false . .	3	False	0
	10		3
		Total responses	13

Characteristics of the Decision Process

Purpose of the budget. Both the internal features of the firm and its market characteristics determine the decision standards and the characteristics of the decision-process as well. The properties of the decision-process, in turn, affect the decision standards. This section examines certain aspects of the decision-process.

The first of these has to do with the purpose of establishing a definite appropriation. In this respect, the thought and planning which are required in formulating the budget were ranked first. The second choice[15] was that a definite appropriation makes available to top management an evaluation or control instrument, while the use of the budget as an operating goal was ranked third (see findings below).

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[15]The cardinal difference between the second and third choices was very small.

Question #2: The following are possible reasons for establishing a definite appropriation in your firm. Rank in order of importance.

Purpose	Rankings 1st	2nd	3rd	Corrected Composite Index	Average Rank
a) Makes for considerable thought and planning before the final decision	7	3	2	29	1
b) Makes available to top management an evaluation or control instrument	4	4	5	22	2
c) Provides a target toward which the advertising department may aim	2	5	5	21	3
Total responses	13	12	12		
Merely checked, did not rank		1	1		
Total	13	13	13		

Signal for the decision. Seven of the respondents answered that the signal for the decision is given according to some calendar date. They stated that the appropriation decision is made because of the arrival of some pre-determined planning date rather than made concurrently with other basic marketing decisions.[16] The other six stated that such was not the case.

Question #4-a: Are decisions with respect to the advertising appropriation made because of the arrival of some predetermined planning date rather than made concurrently with basic decisions concerning other marketing activities?

Yes	7
No	6
Total responses	13

[16]The fact that advertising decisions are made concurrently with other sales decisions does not preclude the possibility that all such decisions are made according to some previously established date.

In the Tyre Company, the Advertising Manager commences his preparations of the budget in late November or early December and presents the original request late in December. The 1955 budget, however, was not approved until early in March. The period between the first of the year, the effective date of the appropriation, and the approval date appears to be a trial period wherein expectations are revised and adjustments are made in all budgets.

Although the budget for Magnum does not take effect until the first of the year, preliminary planning with respect to forthcoming sales efforts is begun in July. This tentative planning is continued until October. At this time the sales estimates are firmly established and the various expenditures are anticipated.

Sensitivity and flexibility of the process. The process appears to be fairly standardized and formalized. Six of the thirteen respondents stated that the process was well standardized and expressed in a policy statement or manual. In contrast, only two of the thirteen respondents stated that the process was not standardized and was, in the main, different each planning period. These data are shown below.

Question #1: Which of the following statements best describes the method which your firm uses in determining the advertising appropriation? The method is:

Choice	Selection
a) Well standardized and expressed in a policy statement or manual	6
b) Semi-standardized and may vary from time to time and is not expressed in written form	5
c) Not standardized and, in the main, is different each planning period	2
Total responses	13

Sensitivity, in the sense of budget revision, varied among the firms. Three of the ten respondents thought it would be worthwhile to revise the appropriation where the change would involve an adjustment in the total current appropriation of less than 3 per cent. On the other hand, three of them stated that the adjustment would have to constitute more than 10 per cent of the current total appropriation. The remaining four responses were divided evenly between 3 to 5 per cent and 6 to 10 per cent (see below).

Question #5: At what point would you think it worthwhile to revise, during some fiscal period, the advertising appropriation? Where the change would involve the adjustment in the current appropriation of:

a) Less than 3 per cent	3	Total acceptable responses	10
b) 3 per cent to 5 per cent	2	Response in terms of proportion of fiscal year	1
c) 6 per cent to 10 per cent	2	No response	2
d) More than 10 per cent	3	Total	13

Possibly those firms with low sensitivity have an appropriation with built-in flexibility--a reserve. Twelve of the thirteen respondents stated that their company did not establish a definite reserve but that additional funds were available for reasonable requests. Only one of the respondents stated that no reserves were available. Therefore, some intra-fiscal flexibility can be imputed to the appropriation.[17] These responses are presented below.

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[17]The problem remains whether this flexibility merely relates to appropriation increases as contrasted to decreases.

Question #3: Which of the following best reflects your company's attitude toward advertising reserves?

Choice	Selection
a) No reserves: The advertising department must live within the budget as originally determined	1
b) No definite reserves but additional funds are available for a reasonable request	12
c) A definite reserve policy, including the magnitude of the reserve	0
Total responses	13

The attitudes concerning reserves varied considerably among the firms interviewed. Although two different reserve items were included in the 1954 approved budget of Tyre Company, they amounted to less than one per cent of the total advertising-and-sales-promotion budget. In the revision of the 1955 request a reserve allowance was eliminated which had been included in the original request.[18]

The Magnum Company budgets 10 per cent of the appropriation for reserves. However, no department is permitted to spend any of its reserve until after the first quarter of the fiscal period. In May the reserve is eliminated as a reserve item and is made usable for the operating departments. The Director of Advertising for Avarie stated that top management permits him "the extras if he has a particular task to perform."[19]

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[18]The explanation for this was to permit the budget to meet a 2½ per cent of sales restriction. Apparently the top management for this firm is more indulgent of revisions of the budget during the fiscal period than it is of deviating originally from some accepted ratio of costs to sales.

[19]One advertising manager (name held in confidence) stated: "After our original advertising appropriation is determined, the door is always left open for us to go back to management for additional funds whenever there is a competitive advertising or marketing situation that should be met." Personal correspondence addressed to this writer, dated August 3, 1956.

It appears that the decision-process itself imputes a certain inflexibility, or lack of sensitivity, to the appropriation decision. But this is offset to some extent by formally or informally incorporating a reserve for contingencies in the appropriation.

Characteristics and Roles of the Personnel in the Process

Personnel involved. The results of the questionnaire show that the following executives, other than advertising personnel, are involved in the appropriation decision. In the order of their significance, they are: first, the sales manager; second, the chief finance officer; and third, the president. The typical contributions of these executives, in the highest order of participation, were: for the president, mere approval; for the sales manager and for the chief finance officer, review and control. In only two of the thirteen cases was the top production executive involved in the appropriation decision. Neither of these cases involved review or control. This is shown below.

Question #6: Please check the type of contribution which the following executives make while participating in the advertising appropriation decision.

His Usual Contributions Are:

	Research or Advice	Approval Required	Review and Control	None
a) President	2	10	5	1
b) Top Production Executive	1	1	0	8
c) Sales Manager	7	8	7	0
d) Chief Finance Officer	2	5	6	2

Highest Order of Participation*

					No Answer	Total Responses
a) President	0	7	5	1	0	13
b) Top Production Executive	1	1	0	8	3	13
c) Sales Manager	1	5	7	0	0	13
d) Chief Finance Officer	2	3	6	2	0	13

*Since some respondents checked more than one type of contribution for certain executives, the lower section of this presentation reflects only one answer from each respondent according to the degree of active supervisory participation of the relevant executive. The degree of active participation was arbitrarily established and may be determined by reading the class titles from left to right, i.e., approval was considered as a higher degree of supervision than advice.

In terms of the personnel involved, for the Tyre Company the following pattern prevails: (1) the initial request is made in written form by the Advertising Manager and presented to the Sales Manager, who offers his corrections; (2) the request is then revised and re-submitted to the Sales Manager; (3) if he approves, it is presented for final approval to a top level management committee of which the Sales Manager is a member. Committee approval, given the Sales Manager's sanction, appears to be fairly routine.

In Magnum the decision is arrived at through essentially the same process as in Tyre. The executive committee at Magnum is composed of the Executive Vice President of Sales, the Finance Officer, the Production Manager, and the President. The President may ask that the Sales Executive substantiate certain items and the appropriation may be modified in the light of the needs of the total marketing program. The process for Lytle and Avarie is similar to that of Tyre. However, the advertising agency appears to play a considerable role in the decision for Lytle and the Avarie Sales Manager appears to have greater discretion with respect to the amount of the appropriation than do the sales managers at the other firms interviewed.

Attitude and authority of non-marketing managers. In an attempt to determine the advertising managers' perceptions of their relative status, they were queried about the authority delegated to them as compared to that of the chief production executive. Six of the twelve respondents stated that the chief production executive could make decisions on his own authority involving a larger expenditure of funds than could the advertising manager. The remaining six respondents disagreed (see below).

Question #8-f: In your firm, the chief production executive can make a decision on his own authority involving a larger expenditure of funds than can the advertising manager.

True	4	Total responses	12
More true than false . .	2	No response	1
	6	Total	13
More false than true . .	0		
False	6		
	6		

Ten of the eleven respondents to another question stated that the chief manufacturing executive did not have more authority than was "justified." Therefore, the advertising managers, although in fifty

per cent of the cases having less authority for expenditure than the production manager, did not seem antagonistic toward the latter. Possibly, in those instances where the production executive had relatively more authority than the advertising manager, the differential reflects the greater discretionary power imputed to a higher management level--i.e., the production manager may be on a higher level than the advertising executive.

Question #9-a: Does the chief manufacturing executive, as compared to the advertising manager, have relatively more authority than is justified?

Yes	1	Total responses	11
No	10	No response	2
		Total	13

Nevertheless, the typical respondent thought that two major executives do not attach much importance to the advertising function. Ten out of thirteen respondents stated that an executive is not very favorable toward advertising if most of his work experience has been in the areas of manufacturing or finance (see data shown below). If two of the major executives in the management hierarchy do not attach much importance to advertising, the status and informal authority attached to the function may be relatively low.

Question #8-a: An executive in your firm is not very favorable toward advertising if most of his work experience has been in the areas of manufacturing or finance.

True	1	More false than true	1
More true than false	9	False	2
	10		3
		Total responses	13

In this respect, the Avarie Manager and the Lytle Assistant Manager stated that production (and, for the latter respondent, finance)

executives were the least favorable toward advertising: Production people are "more concerned with the technical aspects of the product and not enough with merchandising." The Accountant at Lytle said that neither the Treasurer nor the Controller were particularly favorable toward advertising.[20] The Assistant Manager at Magnum believed that engineers were least favorable toward advertising "because advertising results cannot be measured with a slide rule."

In the light of these findings, the advertising manager may feel defensive in making his budget request. He may believe that other executives consider that money expended for advertising is not justified. Yet, according to respondents to the questionnaire, such was not the case. Eleven out of twelve responses stated that there was no predominant opinion among other executives that the advertising manager tries to get more than his share of the budget. This is shown in the following data.

Question #9-c: Is the prevailing opinion among other major executives in your firm that the advertising manager generally tries to get more than his share of the budget?

Yes	1	Total responses	12
No	11	No response	1
		Total	13

Identification of the manager with the enterprise. The identification of the individual with the business firm is determined in part by the relationship between his individual economic welfare and the financial success of the organization. For this purpose two measures may

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[20] He exemplified their attitude with the statement that: "The company, following competition, allocates a standard cost pattern in percentage terms. To maintain a given profit percentage, advertising often must be squeezed."

be employed: (1) ownership rights vested in management, and (2) the relationship of the individual's salary to the profits of the firm.

Ownership rights do not provide a significant proportion of annual income for any of the respondents to the questionnaire.[21] Yet the empirical results show that a large majority of the respondents would not sell their company stock. Although assured that they could hold their current position whether or not they sold the stock, seven of the eleven respondents stated that they would not sell the stock, even if the price was expected to fall (see below).[22]

Question #22-h: Suppose that you own company stock the price of which you think will fall. Also you know you can hold your present position and salary. Would you sell that stock?

Yes	4	Total responses	11
No	7	No response	2
		Total	13

Ten of the twelve respondents who answered the question, stated that their salaries were not directly related to the income or sales of their firms.[23] Evidently, the incomes of the managers are not directly

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[21]Question #22-d: Is a significant proportion of your annual income derived from ownership rights which you hold in the company?

Yes	0	Total responses	12
No	12	No responses	1
		Total	13

[22]Perhaps the willingness to keep the stock reflects individual characteristics other than identification with the firm, e.g., financial predilections.

[23]Question #22-a: Is your salary related directly to the income or sales of the firm?

Yes	2	Total responses	12
No	10	No response	1
		Total	13

related to the economic success of their respective firms, but, in the instance above, the typical response indicated no lack of identification.

Personal aims of the advertising managers. Only three of the respondents stated that advertising managers in the industry are as concerned with rank and title as with salaries. (See the following.)

Question #22-g: Do you think advertising managers in your industry are as much concerned with the title and rank which they hold as they are with their salary?

Yes	3	Total response	11
No	8	Both yes and no	1
		No response	1
		Total	13

Although rank and title were heavily outweighed by salary, other status needs may be present. One technique for gaining status pertains to the technical efficiency with which the task is performed. Attempting to probe this aspect of status, the following question was asked: "Do you think advertising managers in your industry spend relatively more time with the mechanical perfection of an advertisement than they do with its 'pulling power'?" Ten of the twelve responses were negative replies.[24] With only one exception, the interviewees agreed with the modal answer to the questionnaire. The exception was the Accountant for Lytle.

Yet some doubt existed among the interviewees. The Sales Promotion Manager at Avarie gave a "yes-no" answer while the Assistant Manager at Lytle said it was fairly difficult to give a clear answer. The Magnum

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[24]Question #22-e: Do you think advertising managers in your industry spend relatively more time with the mechanical perfection of an advertisement than they do with its "pulling power"?

Yes	2	Total responses	12
No	10	No response	1
		Total	13

Assistant Manager stated that some managers are technicians rather than executives; and that the former is most concerned with mechanical perfection.[25]

Social forces bearing upon the manager. The advertising manager belongs to or is associated with a work or functional unit as well as the executive group. He may desire recognition and acceptance by this work unit. This desire for social proximity may force him to accept their sentiments and values, which may or may not be congruent with the formal enterprise purpose.

Two questions were asked to determine the nature of subordinates' standards. One was whether subordinates are as concerned with doing a good job as they are with job security. The respondents gave an almost unanimous answer in the affirmative.[26] The second question pertained to the criteria by which the subordinates judge the advertising manager. These choices are presented below.

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[25] It could be expected that where such an attitude prevails, differing emphasis is given the various decision-standards. Such considerations are examined in Chapter VI.

[26] Question #8-e: Indicate your opinion of the following statement as it reflects the situation in your firm: Subordinates are as much concerned with doing a good job as they are with job security.

True	6	Total responses	12
More true than false	5	No response	1
	11	Total	13
More false than true	1		
False	0		
	1		

Question #23: Please rank the following characteristics according to the importance which you believe your subordinates place upon them when judging you.

Standards	Rankings 1st	2nd	3rd	4th	Corrected Composite Index	Average Rank
a) Gets raises in salary for his subordinates	1	2	9	0	28	3
b) Is not too strong a "taskmaster"	1	1	1	9	18	4
c) Knows the advertising business well	10	0	1	1	43	1
d) Is able to sell his subordinates' ideas to top management	0	9	1	2	30	2
Total responses	12	12	12	12		
No response	1	1	1	1		
Total	13	13	13	13		

According to the respondents, the standard upon which subordinates place major emphasis is the manager's knowledge of the advertising function. This seems to coincide directly with organizational rationality. The standard ranked second in importance was the representation of subordinates' ideas to top management. These may reflect suboptimization on the part of the subordinates but not necessarily so. The fact that the superior demands very high performance was ranked lowest in the array of standards. These results show that, in general, subordinates' criteria for judging their superiors appear to be organizationally rational.[27] Possibly the manager attempts to increase the social affinity between himself and the work group. If this is accomplished by meeting the leadership objectives of the work group, and if his perception of these criteria are accurate, his behavior would be directed toward the formal purpose of the enterprise.

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[27]Caution must be exercised in interpreting these rankings because they reflect the reactions of the superiors, not the subordinates.

Pursuing the question somewhat further, the respondents were asked whether or not subordinates form cliques, the purposes of which have nothing to do with increasing their efficiency.[28] Again the respondents showed a high response in terms of organizational rationality.[29] Only two of the twelve respondents answered that subordinates do form such cliques.

Finally, the question was asked whether or not the superior might attempt to "buy" personal loyalty from his subordinates. The following information indicates that such is not the case.[30]

Question #22-f: Would most other advertising managers pay their subordinates more money than they are worth in order to maintain the subordinates' loyalty?

Yes	1	Total responses	12
No	11	No response	1
		Total	13

In making his choices the decision-maker employs values founded in reference groups as well as the business group. Accordingly, the questionnaire attempted to elicit responses in terms of such groups. One of these, society in general, formed the basis for the following question: "Are you ever motivated to offer an advertising program which

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[28]Question #9-d: Do subordinates form cliques, the purposes of which have nothing to do with increasing their efficiency?

Yes	2	Total responses	12
No	10	No response	1
		Total	13

[29]This response may merely reflect that such cliques are considered undesirable and should not be found in their departments.

[30]Since the respondent might have been unwilling to express himself in terms of such institutional nonrationality, the question was phrased in terms of his professional group.

would benefit society whether or not it would sell any tires?"[31] Seven of the eleven respondents to the question stated that they were so motivated. Even so, this does not prove institutional irrationality. The statement of the formal purpose of the firm may include certain social objectives. When the question was phrased with the advertising club as the reference group, the affinity appeared to be less strong. This is shown in the following results.

Question #22-c: Is it a mark of success to be an officer in a local advertising club?

Yes	4	Total responses	12
No	7	No response	1
Both "yes and no"	1	Total	13

The role of the standards of a reference group depends upon the strength of the attractions of the reference group. The possibility that the standards may be transposed to business decisions does exist. Therefore, the criteria employed in judging a candidate for office in the local advertising club were examined. The two standards ranked highest were unrelated to the candidate's business position and appear closely associated with the characteristics which would make for an effective officer of the club. There seems to be little transposition of business standards to reference group decisions and those which are employed appear to be organizationally rational.

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[31] Question #22-b: Are you ever motivated to offer an advertising program which would benefit society whether or not it would sell any tires?

Yes	7	Total responses	11
No	4	No response	2
		Total	13

Question #21: Suppose an election were held to vote for an officer of a local advertising club. Rank the following characteristics according to the significance which you think other members of the club would give them in their voting.

Standards	Rankings 1st	2nd	3rd	4th	5th	Corrected Composite Index	Average Rank
a) Ability to write good copy	0	1	1	2	8	19	5
b) Deals with the largest appropriation	2	1	2	5	2	32	4
c) His activity in community or civic events	7	2	2	0	1	50	1
d) Ability to lead group discussions	2	6	2	2	0	44	2
e) Title or position which the candidate holds in his business organization	1	2	5	3	1	34	3
Total responses	12	12	12	12	12		
No response	1	1	1	1	1		
Total	13	13	13	13	13		

The interviewees had mixed responses concerning the advertising manager's relative affinity for reference groups. The Accountant for Lytle stated that advertising men in the industry were as much concerned with outside interests as with contributing richer profits to the firm. The Assistant Manager for this firm said the reverse was true. The respondents for Magnum agreed with the Lytle Assistant Manager. However, the Assistant Manager for Magnum believed that the "mechanic type of manager, as contrasted to the executive type, does spend more time with outside interests than with the task of contributing higher profits to the firm." Both the Sales Promotion Manager and the Advertising Manager for Avarie believed that it was "human nature" to be highly interested and involved with related, but outside activities. The Advertising

Manager said that too many of the industry's advertising men think in terms of being a "big shot in a national organization: they are not concerned enough with profits and marketing and how they would be affected by changes in sales."[32]

From the empirical evidence obtained, it appears that conscious deviations from formal purpose are negligible, yet some nonconformity exists. Most of the interviewees were very strong in the belief that the advertising manager knew the objective of the advertising department and adhered to that goal very closely. The Accountant at Lytle, however, stated that "advertising men do not give a particular damn about profits. They think in terms of expanding sales, not profits--advertising men are poor businessmen."[33]

The Objectives and Productivity of Advertising

The purpose of advertising. "To maintain an increasing preference for the company's products and to provide an increasing profit" are the objectives of advertising as described by the Assistant Manager for Magnum. The Advertising Manager for Avarie defined the objectives as: (1) to create a desire on the part of potential consumers to buy the product and (2) to create a desire on the part of dealers to handle or "push" the product. However, these broad objectives require further examination. A question was designed to determine the specific purpose

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[32]The Avarie Director of Advertising and Sales Promotion stated that he holds some national offices, and his experiences have shown that "outside interests help the managers in their work; and, although such activities take time and expense, they do add prestige to the company."

[33]There appears to be a tendency for the respondents more and more removed from the advertising function to believe less and less in the organizational rationality of the advertising manager.

of advertising in terms of protecting the price of the product versus maintaining its volume. No predominant view was expressed.[34] As indicated by the following findings, six of the eleven acceptable responses favored volume over prices.

Question #20-b: According to your experience in the industry or your firm, protecting prices generally is more important than maintaining a given sales volume.

True	2	Total acceptable responses .	11
More true than false . .	3	Checked both 2 and 3	1
	5	No response	1
More false than true . .	3	Total	13
False	3		
	6		

Those who favored volume over prices may believe more strongly than the others in the existence of excess capacity or the presence of price-leadership in the industry. The presence of both of these factors was disclosed by the questionnaire. All eleven of the respondents who answered the question stated that prices in the tire industry are made on a follow-the-leader basis.[35]

Question #20-f: According to your experience in the industry or your firm, prices are made in the tire and tube industry on a follow-the-leader basis, where one or a few firms announce all price decisions which the others adopt.

True	5	Total acceptable responses .	11
More true than false . .	6	Checked both 2 and 3	1
	11	No response	1
More false than true . .	0		13
False	0		
	0		

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[34]The nature of these diverse views is examined more fully in the following chapter.

[35]The respondents' answers coincided with findings from the secondary data. The responses to the question dealing with "decreasing costs" provide further validation.

The interviewees disagreed with respect to whether or not large firms receive a higher price for their tires than do the independents.[36] The interviewees for Magnum stated that the large firms do receive a higher price. The Assistant Manager accounted for this difference in terms of the "greater confidence of the consumer in larger companies brought about by more advertising." In contrast, Lytle's interviewees stated that such was not the case. The Assistant Manager explained that the "larger firms do not stress premium quality over volume." The Advertising Manager and the Sales Promotion Manager for Avarie disagreed with each other. The latter thought that large firms did receive a higher price and explained his belief in terms of the "higher quality of the product, more advertising and better distribution" by the large firms.

The interviewees again showed mixed reactions when they were asked whether small firms authorize their dealers to extend more liberal returns and adjustments than the large firms. One interviewee at each Lytle and Avarie stated that such was the case, while one at each company disagreed. Those disagreeing were the Accountant for Lytle and the Advertising Manager for Avarie.[37] The Sales Promotion Manager for the latter believed that the small firms "obliged their dealers with greater discretion on all types of marketing activities." The Assistant Manager for Lytle explained that this was because "the small firms are associated with independent dealers, while the large firms have many of their own stores."

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[36]The evidence from the secondary sources indicated that such was the case.

[37]None of the interviewees for Magnum felt qualified to answer the question. For those who answered, no distinction among the various views can be made by size of firm, level in the management hierarchy, or proximity to the advertising function.

With respect to the other reason mentioned above for favoring volume over prices, most of the respondents believed that their firms were operating in the range of decreasing costs.[38] Eight of the eleven respondents answered that manufacturing costs per unit would fall if output were to increase.

Question #15: If your firm were to increase output, would per-unit manufacturing costs:

a. Rise	0	Total acceptable responses .	11
b. Fall	8	Checked both c and d	1
c. Remain constant . .	1	No response	1
d. Don't know	2	Total	13

The objective of advertising was not defined only in terms of the product market: Consumers of the product are not viewed as the sole recipient of the advertising message.[39] Ten of twelve respondents stated that product advertising helps the sale of their company's stock in the security market.[40]

Both the Assistant Director of Research and the Assistant Manager of Magnum stated that some of their advertising was specifically directed toward the security market. In contrast, none of the interviewees at Lytle was sure that advertising was ever directed toward the security market.

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[38] This view is consistent with the secondary data.

[39] The interviewees, however, did not believe that advertising was directed toward the labor market, although the Assistant at Magnum stated that "some efforts might be expended in that direction in local areas."

[40] Question #20-c: According to your experience in the industry or your firm, product advertising helps the sale of your company's stock in the securities market.

True	4	Total responses	12
More true than false	6	No response	1
More false than true	1	Total	13
False	1		

Reactions to the question were split according to the size of the firm.[41] The larger the firm, the more certain that advertising is directed toward the securities market.

Throughout the interviews, dealer needs and desires were emphasized as a justification for advertising. The results of the questionnaire gave some support to these findings, although reactions were mixed. Seven out of twelve respondents answered that they could not sell to dealers without some advertising on the part of their firms. Only one respondent stated definitely that his firm could sell to dealers without advertising.

Question #20-e: According to your experience in the industry or your firm, you could sell to dealers without some advertising on the part of your firm.

True	1	Total responses	12
More true than false	4	No response	1
	5	Total	13
More false than true	4		
False	3		
	7		

In the letters of enclosure accompanying all advertising budget proposals in the Tyre Company, considerable attention was given to dealer relations.[42] In the 1954 original request, for example, the statement was made that, "it would be extremely difficult, if not impossible, to pare this budget further, for most of the items included in the

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[41] Again, the respondents for Avarie did not agree with each other. The Manager answered that advertising was directed specifically toward the security market, labor, and dealers, and further, that this fact was used as a justification for increasing the budget request. The Sales Promotion Manager disagreed.

[42] On the other hand, little explicit attention was given to the manufacturer's own task.

appropriation must be furnished the dealers [of the firm, especially] . . . if it is to remain competitive during 1954." In the initial proposal for 1955, a request was made for an expenditure to be used for "selected market development." Specifically, it was to aid in "signing up new accounts," this being a "continuation of an unofficial program which has been in effect all along. It is accepted practice of the industry that a certain percentage of the cost of getting the new account off to a good start must be met by the new parent company . . . since so much expense is involved in making a changeover."

Isolated productivity of advertising. With one exception, all interviewees felt that advertising was a strong determinant of consumer preferences. The Lytle Accountant stated that such was not the case: "tires are not bought upon the basis of style differences." The Lytle Assistant Manager thought that advertising is a strong determinant but only "if enough advertising is done." With few exceptions,[43] however, a decrease or increase in the advertising appropriation by either 10 or 25 per cent was thought to result in a less than proportionate

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[43] The exceptions were as follows:

(1) The Avarie Manager did not know the effect of a 10 per cent reduction in the appropriation but thought an increase of 10 per cent would increase immediate sales more than 10 per cent. The Assistant Manager at Magnum felt that a reduction in the appropriation of 10 per cent would cause a greater than 10 per cent reduction in sales.

(2) A 25 per cent change in the appropriation would bring about a greater than proportionate change in sales according to the Avarie Manager.

change in sales.[44] The opinion seemed to be that tires are of a "non-style" nature which do not lend themselves to highly promotional type of advertising.[45]

A majority of the interviewees did not feel competent to estimate the impact of a change of 50 per cent in the appropriation. The statement by the Assistant Director of Research of Magnum reflects their views. He said: "A change of 50 per cent is too far from my experience to permit an answer." Nevertheless, the interviewees stated that a change of 50 per cent would have a greater impact than a change of 25 per cent which, in turn, would have a greater effect than a change of 10 per cent.

Moreover, the Assistant Managers of both Lytle and Magnum made a strong point concerning the impact upon dealers of changes in advertising expenditures. The Assistant at Lytle stated: "Advertising whets the appetite of the dealers--we must have dealer interest. Dealers are the clue. If we had a 50 per cent increase in advertising expenditures, dealers' interest would increase to the hilt."

"Don't know" was the typical response of the interviewees concerning the impact of changes in advertising expenditures upon

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[44]This opinion is typified by the following statement: "We do not believe that there is any cause and effect relationship in the size of an advertising budget which is so responsive that a 10% increase or decrease would necessarily result in a change up or down in this year's sales or next. Media, timing, and copy approach are the variables which might completely offset a 10% increase or decrease in budget." Personal correspondence addressed to this author, dated May 20, 1955. (Name held in confidence.)

[45]The interviewees did believe that the sales-response of local newspaper advertising and that of a "buy tomorrow" nature was greater than for institutional and national advertising.

goodwill.[46] This may explain why some of the firms do not include goodwill as a direct or specific allocation in the budget. Seven out of twelve respondents stated that, in general, no such allocation is made in the budget for goodwill advertising.[47]

Nevertheless, the interviewees believed that advertising did affect long-run sales. The Magnum Assistant Director of Research stated that "the enormous momentum of competitive advertising that has been built-up through the years has created a demand which carries over from one fiscal period to another." A majority of the respondents to the questionnaire recognized that advertisers in the rubber tire industry are faced with a lag in the productive effects of advertising. Eleven out of the twelve respondents stated that the lag between the dissemination

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[46]The Assistant Director of Research and the Assistant Manager for Magnum felt that the effect would be in smaller proportion than the change in expenditures. On the other hand, the Avarie Manager thought the impact would be greater than proportionate, especially with respect to decreases in expenditures.

[47]Question #13-c: According to your experiences in the tire and tube industry, no direct or specific allocation is made in the budget for goodwill advertising.

True	4	Total response	12
More true than false	3	No response	1
	7	Total	13
More false than true	2		
False	3		
	5		

of an advertisement and its sales-response may be of greater duration than the fiscal period for which the budget is appropriated.[48]

In spite of the belief in the carry-over and lag in advertising effects, past advertising was judged as the factor least likely to influence the relative success of changes in the advertising efforts.

Question #19: If all advertisers should make similar changes in the amount of their advertising effort, which one of the following conditions would affect most significantly the relative success of each firm? One least significant?

	Responses			
	Total		Corrected**	
	Most	Least	Most	Least
a. Being the first to change	2	6	2	2
b. Past advertising efforts of each	3	5	1	3
c. Relative quality of the advertising activities	7	2	4	1
d. Supplementary promotional or sales effort	3	2	0	1
Total responses	15	15	7	7
Checked 2 most and 2 least			4	4
Did not answer			2	2
Total			13	13

**This only includes those respondents who checked 1 most and 1 least, i.e., it does not include those who checked two each.

The condition judged most likely to determine the relative success was the quality of the advertising activities. In this light, the

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[48]Question #13-e: According to your experiences in the tire and tube industry, the lag between the dissemination of an advertisement and its sales-response may be of greater duration than the fiscal period for which the budget is appropriated.

True	8	Total responses	12
More true than false	3	No response	1
	11	Total	13
More false than true	1		
False	0		
	1		

Avarie Manager stated that they are not so much concerned with "how much others in the industry spend" as with "how effective other advertising is."

In spite of the "lip service" given to the objectives and productivity of advertising, no productivity standards nor measures of past performance were presented in the budget requests for the Tyre Company.[49] Moreover, for a majority of the respondents, fluctuations in advertising productivity appeared to elicit negligible adjustments in the appropriation.[50] Seven of the respondents to the questionnaire stated that the appropriation would not be affected if the sales-response of advertising were falling. According to the findings below, only one of the twelve respondents stated that the advertising budget would be raised to offset the decrease in pulling power.

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[49] One exception was found. In the 1955 Tyre Company's original budget request, a considerable proportion of the presentation was devoted to the objectives of advertising effort and the means for attaining these objectives. Nevertheless, no productivity standards nor measures of past performance were presented. However, by implication quality of effort was implied. The 1954 request finally approved was 13 per cent less than the 1953 expenditures although having a "33 1/3 per cent greater sales objective." Apparently the gain in productivity was to be found in that ". . . waste is held to a minimum and that the most 'mileage' or benefits are obtained from the money requested." Nevertheless, it should be noted that actual 1954 departmental operations expenditures, for example, exceeded the approved budget by 30 per cent.

[50] The decreasing sales-response of advertising may reflect a general worsening condition in the market to which no individual advertiser adjusts. On the other hand, the inability to measure the results of advertising may account for the relative lack of attention given to its productivity.

Question #16: If it were believed that the sales-response of the firm's advertising budget was falling, the appropriation would:

Adjustment	Responses
a) Be raised to offset the decrease in pulling power	1
b) Be reduced because of the inferior productivity	4
c) Not be affected	7
Total responses	12
No response	1
Total	13

Relative productivity of advertising. The remaining analyses of this section pertain to the relative productivity of advertising, i.e., the effectiveness of advertising as compared to other selling methods. Assuming that competition will choose the retaliatory device which would best offset the increased advertising efforts of a given firm, quasi-price adjustments appeared to be the most powerful (or feasible)[51] method of retaliation. As shown below, increased advertising was judged the second most probable type of reaction, while decreasing prices was third.

The general reaction of the interviewees was that, if the firm is "competitive in product quality and prices,"[52] advertising is the most important determinant of consumer preferences.[53] Although the relative role of product quality is difficult to define, the following appears to express the typical opinion. The interviewees believed that product

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[51]The explanation for these choices may reflect, in part, the cost of modifying a course of action after it has been undertaken.

[52]"Competitive" was defined in terms of a "band or range of reasonable prices and acceptable quality."

[53]The Accountant at Lytle stated that dealer attractions, price, and product quality were all stronger than advertising. Note that this interviewee, the one farthest removed from the advertising function, was most consistently negative toward the need for and productivity of advertising.

quality, unlike the other selling techniques, must always be competitive or leading the market. Any absolute "change" in a given company's product is a favorable movement outside the competitive range. Thus a change in quality of product is always stronger than adjustments in advertising. In addition, product quality is considered to be more important than prices.

Question #17: If your firm should sharply increase its advertising activities, what do you feel would be the response of other firms? Rank according to the likelihood of each form of response.

	Rankings				Corrected Composite Index	Average Rank
	1st	2nd	3rd	4th		
a) Decrease prices	0	3	2	2	15	3
b) Increase advertising	4	2	3	0	20	2
c) Change the quality of product	0	1	1	5	10	4
d) Make certain quasi-price adjustments (e.g., trade-ins and bonuses)	5	1	1	0	25	1
Total acceptable responses	9	7	7	7		
Did not answer	4	4	4	4		
Two firms merely checked one choice rather than ranking		2	2	2		
Total	13	13	13	13		

Nevertheless, advertising appeared to be an effective retaliatory device in response to the introduction of a new product. The Assistant Manager for Magnum stated: "The company without the new product must then spend more money advertising their existing products."

Evidence indicates that advertising efforts and price changes are substitutable for each other. Five out of nine respondents to the

questionnaire answered that a reduction in price is substitutable for decreased advertising. On the other hand, the remaining four stated that, should advertising be decreased, sales volume could not be maintained by reducing prices.[54] The findings concerning the substitutability of advertising efforts for price changes were somewhat more definite. Seven out of twelve respondents thought that a growing finished-goods inventory could be sold by increased advertising without an offsetting price reduction.[55]

Nevertheless, the interviewees showed a tendency to believe that advertising could not offset the price-consciousness of consumers. The Avarie Sales Promotion Manager stated that it was debatable whether or not advertising could accomplish this goal, while the Accountant for Lytle thought definitely not. The Assistant Manager for Lytle believed

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[54] Question #20-a: According to your experience in the industry or your firm, if you decrease your advertising, you could maintain the same sales volume by lowering prices.

True	1	Total responses	9
More true than false	4	No response	4
	5	Total	13
More false than true	2		
False	2		
	4		

[55] Question #20-d: Suppose you were faced with a large finished-goods inventory. You could sell this inventory through an extensive advertising campaign without an offsetting reduction in prices.

True	1	Total responses	12
More true than false	6	No response	1
	7	Total	13
More false than true	5		
False	0		
	5		

that price-consciousness might be offset, if advertising were done at the dealer level.

Finally, the interviewees generally believed that some minimum support by dealers is a requirement. The Avarie Manager stated that, "without dealer support, maximum advertising efforts cannot sell."[56] In summary, then, the interviewees believed that, if the firm is "competitive" and has minimum dealer support, adjustments in advertising are stronger than changes in the other selling techniques, yet these changes must not involve deviations from the acceptable range. This appears to support the theoretical proposition that, when all but one of the variables are adjusted to their optimum levels, adjustments in the one remaining have more effect than modest changes in the adjusted ones.

Elements and Construction of the Budget

Cost elements. Although the Tyre Company budget presentation shows considerable effort, both the composition and the classification of certain cost items are confusing. The 1955 original request stated that a certain provision was to be made for mailing expenses. Although a significant expenditure was made for that item in 1954, it was not included in the 1954 budget. Moreover, in the budget request in 1954, a reduction in the appropriation for local company advertising was requested on the basis that: "This reduction represents the approximate cost of sponsoring the local radio program and it is recommended that this be considered as Public Relations, which it is, rather than

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[56] Dealer attractions, e.g., store location and display, were considered to be relatively weak determinants.

Advertising or Sales Promotion."[57] A final example of this confusion might be cited. In the Tyre Company budget, approved for 1954, a cost item was included which was entitled "house organ." Possibly this expenditure should be included in the employee relations budget.[58]

The responses to the questionnaire were divided concerning the existence of agreement on which cost items should be included in the advertising budget. Of the eleven responses, six stated that a general agreement existed within the industry, while five stated that such was not the case.[59]

One means for standardizing the appropriation would be through the auspices of the trade association. However, nine of eleven respondents stated that the association offers very little help in this respect.

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[57]It might be suggested that some portion of this "public-relations" effort may affect favorably the demand for the firm's product.

[58]Nevertheless, this publication may be sent to dealers or pass, indirectly, through the hands of the employees to potential customers of the firm.

[59]Question #13-d: There is general agreement within the industry as to the cost items which should be included in the advertising budget.

True	1	Total responses	11
More true than false	5	No response	2
	6	Total	13
More false than true	3		
False	2		
	5		

Question #13-b: The trade association offers very little help or information that is of use for determining the advertising appropriation.

True	5	Total responses	11
More true than false	4	No response	2
	9	Total	13
More false than true	1		
False	1		
	2		

The budget proposals for the Tyre Company are composed of three basic cost items. In 1954 they were:

Advertising	61 per cent
Sales Promotion	20
Departmental Operation	19
Total Expenditure	100 per cent

Requests for advertising appropriations included expenditures for the media of newspaper, radio, and television as well as cooperative efforts with dealers. However, dealer display, identification, and sales aids were classified in the requests as "sales promotion." Cooperative programs for dealers constituted 23 per cent of the advertising costs; and, if expenditures of the dealers themselves are included, the total cost of cooperative programs approximated 36 per cent of combined manufacturer-and-dealer advertising efforts.[60] As was true in 1955, the largest single item in the 1954 request was national passenger car consumer advertising, which approximated 30 per cent of the total.[61]

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[60]The statement was made by an executive of one of the firms that: "One year cooperative advertising might run 16 per cent and the next year drop down to 7 per cent." Personal correspondence addressed to this author, dated May 20, 1955. (Name held in confidence.)

[61]For the Tyre Company, salaries and indirect labor costs were approximately 70 per cent of the total 1955 departmental budget for operation.

Seasonal break-down of the appropriation. According to the interviewees, the smaller the firm the more directly the monthly appropriation varies with seasonal demand. Both respondents at Lytle answered that the relationship is direct, with the Assistant Manager stating that it is important to "advertise while buyers are tire-conscious." The tenor of the response from the small firms indicated that they believed the impact of contra-seasonal, or even strong off-seasonal advertising is not sufficient to warrant the costs involved. The 1954 monthly budget of selected media for the Tyre Company is shown in Figure 6.

In contrast, the respondents for Magnum felt that their institutional and "quality" advertising remains level throughout the year, while the newspaper and "immediate-sales" advertising is seasonal. The Director of Advertising for Avarie stated that the expenditures for national advertising are "continuous and level, since the advantages thus derived (e.g., preferential treatment by the media) outweigh any savings which might be met in adjusting the expenditures to meet or offset seasonal demand." On the other hand, he said that "immediate 'hard' selling [which, for them, constituted about 70 per cent of the appropriation] coincided with seasonal demand."

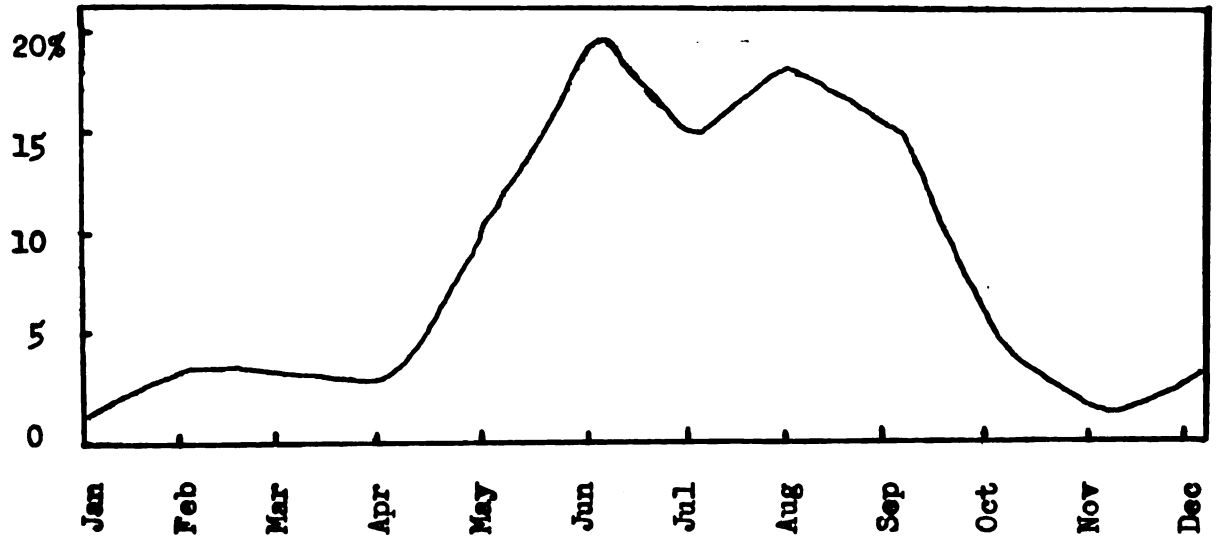
The directness[62] with which the monthly break-down of the budget varies with the seasonality of demand depends upon the proportion that "immediate-sales" advertising constitutes of the total effort: The greater the proportion, the more direct the relationship. In the case of the small firms the proportion is relatively large; therefore, the relationship between the monthly allocation and seasonal demand is positive and relatively direct.

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[62] In no case was an inverse relationship mentioned.

Figure 6

TYRE COMPANY MONTHLY BUDGET, APPROVED BY TOP MANAGEMENT FOR DOMESTIC CONSUMER MAGAZINE, COMMERCIAL CONSUMER, AND TRADE PAPER ADVERTISING, 1954



Source: Adapted from Tyre Company Advertising Estimate and Schedule for 1954

Method of construction. The approaches used in determining the appropriation vary in detail among the firms. The net result, however, appears to be the same--advertising is treated as a highly discretionary expense.

The budget procedure for Magnum consists of: First, providing for the more firm commitments; second, adding the more discretionary expenses; and third, increasing the total by 10 per cent for the reserve allowance. This final figure is reviewed and possibly modified in the light of the total marketing program. Not every item requires justification, however, if the total lies within some general per cent-of-sales limit.

The process for Lytle is approximately the same, but the method of curtailing the total request is different. The estimated expenses for dealer identification (e.g., store signs) are added to the anticipated cooperative-advertising expenditures. The costs of a generalized trade-advertising schedule plus anticipated expenditures for certain non-tire product divisions are added to the previous total. These are considered the "necessary items." Then the Advertising Manager, cooperating with the agency, submits various alternative consumer-advertising proposals which are based upon total dollar figures. The nature and extent of a $500,000 campaign is demonstrated; then one for $400,000. The opinion appeared to be that a $200,000 campaign is most likely to be accepted by top management.[63]

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[63]This does not preclude the use of a percentage rule-of-thumb for determining all but the last expense item, or even the latter. The $200,000 consumer-advertising campaign may be chosen because it brings the over-all budget into the desired percentage-of-sales figure.

Sources of funds for advertising. The opinion among the respondents was almost unanimous that top management would not sanction borrowing funds in order to meet advertising expenses. Eleven of the twelve responses expressed such a view.[64]

The interviewees, excepting those from Magnum,[65] gave similar opinions. While the responses from Magnum were in the nature of a hedge, the other respondents were firmly negative. The answers of the latter are typified by the following:

(1) Advertising Manager of Avarie: "Either your firm has the necessary funds or it doesn't. If it doesn't, advertising won't get you out of difficulty."

(2) Assistant Manager of Lytle: "Advertising is such an intangible item that, unless you can guarantee a [sales] response, the one who makes such a request is on uncertain grounds."

(3) Accountant for Lytle: "Money is hard to get and the needs in other areas are stronger than for advertising; therefore, do not borrow for advertising."

These views probably stem from uncertainty concerning the income-productivity of advertising. The opinions expressed at Magnum may

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[64]Question #9-b: With respect to your firm: Would the current top-management attitude sanction borrowing funds for advertising expenditures?

Yes	1	Total responses	12
No	11	No response	1
		Total	13

[65]The tenor of the response at Magnum was somewhat different. The Assistant Director of Research stated that funds should be borrowed but "in practice they never are." The Assistant Manager agreed with the above but said that "bankers would look with jaundiced eyes at borrowing money for such a purpose." The Director of Advertising said that they "never had borrowed money and they probably would not in the future; but, tradition would not preclude such action if sufficient justification existed."

reflect the degree of specialization in large firms, such respondents taking an exclusively advertising point of view.

Pursuing the problem somewhat further, a question was asked concerning the source of funds if the company should desire to increase advertising efforts during some fiscal period for which the budget had already been established. The results of this question were:

> Question #12: Suppose during some fiscal period in which the budget had already been established, the company desired to increase the amount of advertising effort, which two of the following procedures would most likely be chosen? Two least likely?

Source	Responses Most	Least
a) Absorb the increased costs from profits	11	0
b) Reduce other selling costs	6	2
c) Increase prices	2	8
d) Decrease the quality of the advertising	0	11
e) Reduce manufacturing costs	5	3
Total responses	24	24
No response (one respondent)	2	2
Total	26	26

Eleven of the twelve respondents believed that the increased costs would be absorbed from profits. A second most likely source for increased expenditures is a reduction in other selling costs. Apparently, the various selling techniques are to some extent substitutable for each other. The source considered least likely to be utilized is that derived from some decrease in the quality of advertising. From this, it may be concluded that the substitution of quantity of advertising for quality is highly limited.[66] The second least likely source for increased expenditures is increased prices. This is explainable largely in terms of belief in the existence of follow-the-leader pricing.

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[66] Perhaps this reflects an inability to define and/or measure the variable "quality."

Determinants of the Appropriation

Selected determinants examined. Eleven of thirteen respondents stated that, if it were anticipated that profits of the forthcoming year were to be larger, an increased appropriation would be more easily obtained.[67] Thus, the appropriation is related in part to the profit forecast. This may show that advertising is viewed as a desirable but residual type of expense item, adjusted according to some desired profit ratio.

The respondents believed that some relationship exists between the sales forecast and the amount of the advertising appropriation. Seven of the eleven respondents stated that the appropriation would increase in the same proportion or increase proportionately more than the increase in the sales forecast.

Question #14: If you anticipated an increase in forecasted sales, would the size of the advertising appropriation:

a) Increase proportionately more	3	Total acceptable responses	11
b) Increase in the same proportion	4	Checked both c and d	1
c) Increase proportionately less	3	No response	1
d) Remain unaffected	1	Total	13
e) Fall	0		

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[67] Question #13-a: If profits were expected to be considerably larger next year, you would have a better chance of obtaining a larger advertising appropriation for that year.

True	6	More false than true	1
More true than false . .	5	False	1
	11		2
		Total responses	13

The Assistant Director of Research for Magnum agreed with the respondents' modal choice.[68] He implied that a direct relationship should exist, stating that "advertising is a legitimate expense and should move with increased volume."[69]

Although only one of the eleven respondents stated that the appropriation would remain unaffected should an increase in sales be anticipated, both the Avarie Director and the Magnum Assistant Manager thought that such was the case.[70] The former stated that "apparently the quality of advertising, along with certain other variables, is doing a suitable job in stimulating sales. Why should the appropriation be increased?"

Certainly, one of the difficulties which the interviewees encountered was that a firm's sales are dependent upon certain exogeneous factors as well as other selling devices.[71] Nevertheless, no injustice is done to the data by indicating that the appropriation shows some dependence with anticipated sales.

The opinions of the interviewees were mixed when asked concerning the importance of competitors' expenditures expressed as a per cent of sales. The Magnum Assistant Manager stated that it was not too important but that "if others increased their appropriation, a good strong look

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[68] In contrast to the phrasing of the question in the questionnaire, the interviewees were asked in terms of "should" not "would."

[69] The Assistant for Lytle and the Sales Promotion Manager for Avarie thought that the appropriation should increase more than proportionately, the latter saying that "the answers will vary with the time span for which the projection was made."

[70] It is interesting to note that the Accountant at Lytle had no answer for this question.

[71] In retrospect, this writer believes that some ambiguity may have arisen from a failure to distinguish clearly between an absolute and a percentage increase in the budget.

would be taken." The Avarie Sales Promotion Manager thought that "deviations from industry practice are important to the extent that each has individual problems, but such percentage figures offer some guide to the firm in question." The Director of Advertising said that their company would not follow such a measure because, "if the percentage figure appeared high, attention should be given to the profit margin on premium sales." The Assistant Manager for Lytle, however, thought it very important to meet competitors' percentage figures. The following results show that a majority of the respondents believed that there was widespread use of some accepted percentage of sales figure.

Question #13-f: General use is made by a majority of the firms in the tire industry of some accepted per cent of sales in the determination of the advertising appropriation.

True	4	Total responses	10
More true than false . .	4	No response	3
	8	Total	13
More false than true . .	2		
False	0		
	2		

In this respect, the revised budget proposal for Tyre, 1955, included the statement that "the amounts for each item of expense have been cut to an absolute minimum so as to bring the over-all figure into the projected scope," that is, 2.5 per cent of sales which is "normal for the industry."[72] In the original request for 1955, the Advertising

[72]Another firm (name to be held in confidence) stated that the determination of the advertising appropriation for the coming year is a relatively simple matter, ". . . a matter of meeting with the marketing staff and the sales staff to first establish what they feel our sales will be for the following year. Over the years we have developed a factor which tells us of the percentage of sales we may reasonably expect to invest in advertising, and with that guide in mind, then we work with our agencies and our own media people to set up programs as to how we will invest the appropriation." Personal correspondence, addressed to this writer, dated August 3, 1956.

Manager said, "I have not restricted myself to a certain percentage of sales but rather have prepared the budget by the Task Method as so many companies are doing today." Yet this request was reduced by approximately one-third so that the 2½ per cent of net-sales restriction was met. Apparently, this percentage figure is the maximum allowable in the eyes of Top Management.

The Assistant Manager for Lytle stated that a rule-of-thumb was used "to set maximum limits" and the company had not "deviated from it in the past ten years, even in the event of a new product." Although the Accountant disagreed, it appears that such a measure is employed at least in terms of a maximum. Deviations appear to be reductions from the maximum.[73]

In contrast, the interviewees at Avarie felt that such rules-of-thumb were unimportant. The Director said that "considerable latitude exists in the over-all budget, except for certain divisions [excluding tires]."[74] A rather broad range for the ratio was used at Magnum which probably reflects the dominant position of that firm. The Director stated that the percentage did vary from time to time over a range of 2½ to 10 per cent.

According to the majority of the interviewees, deviations from the standard ratio would be made in the event of a new product on the market. The departure might be made in order to exploit the firm's own product or

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[73] Lytle advertising seems to be a highly discretionary type of expense. A pro forma profit-and-loss statement is employed. Sales and production costs are forecast and a gross return is anticipated. From this, the other expenses are subtracted to obtain the anticipated profit. If the profit-on-sales ratio is too low, the advertising appropriation is the first expense to be reduced.

[74] The Sales Promotion Manager thought, however, that rules-of-thumb are used to allocate the appropriation, e.g., by months.

to offset the effects of a competitor's new product. However, in most instances, they believed that a "rule-of-thumb" serves useful ends. The Magnum Assistant Manager, for example, stated that "a definite fixed percentage is an approach well supported by finance people and is the best way to sell a budget."

Relative weights of the appropriation determinants. To arrive at the relative emphasis given the determinants of the appropriation, the questionnaire presented three separate sets. The respondents were asked to rank each variable in each array according to its relative importance. The interviewees were asked to rank four factors[75] and were also asked to suggest factors which they considered to be more important than those presented.

The Director of Advertising and Sales Promotion for Magnum stated: "The most important factors are new products and the competitive situation (i.e., the need to offset competitors' advances)." The Assistant Manager felt that these same factors were more important than any other, excepting dealer demands. The Manager for Avarie felt that a new product was by far the most important factor.

Showing agreement with the Magnum Assistant Manager, the respondents to the questionnaire chose, as first in one array of standards, the importance of dealer cooperation. In this particular question shown below, advertising costs as a per cent of profits were ranked a close second.

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[75]The standards presented to the interviewees were: (1) dealer demands, (2) availability of increased funds, (3) increased production capacity, and (4) fall in sales. The Magnum Assistant Director of Research did not rank the factors presented because he felt they were not of prime importance.

Question #18: Rank the following factors according to the importance that top management places upon them in establishing the advertising appropriation

	Rankings 1st	2nd	3rd	4th	Corrected Composite Index	Average Rank
a) Success of some past advertising program	2	0	5	5	23	3(t)*
b) Advertising costs as a per cent of profits	5	2	4	1	35	2
c) The importance of dealer cooperation	3	9	0	0	39	1
d) The need to maintain long-run goodwill	2	1	3	6	23	3(t)*
Total responses	12	12	12	12		
No response	1	1	1	1		
Total	13	13	13	13		

*Tied. The symbol henceforth will denote a tied average ranking.

Most of the interviewees gave considerable importance to dealer demands.[76] The Assistant Manager at Magnum stated that his firm maintains a panel of dealers which, among other purposes, serves to focus these demands. The Manager at Avarie said that the budget had been increased twice within the year because of dealer reactions.

In the answers to Question 18, the mechanistic standard, advertising as a per cent of profits, was given a high rank. The standards reflecting

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[76]There was a tendency for greater emphasis to be given this factor the larger the firm. Demands from dealers were ranked as first by the Assistant Manager at Magnum and by the Manager at Avarie, although ranked fourth by the Assistant Manager at Lytle. The Accountant at Lytle and the Sales Promotion Manager at Avarie ranked this factor as second and third respectively. On the other hand, the Magnum Assistant Director of Research said that dealer demands are not very helpful in determining advertising needs since their view is "give me a two percent discount, I'll sell your tires."

past productivity and future effects (goodwill) were ranked relatively low. All of this may stem from an inability to measure, or lack of confidence in, the (immediate) sales-creativity of advertising.

In another question, the respondents were required to rank selected factors which might elicit an increase in the budget according to the weights top management would attach to them. Financial position was chosen as most important. Following the availability of increased funds, "demands from dealers" was ranked second. A fall in sales was ranked fourth while suggestions from salesmen were ranked fifth.

Again, the respondents ranked dealers' needs very high. Only financial liquidity was ranked higher. Supporting this, the interviewees ranked the availability of increased funds equal in importance to dealer demands.[77] A fall in sales, the factor most directly related to market conditions and reflecting the stated objective of advertising, was least important according to the interviewees.[78] However, financial liquidity may measure most accurately the immediate sales through the effect of sales on position revenue. On the other hand, the Director for Avarie said that the record of his company shows that expenditures are not reduced when sales fall. The Assistant Manager for Magnum stated that "a fall in sales is a tough factor to sell to top management as a justification for increasing the appropriation." The Assistant Director of Research stated that "a fall

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[77]Availability of increased funds was ranked first by the Assistant Manager and Accountant at Lytle, but second, third, and fourth, respectively, by the Avarie Manager, Magnum Assistant Manager, and Avarie Sales Promotion Manager. This factor tended to be ranked higher by the small firms than by the large firms. This may stem from the better financial position of the large firm.

[78]"Fall in sales" was ranked fourth by the Magnum Assistant Manager, the Avarie Manager, and the Lytle Accountant. The Sales Promotion Manager for Avarie and the Assistant Manager for Lytle ranked this standard as second and third respectively.

in sales as a factor eliciting an increased budget misses the point, since the volume of money available is determined by actual sales." In this light, increased funds may not only make it financially possible to increase the appropriation but also reflect increased sales possibilities.

Question #10: The following are conditions which might elicit an increase in the advertising budget. Would you rank them according to the weight which top management would attach to them?

Standard	Rankings 1st	2nd	3rd	4th	5th	Corrected* Composite Index	Average Rank
a) A fall in sales	2	1	4	2	3	25	4
b) Demands from dealers	3	4	3	1	1	33	2
c) Suggestions of salesmen	0	1	3	3	3	22	5
d) The availability of increased funds	6	3	0	0	2	40	1
e) A growing quantity of finished-goods inventory	2	3	2	4	1	30	3
Total	13	12	12	10	10		
Merely checked one choice rather than complete ranking**		1	1	1	1		
Ranked only 3 choices rather than complete ranking***				2	2		
Total		13	13	13	13		

*The index does not reflect the respondents' rankings which were not complete. However, all responses were tabulated.

**The choice of this respondent was (a).

***The choices for these two firms were: first, both chose (b); second, (d) and (e); and third, (a) and (e).

The opinion appeared prevalent that a rise in sales has a greater chance of resulting in an increased appropriation than a fall in sales.

The reasoning above may account for this: The dependence of financial liquidity upon sales precludes increasing the budget when sales fall.

The respondents were asked to rank each item in another set of variables according to the effect each would have in curtailing budget proposals. The factors considered as having the greatest impact were first, production capacity not being available, and second, a reduction in the working capital position. According to the following findings, the factor of least importance was a decline in competitor advertising.

Question #11: The following factors might be curtailing influences upon advertising budget proposals. Would you choose the two which would exert the greatest downward pressure? Two least?

Standard	Responses Most	Least
a) The sales organization not being prepared to meet the new demand	4	6
b) Production capacity not available	11	1
c) An inability to prove the productivity of advertising	1	5
d) A decline in competitor advertising	0	10
e) A reduction in the working capital position	9	2
Total responses	25	24
Only checked one*	1	2
Total	26	26

*This respondent checked (b) as most curtailing

As discussed in the previous section, competitors' advertising was not considered highly significant. These findings support that opinion. The lack of emphasis upon this standard may relate to general use of a common ratio for determining the budget.

Contrary to the results of the questionnaire, production capacity was not particularly important to the interviewees. The Magnum Director of Research, for example, stated that "production capacity is only relevant as it reflects new products, since capacity-growth is tied to the growth of the industry."

Summary. The summary of the preceding empirical evidence is best expressed in terms of modal responses. This will be done by describing a typical firm for the industry.

The formal purpose associated with the advertising manager's task includes both technical or operational and administrative activities. The former aspects concern the preparation and dissemination of product information for the purpose of stimulating or maintaining sales, while the latter deal with the direction and coordination of departmental activities and personnel.

The manager, located in the third level of the management hierarchy, reports to the vice president in charge of sales. The initial preparation of the budget may originate with executives other than the manager. The mechanical preparations may be delegated to a subordinate, although the manager supervises its construction and reviews the proposal in final form. Thus he becomes intimately involved with the request before the sales manager submits it to the executive committee. Review and approval by this committee is the culminating step in the decision process.

The authority of the manager as defined in terms of the appropriation decision is severely limited by a rule of thumb expressed as a percentage of sales. But advertising expenditures are not subject to very much review and supervision by top management during the fiscal period. It is not clear whether or not top management considers meeting the budget restrictions a mark of success. Top management gives relatively less attention to the administrative aspects of the advertising manager's task than to the productivity of the advertising activity. The sales response obtained is the primary standard by which the manager's performance is judged.

Although authority within and among the various departments is highly fractionalized, considerable formal communication exists between the advertising department and the other marketing areas. Yet little direct communication occurs between advertising and the nonmarketing areas. That which occurs is via the manager's superior to the head of the finance and production functions in executive committee meetings. Although the manager recognizes that his decisions are based upon insufficient data, he believes that as much information is available for his decisions as for other marketing decisions.

The justification for establishing a definite appropriation rests largely upon the preplanning required in arriving at the decision. Of least importance is the guidance that the appropriation offers the advertising manager. It is not definite that the signal for the decision is routinely given by some calendar date rather than by a change in the external environment. The process is relatively insensitive to the need for changes during the fiscal period. Offsetting this, however, is the presence of a reserve item which tends to impute greater flexibility to the process.

The major production executive is not involved in advertising decisions. But the president, who approves the budget, and the chief finance officer and the sames manager, who review and control are involved. Executives from two types of backgrounds do not favor advertising. Finance and production personnel do not attach much importance to the advertising activity. Nonetheless, the advertising manager does not feel that these executives think that he makes unreasonable budget requests.

With respect to the personal characteristics of the advertising manager, his financial well-being is not directly related to the economic

success of the firm, at least in the short run. Ownership rights in the firm do not provide a significant proportion of his income, nor is his salary directly related to the sales or profits of the firm. The manager did state that salary is more important to him than the title or rank associated with his position.

The advertising manager feels that people in his profession are more concerned with the productivity of an advertisement than with its mechanical perfection. However, some feeling exists on the part of other executives that the advertising manager, being somewhat technically-oriented, is concerned with the mechanical perfection of an advertisement, possibly at the expense of its sales productivity.

The advertising manager thinks that his knowledge of the advertising function is the attribute weighted most heavily by subordinates when judging him. He believes that subordinates are as much concerned with high performance as with job security and that they do not form cliques which are unrelated to their performance requirements. Possibly because of this, he would not attempt to buy their personal loyalty.

The manager does not think it especially important to be an officer in the local advertising club. The standards used by this group reflect the characteristics of performance that lend themselves to accomplishment of the club's objective. The most important standards of a candidate for office are apparently unrelated to success or performance in the business firm. On the other hand, when general society is used as the referent for the decision-maker, high affinity is noted. The manager would disseminate an advertisement that benefits society without regard to its productivity.

The broad objectives of the advertising function are to create a desire on the part of consumers to buy the product and on the part of dealers to handle the product. Some attention is given to the effect of advertising in the securities market, but little is directed toward the labor market. The specific objective in terms of protecting prices versus maintaining volume is not clear. This probably reflects the manager's opinion concerning the presence of follow-the-leader pricing. He doesn't think that advertising can offset the price consciousness of consumers but does believe that advertising efforts and price competition are substitutable for each other.

As a retaliatory technique, quasi-price adjustments (e.g., bonuses and trade-in allowances) are ranked higher than changes in advertising efforts. Yet changes in advertising are ranked approximately as high as either price adjustment or changes in the quality of the product. This explanation, however, involves certain qualifications. If the firm is competitive in its prices and product, advertising is the most important determinant. But, should the firm move outside the acceptable product or quality range, advertising could not overcome the potential sales loss.

Although quality of advertising appears to be a very important consideration, little substitution between the quality and quantity of effort appears feasible. This may reflect a lack of confidence in or an inability to measure the short-run productivity of advertising. The manager believes that advertising has both a lag in its response and a cumulative effect. No specific allocation, however, is made in the budget for the goodwill effects, nor are the effects of past advertising viewed as an important consideration in determining the budget.

Advertising is considered an effective sales tool, but disagreement exists as to its relative productivity. In general, the belief is that advertising cannot sell an inferior product. Yet, if advertising expenditures are increased, it is thought that sales should increase. The increase, however, would be less than proportionate. The manager did not feel competent to estimate the repercussions of a change in the budget upon goodwill, but thinks that advertising does have a long-run effect.

Considerable confusion exists as to the cost items that should be included in the budget and the classification of the cost items is not consistent. Although a more standardized practice among the firms might be gained through the auspices of the trade association, this organization appeared to offer little such aid to its members.

The monthly allocation of the budget varies with the seasonality of demand for product. The proportion of the immediate-sales type of advertising included in the total effort determines the degree of the relationship. The small firm appears to have a high proportion of this type of advertising. Therefore, the relationship between the monthly allocation and seasonality of demand is greater for the small firm than for the large.

The primary source of funds for increased advertising is from decreased profits. The manager did not believe that management would borrow funds to meet advertising costs. Nor was decreasing the quality of advertising viewed as a feasible source of funds for increased advertising. This is probably accounted for in part by the fact that the short-run income productivity of advertising is small or is difficult to measure.

Advertising is viewed as a highly discretionary expense item. Furthermore, it is mechanistically related to short-run sales forecasts. The typical approach is to apply a percentage-of-sales figure to the sales forecast. This sum establishes a maximum limit for the appropriation request. Then the budget proposal is developed by determining expected costs of the "necessary items," with the more and more discretionary items of expense progressively added. If the final total exceeds the acceptable limit, the budget is reduced by progressively reducing the items added last.

The size of the appropriation also shows some relationship to anticipated profits: Profit percentages are used to place maximum limits upon the budget. The firm establishes a pro forma profit-and-loss statement for the fiscal period. The original anticipations include only manufacturing costs and the most fixed of the selling and administrative expenditures. From the derived net-revenue figure, the more variable of the latter expenditures are subtracted. Should a desirable profit-on-sales ratio not be met, the most easily variable expenses--and advertising is one of these--are reduced.

Dealers are the crux of the sales problem and financial position both indicates the ability to pay for advertising and reflects current sales conditions. Thus these two factors are given considerable emphasis as appropriation determinants. Because of the way in which advertising costs are incorporated in the pro forma profit-and-loss statement and of the general use of common ratios, the percentage which advertising costs are of profits is relatively important.

In this chapter, answers to certain questions were not definitive. In addition, major attention was directed toward the typical response at the expense of the atypical. Some characteristics of the atypical respondents are discussed in the following chapter.

CHAPTER VI

RELATIONSHIPS REVEALED BY THE QUESTIONNAIRE

Introduction

Nature and purpose. The purpose of this chapter is to examine related responses to pairs of questions. Such an examination permits analysis of the respondents' answering patterns. The objective of Chapter V was to determine modal or representative responses to the questions. However, the analysis of typical responses tells nothing about relationships between answers. Therefore, this chapter presents responses by pairs of questions.

Method of presentation. Since there appeared to be a natural organization of the findings, the presentation in this chapter relies upon the nature of the disclosures rather than the order of the deductive reasoning of Chapters II and III. Although this is largely a descriptive reporting of relationships, possible cause-and-effect explanations are suggested. Intuitive reasoning, based upon the assumptions and presuppositions of this study, is relied upon for interpretative purposes.

This study of relationships among answers has revealed certain patterns that make it possible to classify the firms into groups having similar behavior characteristics. For instance, those firms that seem to believe that a large inventory could not be sold by increased advertising without a price reduction, behave differently in several respects than do those firms who believe that advertising alone might

be effective. Several questions were discovered which seemed to provide a basis for classifications of this nature.

Figure 7 presents a summary picture of the several groupings that were discovered. Each Arabic number in this figure refers to a question in the questionnaire. The lines between the numbers signify that some relationship was disclosed between the answers to that pair of questions.[1] Given the answers to Question Number 10, for example, some inference can be made about the answers to Questions 16, 20-d, 20-e, 8-b, 2, and 5.

Objectives and Productivity of Advertising

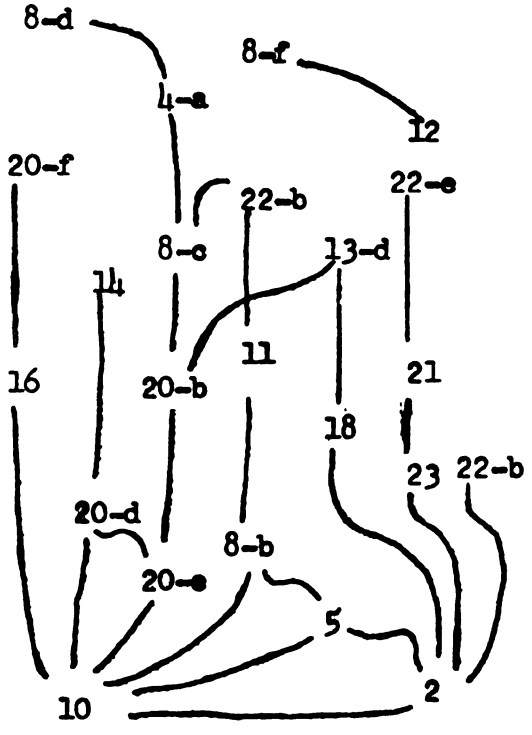
Isolated productivity of advertising. The respondents differed in the relative weights they assigned to selected appropriation determinants. This difference was very marked when the respondents were classified according to their opinions concerning the isolated productivity of advertising. Those who answered that a large inventory could not be sold with increased advertising without a price reduction gave lower rankings to availability of funds and increased inventories and higher rankings to the sales situation and dealers' desires than did the other group (see Table 26).

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[1] Two basic measures of relatedness were employed: (1) a two-rank difference criterion (see footnote w in Table 26) and (2) the chi square test for independence (see the first footnote in Table 27). Since the returns to the questionnaire were neither a true random sample nor a complete census of the tire industry, it is impossible to utilize most of the common tests of significance and dependence. However, the chi square test can be employed to determine whether or not the answers given to a pair of questions were related to each other. In this case, no attempt is made to draw conclusions concerning the tire industry, but merely to examine the answering patterns of those who responded to the questionnaire. The two-rank difference criterion was arbitrarily established as being noteworthy. Because of the crudity of the data, more elaborate statistical techniques were not employed. There is nothing to say, however, that a one-rank difference is not significant.

Figure 7

DIAGRAMMATIC PRESENTATION OF THE CROSS RELATIONSHIPS DISCLOSED BETWEEN ANSWERS TO THE INDUSTRY QUESTIONNAIRE



2: Purposes of the budget
4-a: Timing of the decision
5: Sensitivity to the need of revisions
8-b: Supervision of expenditures
8-c: Strictness in applying the budget
8-d: Information available for decisions
8-f: Relative authority of the manager
10: Conditions for increasing the budget
11: Curtailing influences on budget proposals
12: Sources of funds for increased effort
13-d: Perceptions of accepted cost items
14: Effects of larger forecasts on the budget
16: Effects of falling sales on the budget
18: Decision standards of top management
20-b: Protecting prices versus holding volume
20-d: Isolated productivity of advertising
20-e: Importance of advertising to dealers
20-f: Presence of follow-the-leader pricing
21: Election criteria in advertising clubs
22-b: Service motive versus sales productivity
22-e: Mechanical perfection versus pulling power
22-h: Willingness to sell company stock
23: Subordinates' criteria of management

TABLE 26

THE ISOLATED PRODUCTIVITY OF ADVERTISING COMPARED TO WEIGHTS ASSIGNED TO SELECTED CONDITIONS FOR INCREASING THE BUDGET

#20-d: A large finished-goods inventory could be sold through extensive advertising without an offsetting reduction in prices.*	#10: Rank the following conditions which might elicit an increase in the budget according to the weights which top management would attach to them.+		
	Selected Factors[w]	Weighted Average Index[x]	Average Rank
True, or More True Than False	a: Sales	2-1/6	4
	b: Dealers	3-1/7	2(t)[y]
	d: Funds	4-4/7	1
	e: Inventory	3-1/7	2(t)
False, or More False Than True	a: Sales	3	2(t)
	b: Dealers	4	1
	d: Funds	3	2(t)
	e: Inventory	2-4/5	4

*Responses to #20-d: T (1), MTTF (6), MFTT (5), F (0).

+Factors and associated composite indices in #10: a) fall in sales (28), b) demands from dealers (43), c) suggestions from salesmen (22), d) the availability of increased funds (44), and e) a growing quantity of finished-goods inventory (37).

[w]This table lists only those factors which were ranked quite differently by the two groups of respondents to Question #20-d. Specifically, unless the ranks assigned by the two groups differed by at least two units the factor was omitted from this list. For instance, those who chose "True" or "More True Than False" in answering #20-d ranked alternative (a) of Question #10 as 4th; those choosing "F" or "MFTT" ranked (a) 2d. Had the latter group ranked (a) as 3d, the difference in ranks would have been less than two, and alternative (a) would not have been listed here. This practice is referred to as the two-rank difference criterion.

[x]The index is determined in a manner similar to that used in the preceding chapter, except that the responses are classified by the answer to the opposing question. In this case, the respondents were classified in Question #10 according to their answers in #20-d. Two groups thus resulted, one group answering T or MTTF and the other answering F or MFTT. The average ranks were then found for each of these two groups.

[y]The average ranks for (b) and (e) were tied for 2nd choice. Henceforth, the symbol (t) will denote ties in the average rankings.

Perhaps the group which places considerable credence in the isolated productivity of advertising merely believes that when inventories are large advertising should be employed because it sells; and when funds are available, advertising should be used because it is profitable. In contrast, the group placing less credence in the productivity of advertising in the sense used above, may believe that advertising has some long-run objective. A growing inventory may reflect a softening in immediate sales which advertising is not thought capable of correcting. These respondents emphasize standards expressing a long-run objective, e.g., attempting to gain more dealers.

Table 27 shows that five of the seven respondents stating that a large inventory could be sold by advertising without an offsetting price reduction answered that dealers could be sold without advertising by the manufacturer. Five of seven who stated that advertising is indispensable in selling to dealers did not believe in the isolated productivity of advertising.

These findings appear to support the suggestions made above. The explanation here seems plausible if the effectiveness of advertising in selling increased inventories is viewed as a short-run effect, while its influence in supporting or gaining dealers is viewed as long-run. The efforts may be largely determined by, and the effectiveness judged by, either the short- or the long-run objective. Perhaps those who place less confidence in the direct effect of advertising on sales justify its use by saying the dealers insist upon it.

The respondents most convinced of the isolated productivity of advertising believed that the appropriation would be increased proportionately more or in the same proportion if an increase in sales were forecast.

TABLE 27

THE ISOLATED PRODUCTIVITY OF ADVERTISING COMPARED TO THE IMPORTANCE OF ADVERTISING IN SELLING TO DEALERS*

#20-e: You could sell to dealers without some advertising on the part of your firm.+	#20-d: A large finished-goods inventory could be sold through extensive advertising without an offsetting reduction in prices.**	
	True, or More True Than False	False, or More False Than True
True, or More True Than False	5	0
False, or More False Than True	2	5

*When the chi-square test for independence is applied, the observed values in this 2 X 2 table could be expected to occur approximately 6 times out of 100 by pure chance (i.e., the P-value of chi-square is .06), even if the answers are independent. To simplify the presentation in the future the P-value of chi-square will be written as: "chance probability: ___ per cent."

+Responses to #20-e: T (1), MTTF (4), MFTT (4), F (3).

**Responses to #20-d: T (1), MTTF (6), MFTT (5), F (0).

In contrast, those least certain of the isolated productivity of advertising stated that, if an increase in sales were forecast, the appropriation would increase proportionately less or would remain constant (see Table 28). Apparently those placing little credence in the isolated (probably immediate) sales productivity of advertising or those not using it for that purpose do not mechanically relate the appropriation to short-run changes in the sales forecast.

TABLE 28

THE ISOLATED PRODUCTIVITY OF ADVERTISING COMPARED TO THE EFFECTS OF LARGER FORECASTS UPON THE BUDGET

#20-d: A large finished-goods inventory could be sold through extensive advertising without an offsetting reduction in prices.+	#14: If an increase in sales is forecast would the size of the appropriation:**	
	Increase Proportionately More or in the Same Proportion	Increase Proportionately Less, or Remain Unaffected
True, or More True Than False	6	1
False, or More False Than True	0	3

*Chance probability: 7.9 per cent.

**Responses to #14: a) increase proportionately more (3), b) increase in the same proportion (4), c) increase proportionately less (3), d) remain unaffected (1), and e) fall (0).

+Responses to #20-d: T (1), MTTF (6), MFTT (5), F (0).

Thus one behavioral pattern is disclosed which stems from the confidence placed in the isolated productivity of advertising, expressed in terms of the ability to sell growing quantities of inventories. This can be interpreted as a short-run sales objective. The group least confident of the productivity of advertising as defined above ranked dealers' desires high and inventories low as appropriation determinants. Dealers' desires can be interpreted as an expression of a long-run objective. The respondents least certain of the immediate sales productivity of advertising felt that advertising is indispensable in selling to dealers. Thus advertising appears to be designed and measured

according to one or the other of these two objectives. Finally, the empirical evidence discloses that the group least convinced of the short-run productivity of advertising did not mechanically relate the appropriation to short-run changes in the sales forecast.

Advertising in selling to dealers. A set of relationships is associated with the differing views concerning the importance of advertising in selling to dealers. Those respondents who thought that dealers could not be sold without advertising believed that protecting prices is more important than maintaining volume. Those who favored maintaining volume over protecting prices did not think advertising important in selling to dealers (see Table 29).

The respondents most concerned with prices and dealers may have been attempting to build or hold a quality reputation. Such prestige may depend in part upon the pricing practices of the manufacturer and his dealers. To maintain this reputation, advertising must protect the price of the product even at the expense of volume. Furthermore, protecting prices may be a means of supporting dealers while advertising is a method of reducing the proclivity for price warfare at the dealer level.

The respondents' answers concerning the ability to sell to dealers without advertising seem to be related to the weights assigned to various factors that might elicit increases in the budget. Table 30 shows that the respondents who stated that their firms could sell to dealers without advertising ranked dealers' desires much lower than did those who believed that advertising is a requirement in selling to dealers.

TABLE 29

IMPORTANCE OF ADVERTISING IN SELLING TO DEALERS COMPARED TO PROTECTING PRICES VERSUS MAINTAINING VOLUME*

#20-b: Protecting prices is more important than maintaining sales volume.+	#20-e: You could sell to dealers without some advertising on the part of your firm.**	
	True, or More True Than False	False, or More False Than True
True, or More True Than False	1	4
False, or More False Than True	4	2

*Chance probability: 36 per cent. Thus chance plays a fairly large role and reduces the probability of independence. However, by observation, 80 per cent of the respondents in one answer-classification in Question #20-b selected one pole in #20-e, while 66-2/3 per cent of the other class of respondents in #20-b chose the opposite pole in #20-e.

+Responses to #20-b: T (2), MTTF (3), MFTT (3), F (3). The question associated with this number has been shortened. For a statement of the complete question, reference can be made to Appendix B. A condensed form of the question will be presented in most of the following tables.

**Responses to #20-e: T (1), MTTF (4), MFTT (4), F (3).

TABLE 30

THE IMPORTANCE OF ADVERTISING IN SELLING TO DEALERS COMPARED TO WEIGHTS ASSIGNED TO CONDITIONS FOR INCREASING THE BUDGET

#20-e: You could sell to dealers without some advertising on the part of your firm.*	#10: Rank the following conditions which might elicit an increase in the budget according to the weight which top management would attach to them.+		
	Selected Factors	Weighted Average Index	Average Rank
True, or More True Than False	a: Fall in Sales	3-3/4	2
	b: Demands from Dealers	3-1/5	4
False, or More False Than True	a: Fall in Sales	2-3/7	4
	b: Demands from Dealers	3-5/6	1

*Responses to #20-e: T (1), MTTF (4), MFTT (4), F (3).

+Factors and associated composite indices in #10: a) a fall in sales (28), b) demands from dealers (43), c) suggestions of salesmen (22), d) the availability of increased funds (44), and e) a growing quantity of finished-goods inventory (37).

The former ranked a fall in sales higher as an incentive to an expanded appropriation than did those viewing advertising as a requirement in selling to dealers.

It is natural that a significant relationship should exist between the dealer-sales productivity of advertising and the weight attached to dealers' desires as an appropriation determinant. If dealers are important to the manufacturer and if advertising is a requirement for selling to dealers, it is reasonable to expect that dealers' desires are an important determinant of the advertising appropriation.

On the other hand, the fact that dealers can be sold without advertising does not mean that such advertising is unproductive in all areas. Advertising may be highly productive in some other market; for example, the consumer market to which it is directed. If such is the logic of the advertiser, it is consistent to give more emphasis to (consumer) sales conditions than to dealer demands. All of this substantiates the conclusions presented in the previous section.

Protecting prices versus maintaining volume. Those who thought that protecting prices is more important than maintaining volume as a specific objective of advertising tended to believe that no common set of cost items for the appropriation exists in the industry. Those who favored volume over price did recognize some such general acceptance of cost items (see Table 31).

TABLE 31

PROTECTING PRICES VERSUS MAINTAINING VOLUME COMPARED TO PERCEPTIONS OF ACCEPTED COST ITEMS*

#13-d: Agreement exists within the industry as to the cost items which should be included in the advertising budget.+	#20-b: Protecting prices is more important than maintaining a given sales volume.**	
	True, or More True Than False	False, or More False Than True
True, or More True Than False	1	4
False, or More False Than True	4	1

*Chance probability: 21 per cent.

+Responses to #13-d: T (1), MTTF (5), MFTT (3), F (2).

**Responses to #20-b: T (2), MTTF (3), MFTT (3), F (3).

The necessity for protecting prices may preclude the use of price adjustments as a competitive tactic and thus impart a greater role to advertising. In this instance, less attention is given to general industry practice, i.e., more attention is given to individualized needs than to the practices of other members of the industry.

Those who favored protecting prices did not believe that top management views meeting the budget restrictions as a mark of success. On the other hand, four of the six respondents who favored maintaining volume over protecting price as an objective of advertising answered that meeting the budget restriction is a mark of success (see Table 32).

TABLE 32

PROTECTING PRICES VERSUS MAINTAINING VOLUME COMPARED TO THE STRICTNESS IN APPLYING THE BUDGET*

#20-b: Protecting prices is more important than maintaining sales volume.+	#8-c: Top management views it as a mark of success if the advertising manager does not spend more than the appropriation.**	
	True, or More True Than False	False, or More False Than True
True, or More True Than False	1	4
False, or More False Than True	4	2

*Chance probability: 36 per cent.

+Responses to #20-b: T (2), MTTF (3), MFTT (3), F (3).

**Responses to #8-c: T (0), MTTF (6), MFTT (3), F (4).

There may be other means of control that reflect more fully the needs of this specific objective, i.e., protecting prices; or the

relationship may be explainable in terms of the purpose of the budget itself. Whatever the explanation, a relationship is disclosed between a specific market objective of advertising and a characteristic of internal control of advertising expenditures. Further research might clarify this relationship.

Budget Adaptability and Flexibility

Effects of falling sales upon the budget. The group of respondents most convinced of the existence of price leadership usually answered that the appropriation would not be affected if the sales response of advertising were falling. In contrast, those least certain that price leadership exists believed that the appropriation would be reduced should the productivity of advertising fall (see Table 33).

A greater certainty of price leadership may preclude the possibility of aggressive price competition. Even if the productivity of advertising is falling, it is still preferable to changes in price. Thus no adjustments are made in the advertising appropriation. On the other hand, where price is considered a feasible competitive weapon, i.e., where the respondents are less certain of price leadership, and where the effectiveness of advertising is falling, price competition may be used in its place. If this substitution is made, the advertising appropriation is reduced. This may occur whether the decreased effectiveness results from poorer quality of advertising or from general changes in the market.

Those respondents indicating that the size of the appropriation would be unaffected should the sales response of advertising be falling ranked the availability of funds as a condition for increasing the budget much lower than those who responded that the appropriation would be reduced.

TABLE 33

THE EFFECTS OF FALLING SALES UPON THE BUDGET COMPARED TO PERCEPTIONS OF FOLLOW-THE-LEADER PRICING*

#20-f: Prices are made on a follow-the-leader basis, where one or a few firms announce all price decisions which the others adopt.+	#16: If the sales response of the firm's advertising were falling, the appropriation would:**		
	Be Increased	Be Decreased	Not Be Affected
True	1	0	4
More True Than False	0	4	2

*The test for significance in this table is based upon the theoretical assumption of symmetry among answers to the three possible cells (answers) to Question #16 according to the classification in #20-f. Then the probability of the observed values in each horizontal row of cells (the classification in #20-f) occurring by pure chance was determined. The P-value for the upper row is .21, while that for the lower is 0.38.

+Responses to #20-f: T (5), Mttf (6), MFTT (0), F (0).

**Responses to #16: a) be raised to offset the decrease in pulling power (1), b) be reduced because of the inferior quality (4), and c) not be affected (7).

According to Table 34, the former respondents also ranked an increasing finished-goods inventory much higher than did those who said the appropriation would be reduced.

In analyzing these relationships, the question remains whether or not the falling sales response was thought to be unique to the respondent's firm and thereby attributable to the declining advertising productivity of that firm. Assuming that such was the case, those who answered that the appropriation would be reduced may mechanically relate the appropriation to anticipated sales. If inventory is a less sensitive

TABLE 34

THE EFFECTS OF FALLING SALES UPON THE BUDGET COMPARED TO WEIGHTS ASSIGNED TO CONDITIONS FOR INCREASING THE BUDGET

#16: If the sales response of the firm's advertising were falling, the appropriation would:*	#10: Rank the following according to the weights which top management would attach to them in establishing the appropriation.+		
Selected Factors**	Selected Factors	Weighted Average Index	Average Rank
b) Be Reduced	d) Increased Funds	3-3/4	1
	f) Growing Inventory	2	5
c) Not be Affected	d) Increased Funds	1-2/3	5
	f) Growing Inventory	3	2

*Responses to #16: a) be raised to offset the decrease in pulling power (1), b) be reduced because of the inferior productivity (4), c) not be affected (7).

+Factors and associated composite indices in #10: a) a fall in sales (25), b) demands from dealers (33), c) suggestions from salesmen (22), d) the availability of increased funds (4), and e) a growing quantity of finished-goods inventory (30).

**One selected answer (a) in Question #16 whose ranking in Question #10, was 1st, (c); 2nd, (b); 3rd, (a); 4th, (e), 5th, (d).

measure of falling productivity than current liquidity, most attention may be directed toward the availability of funds. On the other hand, the falling sales response may be taken as given, with a growing inventory an expected repercussion. Inventories then are unimportant as a decision standard. The availability of funds becomes the limiting factor or the crux of the decision.

Although this pattern of relationships is not very extensive, three related characteristics were disclosed: (1) the appropriation would be reduced in the light of a falling sales response, (2) there was uncertainty about the existence of price leadership, and (3) there was greater emphasis upon financial liquidity than inventory position. The relationship between the answers to stem question (1), and each of the other two variables can be explained, but the total behavioral pattern cannot.

Timing of the appropriation decision. All respondents stating that the decision is initiated at some predetermined date believed that the same information is available for advertising decisions as is available for other sales decisions. On the other hand, in three out of six cases where the decision was made concurrently with other marketing decisions, the respondents stated that information available is not the same (see Table 35).

TABLE 35

TIMING OF THE DECISION COMPARED TO THE INFORMATION MADE AVAILABLE FOR DECISIONS*

#4-a: Are the appropriation decisions made because of the arrival of some predetermined date rather than made concurrently with other basic marketing decisions?+	#8-d: The same information is made available to the advertising manager as is available for other sales decisions.**	
	True, or More True Than False	False, or More False Than True
Yes	7	0
No	3	3

*Chance probability: 12.8 per cent.

+Responses to #4-a: Yes (7), No (6).

**Responses to #8-d: T (7), MTTF (3), MFTT (3), F (3).

The group which uses an arbitrary date may feel obliged to call forth and receive all available marketing information. Perhaps where a highly routine procedure exists, more information is demanded or is regularly given. A highly routinized procedure may permit or force the use of more information than one which is not standardized.

For the other group of respondents (where the appropriation decision is made concurrently with other marketing decisions), greater attention may be given to the total marketing program. In this instance, the only information deemed necessary for the advertising department may be a definition of the short-run goals as defined in terms of immediate sales. Communicating the data and reasoning employed in defining this specific goal may be considered unnecessary.

Almost all of the respondents who believed that the appropriation decision is made because of the arrival of some predetermined date believed that budget limitations are not strictly applied. In contrast, all but one of those who thought that the budget limitation is strictly applied stated that the appropriation decision is made concurrently with other marketing decisions.

This behavior appears to reflect the degree of confidence placed in the appropriation. In the case of the decision made according to some predetermined date, less confidence is placed in the budget. A predetermined date may be used as a matter of budgeting convenience or necessity, e.g., at the end of a fiscal period, rather than as a conscious effort to integrate the advertising appropriation with the total marketing program.

Perhaps where the appropriation decision is made concurrently with other selling budgets, the respondents have more confidence in their

over-all marketing program. Thus more emphasis is placed upon the performance standards included in that program. Such firms then measure the advertising manager according to his ability to meet the restrictions of the approved budget.

TABLE 36

THE TIMING OF THE DECISION COMPARED TO STRICTNESS IN APPLYING THE BUDGET*

#8-c: Top management views it as a mark of success if the advertising manager does not spend more than the amount appropriated for advertising?+	#4-a: Are the appropriation decisions made because of the arrival of some pre-determined date rather than made concurrently with other basic marketing decisions?**	
	Yes	No
True, or More True Than False	1	5
False, or More False Than True	6	1

*Chance probability: 5.5 per cent.
+Responses to #8-c: T (0), MTTF (6), MFTT (3), F (4).
**Responses to #4-a: Yes (7), No (6).

The composite characteristics of these two groups can now be compared. For one group, the signal for the decision is the arrival of an arbitrary date. This group receives the same amount of information as other marketing executives but does not feel that the limits of the budget are strictly applied.

The contrasting group feels that the appropriation decision is timed to coincide with other marketing decisions. Perhaps because of this less detailed information is given to the advertising department--only the

specific objective of advertising is transmitted. But, since the efforts are integrated and the results are not attributable to a single function, the budget as a performance standard is strictly applied.

Sensitivity to the need for revisions. Another group of respondents showed a low sensitivity to the need for revising the budget and tended to rank dealers' desires and a fall in sales first or second as determinants of the appropriation. In contrast, all but one of the respondents showing a high sensitivity to the need for revision ranked financial position and inventory conditions as either first or second (see Table 37).

Changes in the external environment (e.g., dealers' desires) may be more difficult to assess than changes in the internal aspects of the firm (e.g., financial liquidity). Firms attempting to adjust to indicators relating directly to the market place may be capable of doing so only in terms of larger or more overt fluctuations. On the other hand, those turning to more measurable indicators arising from internal operations of the firm may be able to show more sensitivity. Reductions in working capital may be more easily observed than small changes in demand. These more observable and measurable factors create or permit greater sensitivity.

All respondents indicating a high sensitivity to the need for revision stated that some supervision of expenditures is exercised after final budget approval. In contrast, Table 38 shows that over half of those having a relatively low sensitivity to the need for revision answered that little supervision is given.

Perhaps the rigidities of the budget process can be explained by the lack of supervision and review. In the absence of continual review, the flow of information concerning the decision may be weak, or the signal

TABLE 37

SENSITIVITY TO THE NEED FOR REVISIONS COMPARED TO THE CONDITIONS FOR INCREASING THE BUDGET*

#5: When is it worthwhile to revise the appropriation? If the change involves an adjustment in the total budget of:+	#10: Rank the following conditions which might elicit an increase in the budget according to the weights which top management would attach to them**	
	Selected Factors (Total first and second choices)z	
	a: Fall in Sales, and b: Dealers' Demands	d: Increased Funds, and e: Growing Inventories
a) Less than 3 per cent, or b) 3 to 5 per cent	1	6
c) 6 to 10 per cent, or d) More than 10 per cent	6	4

*Chance probability: 17.5 per cent.

+Responses to #5: a) less than 3 per cent (3), b) 3 to 5 per cent (2), c) 6 to 10 per cent (2), and d) more than 10 per cent. (3)

**Factors and associated composite indices for #10: a) fall in sales (25), b) demands from dealers (33), c) suggestions of salesmen (22), d) the availability of increased funds (40), and e) a growing quantity of finished-goods inventory (30).

zBoth first and second choices were tabulated for both factors in each column.

TABLE 38

SENSITIVITY TO THE NEED FOR REVISION COMPARED TO THE AMOUNT OF SUPERVISION OF EXPENDITURES*

#5: When is it worthwhile to revise the appropriation? Where the change would involve an adjustment of:+	#8-b: After budget approval, little supervision of the expenditures is given by top management.**	
	True, or More True Than False	False, or More False Than True
a) Less than 3 per cent, or b) 3 to 5 per cent	0	5
c) 6 to 10 per cent, or d) More than 10 per cent	3	2

*Chance probability: 17.5 per cent.

+Response to #5: a) less than 3 per cent (3), b) 3 to 5 per cent (2), c) 6 to 10 per cent (2), and d) more than 10 per cent (3).

**Responses to #8-b: T (2), MTTF (2), MFTT (4), F (5).

for revision must be strong. Perhaps little attention is given to the relationship of advertising expenditures to short-run goals or to short-run productivity. In this case, top management may feel that neither continual review nor a highly flexible budget is required. On the other hand, this relationship may be explained by the specific purpose of the appropriation or by an attitude of top management.

The findings disclosed in the following pair of questions seem to support the explanations above. For those firms having a decision process least sensitive to the need for revision, the preplanning and control aspects of the decision were ranked lower as a justification for the process than for those firms having the highest sensitivity. As

shown in Table 39, those having the lowest sensitivity ranked the goal aspects much higher.

TABLE 39

SENSITIVITY TO THE NEED FOR REVISIONS COMPARED TO THE PURPOSES OF THE BUDGET

#2: Rank the following reasons for establishing a definite appropriation in your firm.*	#5: When is it worthwhile to revise the appropriation? Where the change would involve an adjustment of:+			
	Selected Responses**			
	a) Less than 3 per cent		d) More than 10 per cent	
Factors	Weighted Average Index	Average Rank	Weighted Average Index	Average Rank
a) Thought and Planning	2-2/3	1	2	2
b) Control Instrument	2	2	1-1/3	3
c) Departmental Target	1-1/3	3	2-2/3	1

*Factors and composite indices of #2: a) makes for considerable thought and planning before the final decision (29), b) makes available to top management an evaluation or control instrument (22), and c) provides a target toward which the advertising department may aim (21).

+Responses to #5: a) less than 3 per cent (3), b) 3 to 5 per cent (2), c) 6 to 10 per cent (2), and d) more than 10 per cent (3).

**These particular choices were selected according to the extreme responses to #5.

Where the budget serves primarily as a goal for the advertising department and thus becomes the point of primary attention, an inflexible type of decision process exists. When the budget is considered basically as a planning device--that is, its major justification resides in the

preplanning required by the decision--the process has a greater degree of flexibility and may be exposed to continual review.

Where the advertising budget is integrated closely with other selling appropriations, revisions in the advertising budget may require adjustments in other parts of the total program. A highly integrated marketing program precludes the possibility of a highly sensitive appropriation process.

A low sensitivity to the need for changes may be explained by either the internal characteristics of the firm or the marketing objective of advertising. The process may be insensitive because of inability or lack of desire to assess and adjust to minor changes in the market. On the other hand, insensitivity may arise from the use of the appropriation as a goal for the advertising department: Where the target aspects are stressed, a highly flexible budget may be precluded.

The total pattern of behavior appears to be consistent. For example, insensitivity to minor changes in the market permits the goal aspects of the budget to be emphasized, and this reduces the need for continual review and supervision. However, whether the basis for this pattern of behavior stems from an internal or external orientation cannot be deduced at this time.

Purpose and Control of the Budget

Reason for establishing a definite appropriation. Table 40 shows that the group of respondents who ranked the target aspects of the budget high and the preplanning aspects low gave relatively high ratings to a fall in sales and dealers' desires as conditions for increasing the budget. This same group assigned relatively low ratings to the availability of increased funds and growing inventories.

TABLE 40

PURPOSES OF THE BUDGET COMPARED TO THE CONDITIONS FOR INCREASING THE BUDGET

#10: Rank the following conditions which might elicit an increase in the budget according to the weights which top management would attach to them.*	#2: Rank the following reasons for establishing a definite appropriation.+

	Selected Factors			
	a: Preplanning Aspects		c: Departmental Goal	
Selected Factors	Typical[w] Rank: 1st	Atypical[x] Rank: 3rd[y]	Typical[w] Rank: 3rd	Atypical[x] Rank: 1st[z]
a: Fall in sales	4	2 (t)	4	2
b: Dealer Demands	2	1	2	1
d: Increased Funds	1	2 (t)	1	3
e: Growing Inventory	3	4 (t)	3	4 (t)

*Factors and associated composite indices for #2: a) makes for considerable thought and planning before the final decision (29), b) makes available to top management an evaluation or control instrument (22), and c) provides a target toward which the advertising department may aim (21).

+Factors and associated composite indices for #10: a) fall in sales (25), b) demands from dealers (33), c) suggestions of salesmen (22), d) availability of increased funds (40), and e) a growing quantity of finished-goods inventory (30).

[w]The typical ranking is determined from the composite indices assigned the factors by all the respondents to the question.

[x]The atypical ranking was first determined for #2 by selecting those responses which showed a two-rank difference from the average rankings assigned by the total response. In the case of #2-a the average total rank was 1st, while the atypical rank was 3rd. Then the average rank for those who had assigned atypical ranks in #2 was determined for the various choices in #10.

[y]The average composite indices to #10 for the atypical respondents to #2-a were: a, (3); b, (4); c, (2-1/2); d, (3); and e, (2-1/2).

[z]The average composite indices to #10 for the atypical respondents to #2-c were: a, (4); b, (4-1/2); c, (2); d, (2-1/2); and e, (2).

These findings may again reflect either a strong market orientation, a characteristic of the internal operations of the firm, or an attitude of top management. This group may believe that, although immediate sales and dealers' desires are important, they are not measurable, and thus accurate planning is impossible. Thus little attention is given to the appropriation process as a planning device, but major emphasis is given to it as a departmental goal. Following the latter reasoning, the group desiring to use the budget as a planning device is forced to emphasize the more tangible and measurable standards, such as funds and inventory.

In another set of relationships, the group ranking the goal aspects of the budget highest ranked advertising costs as a percentage of profits as fourth, and success of past advertising as first. The group of respondents ranking the goal aspects of the budget lowest rated these standards as second and third respectively (see Table 41).

Apparently the group believing that the appropriation serves as a guide for the advertising department felt the function is best measured by the accomplishment of past efforts. As such, they gave a low ranking to the factor related less directly to their individual efforts--percentage of profits.

One group of respondents stated that they would offer advertising that would benefit society without regard to its productivity. This group ranked the target aspects of the appropriation higher and the control aspects much lower than did those who were not willing to offer

TABLE 41

PURPOSES OF THE BUDGET COMPARED TO DECISION STANDARDS OF TOP MANAGEMENT

#18: Rank the following according to the weights top management would attach to them in establishing the budget.*	#2: Rank the following reason for establishing a definite appropriation.+	
	c: Departmental Target	
Selected Factors	Typical Rank: 3rd	Atypical Rank: 1st**
a: Success of Past Advertising	3	1 (t)
b: Per cent of Profits	2	4

*Factors and associated composite indices for #2: a) makes for considerable thought and planning before the final decision (29), b) makes available to top management an evaluation or control instrument (22), and c) provides a target toward which the advertising department may aim (21).

+Factors and associated composite indices for #18: a) success of some past advertising program (23), b) advertising costs as a per cent of profits (35), c) the importance of dealer sooperation (39), and d) the need to maintain long-run goodwill (23).

**The average composite indices for the atypical respondents in #18 was: a, (3); b, (1-1/2); c, (3), and d, (2-1/2).

such advertising (see Table 42). The former respondents may view their functions as relatively autonomous and free from detailed control. This permits greater discretion in choosing the immediate purpose of advertising than does the situation existing for the latter group of respondents.

The fact that decisions are not made solely in terms of sales productivity, however, does not necessarily imply a lack of identification with the firm. Should the firm endorse certain altruistic motives or

TABLE 42

THE PURPOSES OF THE BUDGET COMPARED TO SERVICE MOTIVE VERSUS SALES PRODUCTIVITY*

#22-b: Are you ever motivated to offer advertising which would benefit society whether or not it would sell any tires?+	#2: Rank the following possible reasons for establishing a definite appropriation.** Factors	Weighted Average Index	Average Rank
Yes	a: Preplanning Aspects	2-2/7	1 (t)
	b: Control Instrument	1-6/7	3
	c: Departmental Target	2-2/7	1 (t)
No	a: Preplanning Aspects	2-1/4	2
	b: Control Instrument	4	1
	c: Departmental Target	1-1/4	3

*Although this study does not examine the cardinal difference between the indices assigned to the various factors, some attention might be directed toward them. In Table 42, for example, the "yes" respondents illustrated (in the average index) a difference between their 1st and 3rd choices of 3/7 of one unit, while those answering "no" had a difference of 2-3/4 units.

+Responses to #22-b: Yes (7), No (4).

**Responses and composite indices to #2: a) makes for considerable thought and planning before the final decision (29), b) makes available to top management an evaluation or control instrument (22), and c) provides a target toward which the advertising department may aim (21).

service objectives, such behavior may merely reinforce one aspect of institutional accomplishment. In addition, sales productivity may be viewed as a short-run objective for advertising, while some service objective may be the expression of a long-run goal. Altruism may not be involved: Striving to meet the service objective may favorably affect the long-run sales potential.

Again, this set of answers seems consistent. Where the goal aspects of the budget are ranked high, sales conditions and dealers' desires are ranked high as appropriation determinants. These two factors appear to be directly related to the choice of an over-all objective of advertising. It appears natural that operating standards should be so related to the general objective of the function. This also seems to be true for the emphasis upon the past productivity of advertising and the de-emphasis upon advertising costs as a per cent of profits, where profits reflect the effectiveness of all functions of the enterprise.

Where the preplanning aspects of the budget are ranked high, the more measurable standards are dominant. In one case, current liquidity and inventory position are emphasized; in another case, it is percentage of profits. It seems likely that detailed planning requires tangible and measurable standards. Moreover, where the control aspects are ranked relatively low, the respondents show greater discretion as to the choice of the ends to be accomplished by a specific advertisement.

Review and supervision of expenditures. The respondents' perceptions of the nature and extent of control exercised by their firms varied, and the differing views showed a distinct relationship with the weights assigned to selected appropriation determinants. For those who indicated that considerable supervision is performed during the fiscal period, both financial liquidity and inventory position were ranked higher than for those stating that only little supervision is performed. Dealers' demands were ranked relatively high by the latter respondents (see Table 43).

As with the purposes of the budget, for those respondents de-emphasizing funds and inventories, less control was evidenced. Other

TABLE 43

SUPERVISION OF EXPENDITURES COMPARED TO CONDITIONS FOR INCREASING THE BUDGET

#8-b: After the budget is approved, little supervision of the expenditures is given by top management.*	#10: Rank the following conditions which might elicit an increase in the budget according to the weights which top management would attach to them.+		
	Selected Factors	Weighted Average Index	Average Rank
True, or More True Than False	b) Dealers' Demands	4-1/2	1
	d) Increased Funds	2-1/4	2
	e) Growing Inventory	2-1/4	4 (t)
False, or More False Than True	b) Dealers' Demands	2-7/8	3 (t)
	d) Increased Funds	3-2/7	1
	e) Growing Inventory	2-1/6	2

*Responses to #8-b: T (2), MTTF (2), MFTT (4), F (5).

+Factors and associated composite indices to #10: a) fall in sales (25), b) demands from dealers (33), c) suggestions of salesmen (22), d) availability of increased funds (40), and e) a growing quantity of finished-goods inventory (30).

than the explanations previously offered, the following conjectures might be made: Top management may place more confidence in the organizational ability and integrity of the advertising manager, or there may be an undisclosed system of control.

However, another set of relationships showed that the respondents who stated that little review and supervision are made of the expenditures after budget approval ranked the control aspects of the budget relatively high. According to Table 44, this group also ranked the preplanning aspects as third, and the goal aspects of the appropriation as first. Where considerable supervision is exercised, the preplanning that the

appropriation decision affords was ranked as its major advantage. For these latter respondents, the use of the appropriation as a guide to the department was ranked third.

TABLE 44

SUPERVISION OF EXPENDITURES COMPARED TO PURPOSES OF THE BUDGET

#8-b: After the budget is approved, little supervision is given the expenditures by top management.*	#2: Rank the following reasons for establishing a definite appropriation.+		
	Factors	Weighted Average Index	Average Rank
True, or More True Than False	a: Thought and Planning	1-1/2	3
	b: Control Instrument	2-1/4	1 (t)
	c: Departmental Target	2-1/4	1 (t)
False, or More False Than True	a: Thought and Planning	2-7/8	1
	b: Control Instrument	1-7/9	2
	c: Departmental Target	1-1/2	3

*Responses to #8-b: T (2), MTTF (2), MFTT (4), F (5).

+Factors and associated composite indices to #2: a) makes for considerable thought and planning before the final decision (29), b) makes available to top management an evaluation or control instrument (22), and c) provides a target toward which the advertising department may aim (21).

One explanation for this relationship may be that these two aspects of control are interchangeable. If top management expects and gains adherence to the budget, control may be as effective as if continual review and supervision were performed. Another explanation may be that where review of the advertising expenditures is a continuing activity, the budget is, or must be, highly flexible. Such flexibility, however,

precludes its use as a stable and definite performance standard, i.e., flexibility reduces its usefulness as a goal for the operating department.

All respondents who indicated that little supervision is exercised stated that the inability of the sales organization to meet a new demand is one of the least curtailing influences upon budget proposals. On the other hand, two-thirds of those who believed that continual supervision is performed stated that this was one of the most curtailing factors. (see Table 45).

TABLE 45

THE SUPERVISION OF EXPENDITURES COMPARED TO CURTAILING INFLUENCES IN BUDGET PROPOSALS*

#8-b: After the budget is approved, little supervision of the expenditures is given by top management.+	#11-a: Choose two of the following factors which would exert the greatest downward pressure upon the budget proposal. Two least.**	
	a) Distribution Capacity	
	Most	Least
True, or More True Than False	0	4
False, or More False Than True	4	2

*Chance probability: 16 per cent.

+Responses to #8-b: T (2), MTTF (2), MFTT (4), F (5).

**Responses to #11-a: a) the sales organization not being prepared to meet the new demand: Most (4), Least (6); b) production capacity not available: Most (11), Least (1); c) an inability to prove the productivity of advertising: Most (1), Least (5); d) a decline in competitor advertising: Most (0), Least (10); and e) a reduction in the working capital position: Most (9), Least (2).

The fact that the adaptability of sales organization was ranked as one of the least curtailing influences may indicate either that few of the marketing inputs are of a fixed nature or that excess distribution capacity exists. Excess capacity may indicate a long-run goal in terms of growth or security for advertising efforts. A long-run objective may operate so as to reduce the need or opportunity for continual supervision of immediate expenditures. Performance may be judged infrequently, in terms of accomplishment over relatively long periods of time, rather than continuously, in terms of the immediate employment of inputs and their associated costs. In the case of highly variable distribution inputs, the ability to adjust immediately once a deviation from standard is observed may reduce the need for continual supervision.

The answering patterns stemming from differing views concerning the amount of supervision after budget approval appear consistent. Moreover, they reinforce the findings and conclusions in many of the previous sections.

The group which stated that little supervision was performed ranked dealers' desires high as an appropriation determinant. If this standard reflects a long-run objective, the relationship appears to coincide with the findings with respect to the adaptability of the sales organization. If the ability of distribution facilities to meet new demand indicates excess capacity, the long-run objective may again be emphasized, with little supervision performed after budget approval.

Where continual supervision is exercised, control was ranked relatively low as a purpose of the appropriation. Thus these two aspects of control may be substitutable for each other. Continual review may

preclude the use of the budget as a goal because of the flexibility imputed to the standard.

Personal and Organizational Factors Related to the Decision Process

Willingness to sell company stock. One group of respondents stated that they would sell company stock which they owned if a fall in price were forecast, assuming that they could hold their current positions and salaries. This group believed that the limitation of the sales organization was one of the most important downward pressures upon budget proposals. This factor was selected as least important by six of seven respondents answering that they would not sell their stock (see Table 46).

TABLE 46

WILLINGNESS TO SELL COMPANY STOCK COMPARED TO CURTAILING INFLUENCES ON BUDGET PROPOSALS*

#22-h: Suppose you can own company stock, the price of which you think will fall, and you can hold your present salary. Would you sell that stock?	#11: Choose two of the following factors which would exert the greatest downward pressure on the budget proposal. Two least.**	
	a) Inflexibility of the Sales Organization	
	Most	Least
Yes	3	0
No	1	6

*Chance probability: 7 per cent.

+Responses to #22-h: Yes (4), No (7).

**Responses to #11: a) the sales organization not being prepared to meet the new demand: Most (4), Least (6); b) production capacity not available: Most (11), Least (1); c) inability to prove the productivity of advertising: Most (1), Least (5); d) a decline in competitor advertising: Most (0), Least (10); and e) a reduction in working capital position: Most (9), Least (2).

To a major extent this relationship can only be treated as a challenging curiousity. Perhaps the explanation lies in the reason for the view that the sales organization is not adaptable. In another case, four of five respondents stating that they would not sell their company stock under the conditions described above said that to meet the original budget is a mark of success in the eyes of top management. Table 47 shows that all respondents who indicated that they would sell their stock stated that it is not a mark of success to meet the budget limitations.

TABLE 47

WILLINGNESS TO SELL COMPANY STOCK COMPARED TO THE STRICTNESS IN APPLYING THE BUDGET*

#22-h: Suppose you own company stock, the price of which you think will fall, and you can hold your present salary. Would you sell that stock?+	#8-c: Top management views it as a mark of success if the manager does not spend more than the amount appropriated for advertising.**	
	True, or More True Than False	False, or More False Than True
Yes	0	6
No	4	1

*Chance probability: 9.8 per cent.

+Responses to #22-h: Yes (4), No (7).

**Responses to #8-c: T (0), MTTF (6), MFTT (3), F (4).

Assuming that the willingness to sell the stock indicates a lack of personal identification with the firm, high identification appears to be associated with less supervision of advertising expenditures. It may

be that rigid controls create a defensive attitude and a defensive attitude results in less identification with the organization. This attitude permeates decisions both directly and indirectly (the sale of personally-owned company stock) related to the organization. On the other hand, if control techniques are substitutable for each other, measuring success in terms of meeting the budget restriction may be a relatively ineffective means of control. If such is the case, the exercise of this control technique, rather than of one imposing more restraint, may promote or enhance a reduction in identification. Perhaps the relationship is explained by the size of the firm and the degree of specialization thereby required.

Subordinates' criteria for judging managers. According to Table 48, differing views of subordinates' criteria for judging managers showed certain relationships with the purposes of the budget. The respondents who ranked the preplanning aspects of the budget lower and the target aspects higher than the typical respondent showed an atypical ranking of subordinates' criteria. These respondents ranked the manager's knowledge of the advertising business lower and his ability to get salary increases for his subordinates higher than the typical respondent.

This group of respondents, in looking upward in the organization, view an administrative decision as a goal for their departments, rather than as an opportunity to plan and think about the decision. In looking downward, they perceive subordinates' standards defined in terms of subordinates' welfare, as contrasted to those standards which reflect most directly the ability of the executive. Suboptimization appears to be indicated.

TABLE 48

SUBORDINATES' CRITERIA OF MANAGEMENT COMPARED TO THE PURPOSES OF THE BUDGET

#23: Rank the following characteristics according to the weights which subordinates give them in judging the advertising manager.*	#2: Rank the following reasons for establishing a definite appropriation.+

	Selected Factors			
	a: Preplanning Aspects		c: Departmental Goal	
Selected Factors	Typical Rank: 1st	Atypical[y] Rank: 3rd	Typical Rank: 3rd	Atypical[z] Rank: 1st
a: Gets Raises for Subordinates	3	1 (t)	3	2 (t)
c: Knows Advertising Well	1	4	1	2 (t)

*Factors and composite indices for #2: a) makes for considerable thought and planning before the final decision (29), b) makes available to top management an evaluation or control instrument (22), and c) provides a target toward which the advertising department may aim (21).

+Factors and composite indices for #23: a) gets raises in salaries for his subordinates (28), b) is not too strong a "taskmaster" (18), c) knows the advertising business well (43), and d) is able to sell his subordinates' ideas to top management (30).

[y]The average composite indices to #23 for the atypical respondents to #2-a were: a, (3); h, (2-1/2); c, (1-1/2); and d, (3).

[z]The average composite indices to #23 for the atypical respondents to #2-c were: a, (2-1/2); b, (3); c, (2-1/2); and d, (2).

This behavior does not necessarily imply organizational irrationality. Giving primary attention to subordinates' desires when the purpose of the appropriation is to provide a yardstick for measuring departmental performance may be very rational behavior. Meeting subordinates' desires

probably favorably affects their productivity and such action may cause actual performance to approximate most closely the performance criterion.

In another instance, one group of respondents ranked "not being too strong a taskmaster" higher and the advertising manager's knowledge of the advertising business lower than the typical respondents. This group, when asked about the standards employed by the members of a local advertising club in judging a candidate for office, ranked the candidate's ability to write good copy and his business position higher than the typical respondent. In addition, they ranked activity in civic events and conference-leadership ability low (see Table 49).

Assuming that these latter criteria are better measures of ability to officiate in the local club than business title or ability to write copy, the respondents do not believe that the members of the local club attached much significance to standards reflecting the capacity to perform in that particular organization. Apparently this was also true for the business firm, because they felt that subordinates ranked knowledge of the advertising business relatively low. If, however, the respondents were not projecting or judging current members of the two groups, but expressing their attitudes as they would react in such situations, they may have been demonstrating highly integrated personalities. They may have been applying their individual value structures without regard to specific organizational needs. Perhaps they are forced to adjust less completely or perceive fewer restrictions upon their personal values in either organization than did the typical group of respondents.

Election criteria in advertising clubs. It was not the respondents who characterized advertising managers as technically minded who ranked activity in civic events low as an election criterion. A "technically

TABLE 49

SUBORDINATES' CRITERIA FOR JUDGING MANAGERS COMPARED TO ELECTION CRITERIA IN ADVERTISING CLUBS

#21: Rank the following characteristics according to the weights members of the local club attach to them in voting for a candidate for office.*	#23: Rank the following characteristics according to the weights which subordinates place upon them in judging the advertising manager.+

	Selected Factors			
	b: Not too Strong a Taskmaster		c: Knows Advertising Business Well	
Selected Factors	Typical Rank: 4th	Atypical[y] Rank: 1st	Typical Rank: 1st	Atypical[z] Rank: 4th
a: Writes Good Copy	5	2	5	2
c: Activity in Civic Events	1	3	1	3
d: Conference Leadership Ability	2	4	2	4 (t)
e: Business Title	3	1	3	1

*Factors and composite indices to #23: a) gets raises in salary for his subordinates (28), b) is not too strong a taskmaster (18), c) knows the advertising business well (43), and d) is able to sell his subordinates' ideas to top management (30).

+Factors and composite indices in #21: a) ability to write good copy (19), b) deals with the largest appropriation (32), c) his activity in community or civic events (50), d) ability to lead group discussions (44), and e) the title or position which the candidate holds in his business organization (34).

[y]The average composite indices to #21 for the atypical respondents to #23-b were: a, (4); b, (1); c, (3); d, (2); and e, (5).

[z]The average composite indices to #21 for the atypical respondents to #23-c were: a, (4); b, (1); c, (3); c, (1); and e, (5).

minded" executive is defined as one who devotes more time to the mechanical perfection of an advertisement than to its pulling power. For the two respondents who stated that advertising managers were of this nature, the size of the appropriation with which the candidate deals was ranked higher, and the candidate's activity in civic events was ranked lower than was the case for the typical respondent (see Table 50).

TABLE 50

ELECTION CRITERIA IN ADVERTISING CLUBS COMPARED TO MECHANICAL PERFECTION VERSUS SALES PRODUCTIVITY

#21: Rank the following voting criteria according to the weights which members of the local advertising club attach to them.*	#22-e: Managers in your industry spend more time with the mechanical perfection than they do with pulling power.+			
	All Respondents		Atypical Respondents** (Those Answering Yes)	
Selected Factors	Composite Indices	Average Rank	Average Indices	Average Rank
b: Largest Appropriation	32	4	4-1/2	1
c: Activity in Civic Events	50	1	3-1/2	2 (t)

*Factors and composite indices in #21: a) ability to write good copy (19), b) deals with the largest appropriation (32), c) his activity in community or civic events (50), d) ability to lead group discussions (44), and e) the title or position which the candidate holds in his business organization (34).

+Responses to #22-e: Yes (2), No (10).

**The average composite indices for #21 for the atypical respondents to #22-e were: a, (1-1/2); b, (4-1/2); c, (3-1/2); d, (3-1/2); and e, (2).

Again, this relationship deserves further research. The explanation, however, may not be found in terms of organizational rationality. To the extent that mechanical perfection is gained at the expense of sales productivity, organizational rationality in the situation may be lacking. Nonetheless, mechanical perfection may reflect an effort to gain prestige for the firm rather than prestige for the individual. Advertising, a determinant of the character role of the firm, may be directed toward the attainment of a quality reputation. Mechanical perfection in advertising may enhance this reputation.

Miscellaneous Relationships Discovered

The importance of highly measurable standards. According to Table 51, one group of respondents ranked good will and dealer cooperation higher and the success of past advertising and percentage of profits lower than did another group. In this relationship, those who stressed the least tangible and measurable standards--good will and dealer cooperation--did not show an awareness of a common practice in the sense of a set of cost items to be included in the budget. An insensitivity to this practice, if indeed such a practice does exist--and some respondents did acknowledge such a practice--may relate to an indifference to such a practice. Perhaps this group believes that productivity of advertising should be defined in terms of building good will and meeting dealers' needs. If this is the case, they are unconcerned with the specific practice of others in the industry. Moreover, they do not emphasize such measures of past or current performance as past advertising and percentage of profits; they employ forward-looking measures.

TABLE 51

PERCEPTIONS OF ACCEPTED COST ITEMS COMPARED TO DECISION STANDARDS OF TOP MANAGEMENT

#13-d: Agreement exists in the industry as to the cost items which should be included in the appropriation.*	#18: Rank the following according to the weights that top management gives them in establishing the appropriation.+		
	Factors	Weighted Average Index	Composite Rank
True, or More True Than False	a: Past Advertising	2	3
	b: Per Cent of Profits	3-1/2	1
	c: Dealer Cooperation	3-1/6	2
	d: Goodwill	1-1/3	4
False, or More False Than True	a: Past Advertising	1-2/5	4
	b: Per Cent of Profits	2-3/5	3
	c: Dealer Cooperation	3-2/5	1
	d: Goodwill	2-4/5	2

*Responses to #13-d: T(1), MTTF (5), MFTT (3), F (2).

+Factors and associated composite indices in #18: a) success of some past advertising (23), b) advertising costs as a per cent of profits (35), c) the importance of dealer cooperation (39), and d) the need to maintain long-run goodwill (23).

The other group appeared to be searching for highly measurable standards upon which to base their appropriation. They acknowledged, that there were accepted industry cost items, and ranked percentage of profits and past sales relatively high. This may reflect little credence in the productivity of advertising or merely a management attitude which stresses highly measurable performance standards.

Relative authority of the advertising manager. One pair of related questions showed no relationship with any of the other questions

presented in this chapter. All five of the respondents stating that the production executive has more authority than the advertising manager ranked a reduction of other selling costs as one of the most likely sources of revenue for increased advertising. As shown in Table 52, two out of the three respondents who indicated that the manufacturing executive does not have relatively greater authority ranked a reduction of other selling costs as one of the least likely sources. Apparently the chief manufacturing executive sometimes influences the selection of the source of funds for increased advertising; where he does, his influence may be to force a rather constant total advertising-and-selling-cost budget.

TABLE 52

RELATIVE AUTHORITY OF THE MANAGER COMPARED TO THE SOURCE OF FUNDS FOR INCREASED ADVERTISING*

#8-f: The chief production executive makes decisions involving larger expenditures of funds than does the advertising manager.+	#12: Suppose the company desired to increase the amount of advertising effort, which two of the following would most likely be chosen? Two least likely?**	
	b) Reduce Other Selling Costs	
	Most	Least
True, or More True Than False	5	0
False, or More False Than True	1	2

*Chance probability: 21 per cent.

+Responses to #8-f: T (4), MTTF (2), MFTT (0), F (6).

**Responses to #12-b: a) absorb the increased costs from profits: Most (11), Least (0); b) reduce other selling costs: Most (6), Least (2); c) increase prices: Most (2), Least (8); d) decrease the quality of the advertising: Most (0), Least (11); and e) reduce manufacturing costs: Most (5), Least (3).

Summary

The method of analysis in this chapter differed from that of Chapter V. The approach in this chapter was to examine answering patterns, i.e., related answers to pairs of questions, while the preceding chapter determined typical attitudes and actions. Since there appeared to be a natural organization of the findings, the presentation in this chapter relies upon the nature of these disclosures.

The study of relationships among answers revealed certain patterns that made it possible to classify the firms into groups having similar behavioral characteristics. Those of greatest significance stemmed from questions concerning the following areas: (1) the isolated productivity of advertising, (2) the sensitivity to the need for changing the appropriation, (3) the purposes of establishing a definite appropriation, and (4) the amount of control of expenditures after budget approval.

One pattern, for example, stemmed from the confidence expressed in the isolated productivity of advertising. Productivity was expressed in terms of the ability to sell growing quantities of inventories, which is interpreted as a short-run sales objective. The group least confident of the productivity of advertising ranked dealers' desires relatively high and inventories relatively low as appropriation determinants. The respondents least certain of the immediate sales productivity of advertising felt that advertising was indispensable in selling to dealers. Thus advertising appears to be designed and measured according to one or the other of two basic objectives. Finally, the group least convinced of the short-run productivity of advertising did not mechanically relate the appropriation to short-run changes in the sales forecast, while those most convinced did so relate the appropriation to the sales forecast.

Although the answers of the respondents appeared consistent in most cases, explanations could not be found for some of the relationships. In one set of answers, three variables were disclosed: (1) a reduction in the appropriation in the light of a falling sales response, (2) relatively little credence placed in the existence of price leadership, and (3) greater emphasis placed upon financial liquidity than upon inventory position as an appropriation determinant. The relationship between the various responses to the stem question (the effect upon the appropriation of a falling sales response) and each of the other two variables could be explained but the total behavioral pattern could not.

In some instances the true nature of the cause and effect relationship could not be determined. For example, whether the behavior stemmed from an internal or an external orientation could not be deduced in the relationship between the sensitivity of the process and the amount of supervision of expenditures. An insensitivity to minor changes in the market might permit the goal aspects of the budget to be emphasized which in turn would reduce the need for continual review and supervision. On the other hand, lack of continual supervision might cause insensitivity to minor changes in the market place.

Strong relationships existed between the perceptions of the external environment and the characteristics of internal operations of the firm. In one case, the specific purpose of advertising, in terms of protecting prices versus maintaining volume, was related to the strictness with which the budget limitations were applied.

Moreover, there were relationships disclosed wherein both questions pertained only to the external environment or wherein both questions involved only internal characteristics of the firm. In the former case,

for example, a relationship was discovered between the belief expressed in the isolated productivity of advertising and the importance given to advertising in selling to dealers. In the latter case, the sensitivity of the process to the need for changes was related to the amount of supervision given advertising expenditures after final approval of the budget.

Some of the relationships involved questions which were designed to reveal some aspect of the personal motivation of advertising managers. One question asked whether or not advertising managers were more concerned with the mechanical perfection of an advertisement than with its productivity. If so, such managers were considered technically minded. A second question pertained to election criteria for candidates for office in a local advertising club. The answering patterns to these two questions were related. The explanation was offered that the relationship might rest in the degree of organizational rationality of the managers.

In a few instances organizational irrationality appeared to exist. For example, one set of relationships suggested the possibility of suboptimization. Here, one group of respondents, in looking upward in the organization, perceived an administrative decision as a goal for their departments, rather than as an opportunity to plan and think about the decision. In looking downward, they perceived subordinates' standards defined in terms of subordinates' welfare, as contrasted to those standards which reflect most directly the ability of the executive. However, as in all situations where motives are analyzed, motivation cannot be interpreted with complete certainty. In the case of the

technically minded manager, mechanical perfection may reflect an effort to gain prestige for the firm rather than prestige for the individual.

In general, the patterns of behavior were most susceptible to interpretation in terms of organizational rationality. Moreover, the responses were highly consistent. The obvious example is the instance where the respondents stated that advertising was indispensable in selling to dealers and ranked dealers' desires as a very important decision standard. A less obvious example is the case of the group of respondents who appeared to be searching for highly measurable standards upon which to base their appropriation. They believed there was general agreement by the industry upon the cost items to be included in the advertising budget, and ranked percentage of profits and past sales relatively high.

CHAPTER VII

SUMMARY AND RECOMMENDATIONS

The Nature of the Study: A Restatement

Purpose. The purpose of this study has been to examine certain aspects of decision-making in business. For this purpose, selected characteristics of the advertising appropriation in the rubber tire industry were examined.

The research was carried out in three main stages. The first involved a study of the literature on decision-making. At this stage, Chapter II summarizes the conventional formal variables and rules for profit-maximizing decisions. Chapter III presents, in a descriptive manner, the decision behavior of a professional manager operating within a management hierarchy or organizational context. Thus, the material presented at this stage was drawn from both economic science and organization theories.

Stage two of this study was an examination of the nature and behavior of firms in the tire industry. Chapter IV, the material for which was drawn from secondary sources, enables the reader better to understand the problems faced by the industry. The conditions and practices of the members of the industry and its general environment determine the alternative formulations available to decision-makers. A knowledge of these variables is prerequisite to understanding the premises employed and the characteristics of the decision process.

The concluding step of this study was empirical research. For this step, both interviews and a questionnaire were used. Although the interviewee was directly involved with the advertising appropriation or was a subordinate of some one so involved, executives other than advertising managers were interviewed. The addressee of the questionnaire was the highest executive in the management hierarchy whose principal responsibility was advertising. The results of the empirical research are presented in Chapters V and VI. The first of these focuses upon typical responses to the questionnaire and presents the results of the interviews. Chapter VI gives the relationships among questionnaire answers, thus disclosing answering patterns.

Limitations and reliability of the data. Since the purpose of this study was chiefly to describe decision behavior, most of the effort was directed toward description and not interpretation. This restriction became a very strong limiting factor with respect to framing the questions for the interviews and questionnaire, and was quite apparent in the presentation of the findings.

The major limitation, however, stems from the attempt to keep one major set of decision variables constant for the respondents. To meet this end, a single industry was chosen. Because of this, the size of the universe was restricted and the number of acceptable cases was small. Only 13 firms answered the questionnaire; this return constituted 93 per cent of the firms deemed acceptable. The remaining firm, although it did not answer the questionnaire, did respond fully to the interviews. The total of those who responded omitted answers to only $5\frac{1}{2}$ per cent of the items on the questionnaires.

Another limitation stems from the fact that the questionnaire was answered during July and August of 1956. It is possible that many of the responses reflect the conditions and attitudes of that particular time period. In this light, the fact that the interviews were taken approximately nine months later has both the advantage and the disadvantage of a different time period.

Nonetheless, the empirical data appear to have considerable reliability. The findings from the questionnaire can be compared to the disclosures of the secondary data. In two cases direct comparisons could be made. One of these cases pertained to excess capacity, the other to follow-the-leader pricing in the industry. The results of the questionnaire indicated the presence of both of these factors--as did the secondary data. The response concerning price leadership is most significant because of the stigma attached to this practice in some quarters. Apparently, the respondents perceived the environment accurately and answered truthfully. In almost every instance the interviewees supported the findings of the questionnaire.

In a few cases a conflict with the secondary data was noted. For example, there was not a strong agreement with respect to the existence of a higher price for the large firms than for the small. The secondary data seemed to indicate that such was the case. If the secondary data are accurate, this conflict may result from ignorance on the part of certain respondents rather than from dishonesty. This seems to be the case, since the interviewees showed the same confusion. If so, the empirical results are not weakened because concern here is with perceptions of the real world, not the actual state of affairs.

Moreover, a great deal of consistency was found among the answers to questions that could be compared. A good example of this consistency is the comparison between the importance given to advertising in selling to dealers and the ranks assigned to dealers' desires as an appropriation determinant. The over-all behavioral patterns in general indicated such consistency. Where no majority response was found for a particular question, the consistency of the answering patterns disclosed in Chapter VI leads to the belief that the reactions to the question were truly mixed rather than marking errors.

When answers were compared, the comparison was made in many cases to the modal response rather than to the opposite extreme. Where the chi square test for independence was used, a "small-numbers" adjustment was made. Lastly, the data were not interpreted as representing the tire industry but in terms of the respondents who did reply. This conservatism is required because the tests of the data were neither refined nor thorough.

General Summary and Conclusions

Recapitulation of Chapters II and III. Although not all concepts presented in the introductory chapters were tested empirically, the material found therein provides the background of this study. The material was classified in two sections. The first of these, presented in Chapter II, concerned institutional rationality and was based upon conventional literature treating profit maximization.

The literature dealing with the productivity of advertising provided concepts concerning the use of advertising first as a single competitive

technique, and second as an element of some total sales mix. Also included in this section was an analysis of works treating such phenomena as risk-taking, strategy, and intertemporal substitutions arising from uncertainty in the environment and the stream of events associated with a going business. It was suggested that decisions deviating from short-run monetary profit maximization are not necessarily institutionally irrational. Decisions made to optimize both the amount and the security of an income stream meet the rationality requirements.

The second section, presented in Chapter III, concentrates upon literature concerned with the purposes and behavior of the professional manager operating in an organization context. It is suggested that the decision-maker acts according to his varied and divergent needs and desires; that is, the decision-maker is man and inherent to him is a complex of motives. Thus man's decisions can be controlled and harmonized only to a limited extent.

Here the literature examined pertained to the ends and means attributed to a nonowner manager. The proportion of income arising from owners' equities and the relationship between salary and financial success of the firm were used as standards in judging the degree of the owner-manager identity. Two facets of this concept were investigated: (1) decisions made to enhance the position or status of the individual without reference to formal goal accomplishment, and (2) the affinity of the decision-maker to reference and membership groups as contrasted to owners of the firm.

The second part of this section examined works treating the social characteristics of an economic institution, which may be either of a formal or an informal nature. Value structures of social systems are

internalized by the individual and therefore influence his orientations and perceptions. The internalization of the informal aspects of the institution may not necessarily direct individual behavior toward formal purpose accomplishment. Furthermore, the formal aspects may impede decisions associated with such ends.

Here concepts are presented that concern the fractionalization and diffusion of decision-making activity throughout the management hierarchy. At least two measures were used to indicate this structural characteristic: (1) the level in the hierarchy wherein the locus of accountability for decision-making rested, and (2) the existence of departmentalization. The suggestions offered include suboptimization in terms of the work unit and reactions to profit symbols communicated as standards of performance.

Findings from secondary sources. More than 500 firms have at some time been engaged in the production of rubber tires and tubes. Now, not more than 18 firms are so involved. The rubber tire industry is the third most concentrated manufacturing industry, with approximately 80 per cent of the output of tires and tubes accounted for by four firms. However, the product of the tire industry is not homogeneous; for example, more than 30,000 different types of passenger car tires are manufactured, differing as to size, style, grade, and brand. The section of the industry of most significance to this study, tire production of passenger car tires for the domestic replacement market, constitutes slightly less than one-half of automotive casing shipments.

The industry can be divided into three classes: one, the Big Four (over $750 million annual sales); two, General Tire (approximately $300 million annual sales); and three, the independents (not more than $90

million annual sales). The practices of the firms in each classification are not identical. Goodrich, for example, receives only 45 per cent of its sales from tires and tubes, while Firestone receives approximately 75 per cent. U.S. Rubber owns no retail outlets, while all other large firms do. However, certain characteristics among the Big Four are similar. Generally, all of them concentrate upon branded goods sold to the original equipment market, while the small firms are largely restricted to the replacement market. The latter concentrate their production upon premium tires, offer their dealers more advantages, and have higher production costs than do the large firms. The selling costs of the Big Four appear to have raised both the demand and the total cost curves so that their equilibrium price is relatively higher than that of the independents. Profits, moreover, are higher and more stable for the former than for the latter.

The industry is constantly faced with excess capacity. This problem is augmented by the seasonality of sales: Demand coincides with vehicle use and is, therefore, high in the summer and low in the winter. There have been numerous unsuccessful attempts to level demand; for example, by the introduction of mud and snow tires. In addition, the manufacturers are faced with complex channels of distribution and a large number of dealers. Although the importance of independent dealers is falling, considerable competition exists at the dealer level. In spite of the dissemination of suggested retail prices by the manufacturer and follow-the-leader pricing at the producer level, competition among dealers prevails because no penalties are attached to noncompliance with the suggested prices and because trade-in allowances cannot be controlled.

Competition at the manufacturer level seems to be in terms of product innovation and advertising. Advertising also appears to be the means by which entry to the industry is controlled. The characteristics of the original equipment market explain in part the advertising policies of the large firms. Certain price concessions might well be considered part of the advertising expense of the manufacturer, while some national advertising in the replacement market aids selling to the original equipment market.

Although the large firms do approximately 75 per cent of the advertising in the industry, advertising costs, as a percentage of selling and administrative expense, are the same for the small as for the large firm. For the industry, advertising expenses are slightly more than 2 per cent of sales and constitute about one-tenth of the total selling expenditures. National media expenditures are 20 to 25 per cent of the advertising in the industry, with the five largest firms doing approximately 90 per cent of such advertising. All firms in the industry offer some cooperative advertising. The small firms tend to emphasize this type of advertising, allocating approximately one-third more of their appropriation to cooperative advertising than do the large firms.

Findings from primary sources. According to the empirical evidence, the duties of the advertising manager involve certain administrative activities as well as those involved with the production and dissemination of advertising. Although he does not necessarily prepare the budget request, the manager does supervise its construction and reviews the proposal. His authority as defined in terms of the appropriations decision is severely restricted by a rule of thumb expressed as a percentage of sales. Although the decision process is relatively

insensitive to the need for changes during the fiscal period, the presence of a reserve item tends to give the budget certain flexibility.

Advertising was viewed as an alternative sales technique; its role varied according to perceptions of its isolated productivity. The use of advertising was also influenced by the share of the marketing effort allocated to advertising as one of several sales techniques. Advertising was given a greater role according to the degree of certainty concerning the presence of price-leadership in the industry--the greater the degree of the certainty of price-leadership, the more reliance placed upon advertising. The specific objective of advertising in terms of its temporal contribution influenced the variables brought to bear upon the appropriation decision as predicted by profit-maximizing behavior. Thus, the descriptive aspects of the thesis have a great deal of reliability.

However, judged solely in terms of institutional objectives, certain decision variables disclosed by the empirical data appeared irrational. For example, some of the respondents indicated that advertising managers might give more attention to mechanical perfection than to sales productivity and some stated that they would offer an advertisement without regard to its productivity. To the extent that these acts do not coincide with the institutional purposes, they are not profit-maximizing.

Certainly, little direct association appeared to exist between the immediate organizational "responsibleness" of the individual and his immediate economic welfare. For example, none of the respondents stated that a significant proportion of his income was obtained from ownership of the firm's securities. Fractionalization and diffusion of decision-

making were evident in the empirical data. The advertising manager operated generally at the third level of the management hierarchy, and the advertising department was but a section of the sales organization. Such characteristics reduced the degree of the relationship between the individual's contribution and the organizational purposes. Thus there was opportunity for personally rational acts at the expense of institutional rationality. Nonetheless, the majority of the responses were explainable in terms of institutional rationality.

With respect to the organizational variables, suboptimization by the advertising manager was noted in one instance. One group of respondents, for example, viewed an administrative decision as a goal for the advertising department rather than as an opportunity to plan and think about the function. Moreover, they believed that subordinates' standards are defined in terms of subordinates' welfare rather than in terms of advertising ability.

The role of the values of reference groups did not appear to be particularly strong in the advertising decision. However, the importance of reference groups was noted in several respects. This was most apparent during the interviews. The interviewees most distant from the advertising function were most critical of the function. Such executives indicated that reference groups were important to advertising people and that, in addition, advertising people were poor businessmen. Perhaps the difficulty of determining the role of reference groups stems from the vagueness of the questions or from invalid responses on the part of the advertising managers.

Two rather distinct patterns of behavior were noted concerning (1) the measurability of the standards employed in the decision and (2) the

base of the standards. It is possible that these two variables are related. In the first instance, some of the respondents appeared to search for highly measurable standards. They emphasized percentage of profits as a standard and believed that there was a set of cost items common to the industry. Another group emphasized good will and dealers' demands as appropriation determinants, and did not recognize such industry agreement upon cost items. There was one group of respondents that consistently ranked inventory position and financial liquidity higher than standards based upon conditions in the market place, e.g., dealers' desires. Nonetheless, the pattern of responses appeared logical. The group emphasizing the measurable standards ranked the planning aspect of the budget relatively high. Perhaps more detailed planning requires more tangible and measurable criteria. In the other case, dealers' desires probably reflect a long-run objective. If this is so, it seems reasonable to expect them to give less attention to short-run changes in the inventory position--as was the case.

Although all possible pairs of questions were examined, in Chapter VI only those cross analyses were presented wherein a relationship was indicated. Selecting the cross analyses to be presented upon this basis has the attribute of simplicity. However, independence among answers may be as important as relatedness.

A strong relationship was anticipated between the diverse views of the external characteristics and the nature of the decision process. Yet, in only one instance was such a relationship disclosed. Furthermore, no relationships were discovered between perceptions of the market and the varying sources of funds for additional advertising expenditures. One explanation for this absence may be that fewer deviations from a

modal response were found for the questions concerned with the external environment than for those treating characteristics of the organization or relating to the personal variables.

Most of the cross analyses concerned relationships between perceptions of the internal characteristics of the firm and the properties of the decision process. Of those comparisons that could be made to perceptions of the external environment, the relationships in terms of the effects upon the appropriation of a fall in advertising productivity were most numerous. On the other hand, contrary to expectations, no relationships were disclosed between the personal characteristics of the manager and factors influencing the appropriation.

By far the most significant relationship absent from this study was that between the perceptions of personal variables and the varying weights given the appropriation determinants. Differing roles given to, for example, prestige or reference groups had been suggested as influencing the importance assigned the various decision standards. This did not prove to be the case. Numerous significant relationships were found, however, between the variables of the "personal" category and characteristics of the decision process, as well as between the latter properties and the decision standards. Although indirect relationships may possibly exist between the "personal" variables and the decision standards, they can be established only through the most tenuous of inferences.

Suggestions for Further Research

Certain suggestions can be offered concerning future studies of this nature. In order to generalize, a larger universe appears warranted.

This might apply even at the expense of a universe wherein the firms confront different product markets. On the other hand, future studies might gain from more comparability among the firms in the universe. This might enhance the discovery of nonrational variables and their influences. Choosing executives associated with functional areas having more measurable standards of productivity might add materially to a study of this nature. Perhaps such findings could be compared to those associated with functional areas having relatively intangible and immeasurable results. Functions of the latter type might include, along with advertising, executive development and product engineering.

With regard to empirical techniques, emphasis might be given to the measurability of the data obtained. The questions in the questionnaire might be framed and standardized in such a way that response classifications could be quantified and compared in some manner to such objective standards as firm size in terms of the management hierarchy or sales volume. Other validation criteria might be the degree of centralization of authority for decision-making or the basic marketing policy of the firm. From these more objective standards some conclusions might be reached as to why a particular respondent falls into one answering pattern rather than another. The validation might take the form of comparisons with the financial success of the organization. All in all, it is hoped that this type of study will be continued and future researchers will profit by this presentation.

APPENDIX A

THE INDUSTRY QUESTIONNAIRE AND LETTER OF ENCLOSURE

MICHIGAN STATE UNIVERSITY
Of Agriculture and Applied Science • East Lansing

College of Business and Public Service • Department of General Business

June 27, 1956

Mr. F. J. Tucker
Director of Advertising
Tire & Equipment Division
The B. F. Goodrich Company
Akron 18, Ohio

Dear Mr. Tucker:

In an effort to learn more about business decisions, I have developed a project for studying the conditions and methods for determining the advertising appropriation in the rubber tire and tube industry. You have been contacted because of your relationship with an advertising department in that industry.

The insight held by the practical business man often seems to him to be commonplace. As such he is not aware of the importance of his knowledge and perception to students of business management. Available materials and their interpretations as explanations of advertising decisions have been examined. However, they must be tested in the light of actual practice in the real world. Therefore, we have come to you, as a major executive involved in the appropriation decision, in order to add to the information available.

Since the number of firms in the sample is very small, it is of utmost importance to the study that I receive your response to the enclosed questionnaire. Even though no confidential information has been requested, the results will be presented in such a way that no single firm will be identifiable. Since responses will be held in the strictest of confidence and the names of respondents will not be divulged, will you please cooperate in this endeavor?

If you tear off the number in the upper right hand corner and answer the questionnaire, your response is not identifiable. However, if you find it impossible to respond, will you state your reasons and return the questionnaire? I am very willing to attend a personal interview or you may feel free to contact me by phone, collect.

If you wish, an abstract of our findings will be made available to you. I would like to thank you sincerely in anticipation of your cooperation.

Sincerely yours,

Fremont A. Shull, Jr.
Instructor, Management

FAS: dg

Enclosures

Respondent's Title _____ Date _____

Title of the Advertising Manager's immediate superior _____

Part I: The questions in this section pertain to the decision process itself, and the nature and purpose of establishing an advertising appropriation.

(1) Which of the following statements best describes the method which your firm uses in determining the advertising appropriation? The method is:

	Check one
a. well standardized and expressed in a policy statement or manual	
b. semi-standardized and may vary from time to time and is not expressed in written form	
c. not standardized and in the man is different each planning period	

(2) The following are possible reasons for establishing a definite appropriation in your firm. (Rank in order of importance as 1st, 2nd, and 3rd)

	Rank
a. makes for considerable thought and planning before the final decision	
b. makes available to top management an evaluation or control instrument	
c. provides a target toward which the advertising department may aim	

(3) Which of the following best reflects your company's attitude toward advertising reserves?

	Check one
a. no reserves: the advertising department must live within the budget as originally determined	
b. no definite reserves but additional funds are available for a reasonable request	
c. a definite reserve policy, including the magnitude of the reserve	

(4)

	Yes	No
a. Are decisions with respect to the advertising appropriation made because of the arrival of some pre-determined planning date rather than made concurrently with basic decisions concerning other marketing activities?		
b. In decision-making, would you use information which you consider to be incomplete rather than not use that information at all?		

(5) At what point would you think it worthwhile to revise, during some fiscal period, the advertising appropriation? Where the change would involve the adjustment in the current total appropriation of: (a) less than 3% _____ (b) 3-5% _____ (c) 6-10% _____ (d) more than 10% _____

Part II.: In the following section, the answers to the questions are to reflect organizational influences which affect the advertising appropriation decision.

(6) Please check the type of contribution which the following executives make while participating in the advertising appropriation decision.

Participant	His usual contributions are: Research or advice	Approval required	Review and control	None
President				
Top production executive				
Sales Manager				
Chief Finance Officer				

(7) The following are standards which might be used for judging the advertising manager according to the reliance which top management places upon them. Rank in order of importance as 1st, 2nd, 3rd, 4th.

	Rank
a. keeping within the budget	
b. the sales response obtained	
c. "rubber-stamping" the decisions of top management	
d. maintaining harmonious relations in the advertising department	

(8) Indicate your opinion of each of the following statements as they reflect the situation in your firm.

	True	More true than false	More false than true	False
a. An executive is not very favorable toward advertising if most of his work experience has been in the areas of manufacturing or finance				
b. After the advertising budget is approved, little review or supervision of the advertising expenditures is given by top management				
c. In the eyes of top management, it is a mark of success if the advertising manager does not spend more than the amount that has been appropriated for advertising				
d. The same information is made available to the advertising manager as is available for sales decisions				
e. Subordinates are as much concerned with doing a good job as they are with job security				
f. The chief production executive can make a decision on his own authority involving a larger expenditure of funds than can the advertising manager				

(9) With respect to your firm:

	Yes	No
a. Does the chief manufacturing executive, as compared to the advertising manager, have relatively more authority than is justified?		
b. Would the current top management attitude sanction borrowing funds for advertising expenditures?		
c. Is the prevailing opinion among other major executives in your firm that the advertising manager generally tries to get more than his share of the budget?		
d. Do subordinates form cliques, the purpose of which have nothing to do with increasing their efficiency?		

Part III.: The questions in the following section are posed so as to determine the role of selected factors which influence the size of the advertising appropriation.

(10) The following are conditions which might elicit an increase in the advertising budget. Would you rank them according to the weight which top management would attach to them (as 1st, 2nd, 3rd, 4th, 5th)

	Rank
a. a fall in sales	
b. demands from dealers	
c. suggestions of salesmen	
d. the availability of increased funds	
e. a growing quantity of finished-goods inventory	

(11) The following factors might be curtailing influences upon advertising budget proposals. Would you choose the two which would exert the greatest downward pressure? Two least?

	Check 2 of each: Most	Least
a. the sales organization not being prepared to meet the new demand		
b. production capacity not available		
c. an inability to prove the productivity of advertising		
d. a decline in competitor advertising		
e. a reduction in the working capital position		

(12) Suppose during some fiscal period in which the budget had already been established, the company desired to increase the amount of advertising effort, which <u>two</u> of the following procedures would most likely be chosen? <u>Two</u> least likely?

	Check 2 of each: Most	Least
a. absorb the increased costs from profits		
b. reduce other selling costs		
c. increase prices		
d. decrease the quality of the advertising		
e. reduce manufacturing costs		

(13) Indicate your opinion of each of the following statements as they reflect your experiences in the tire and tube industry.

	True	More true than false	More false than true	False
a. If profits are expected to be considerably larger next year, you would have a better chance of obtaining a larger advertising appropriation for that year				
b. The trade association offers very little help or information that is of use for determining the advertising appropriation				
c. No direct or specific allocation is made in the budget for goodwill advertising				
d. There is general agreement within the industry as to the cost items which should be included in the advertising budget				
e. The lag between the dissemination of an advertisement and its sales response may be of greater duration than the fiscal period for which the budget is appropriated				
f. General use is made by a majority of the firms in the tire industry of some accepted percent of sales in the determination of the advertising appropriation				

(14) If you anticipated an increase in forecasted sales, would the size of the advertising appropriation:
a. increase proportionately more _____, b. increase in the same proportion _____,
c. increase proportionately less _____, d. remain unaffected _____, e. fall_____

(15) If your firm were to increase output, would per unit manufacturing costs:
a. rise _____, b. fall_____, c. remain constant _____, d. don't know _____

(16) If it were believed that the sales response of the firm's advertising was falling, the appropriation would:	Check one
a. be raised to offset the decrease in pulling power	
b. be reduced because of the inferior productivity	
c. not be affected	

Part IV.: The following series of questions is to determine the function which advertising is to perform.

(17) If your firm should sharply increase its advertising activities, what do you feel would be the response of other firms. (Rank according to the likehood of each form of response as 1st, 2nd, 3rd, 4th)	Rank
a. decrease prices	
b. increase advertising	
c. change the quality of product	
d. make certain quasi-price adjustments (e.g., trade-ins and bonuses)	

(18) Rank the following factors (as 1st, 2nd,3rd,4th) according to the importance that top management places upon them in establishing the advertising appropriation.	Rank
a. success of some past advertising program	
b. advertising costs as a percent of profits	
c. the importance of dealer cooperation	
d. the need to maintain long-run goodwill	

(19) If all advertisers should make similar changes in the amount of their advertising effort, which one of the following conditions would affect most significantly the relative success of each firm? One least significant?

	Most	Least
a. being the first to change.....		
b. past advertising efforts of each		
c. relative quality of the advertising activities		
d. supplementary promotional or sales effort		

(20) Indicate your reaction to each of the following statements according to your experience in the industry of your firm.

	True	More true than false	More false than true	False
a. If you decreased your advertising, you could maintain the same sales volume by lowering prices				
b. Protecting prices generally is more important than maintaining a given sales volume				
c. Product advertising helps the sale of your company's stocks in the securities market				
d. Suppose you were faced with a large finished goods inventory. You could sell this inventory through an extensive advertising campaign without an offsetting reduction in prices				
e. You could sell to dealers without some advertising on the part of your firm				
f. Prices are made in the tire and tube industry on a follow-the-leader-basis, where one or a few firms accounce all price decisions which the others adopt				

Part V.: The answers to the questions in this section are to reflect the personal motivation of an individual as he operates within an advertising department.

(21) Suppose an election were held to vote for an officer of a local advertising club. Rank as (1st, 2nd, 3rd, 4th, 5th) the following characteristics according to the significance which you think <u>other members</u> of the club would give them in their voting.

	Rank
a. ability to write a good copy	
b. deals with the largest appropriation	
c. his activity in community or civic events	
d. ability to lead group discussions	
e. the title or position which the candidate holds in his business organization.	

(22) Please answer the following questions.

	Yes	No
a. Is your salary related directly to the income or sales of the firm?		
b. Are you ever motivated to offer an advertising program which would benefit society whether or not it would sell any tires?		
c. Is it a mark of success to be an officer in a local advertising club?		
d. Is a significant proportion of your annual income derived from ownership rights which you hold in the company?		
e. Do you think advertising managers in your industry spend relatively more time with the mechanical perfection of an advertisement than they do on its "pulling power"?		
f. Would most other advertising managers pay their subordinates more money than they are worth in order to maintain the subordinate's loyalty?		
g. Do you think advertising managers in your industry are as much concerned with the title and rank which they hold as they are with their salary?		
h. Suppose that you own company stock, the price of which you think will fall. Also you know you can hold your present position and salary. Would you sell that stock?		

(23) Please rank the following characteristics (as 1st,2nd,3rd,4th) according to the importance which you believe your subordinates place on them when judging you.

	Rank
a. gets raises in salary for his subordinates	
b. is not too strong a "task-master"	
c. knows the advertising business well	
d. is able to sell his subordinates ideas to top management	

APPENDIX B

AN APPRAISAL OF THE RETURNS TO THE QUESTIONNAIRE AND THE STATISTICAL METHODS EMPLOYED

AN APPRAISAL OF THE RETURNS TO THE QUESTIONNAIRE AND THE STATISTICAL METHODS EMPLOYED

To evaluate properly the findings of the questionnaire, it is necessary to understand the method and limitations of the statistical and research techniques used in presenting and analyzing the empirical data. The purpose of this appendix is to present and to appraise the validity of such techniques. To understand this appraisal, however, the nature of the universe and the responses to the questionnaire require analysis.

The universe was defined as those domestically owned rubber tire manufacturers employing consumer advertising. Eighteen domestic firms were considered a complete census of all firms meeting these criteria. Three failed to meet the original restrictions and were discraded from the universe: One firm, although a domestic producer, failed to meet the original criteria because it was a foreign-owned subsidiary, and any unusual influence of the (foreign) home office could not be assessed. Two other nonrespondents felt that their situations were atypical of the industry, as evidenced by the following statement by an official of one of these firms:

> . . . I do not feel that our business operation is representative of the industry in general. Our production is almost exclusively for original equipment manufacturers and our advertising program is almost non-existent.

Although these two nonrespondents chose not to answer, it is doubtful that their responses could have been incorporated into the findings of

this study, since they neither advertised extensively nor dealt with the consumer market. A recipient of the questionnaire for one large firm stated:

> The advertising of our corporation is handled individually by each of the divisions and it's almost next to impossible to try to pull this information together for your questionnaire.

Although this case met the original restrictions, some doubt exists concerning the validity of the response had it been obtained. The respondent may have been insulated from the real forces at play within the individual, decentralized decision environments.

The loss of another firm from the total responses imposes the most severe limitations upon the generality of the conclusions. The executive from this firm who returned the questionnaire unanswered stated:

> We will not be able to answer this questionnaire. Frankly, it involves considerably more time than we can devote to it . . . [sic] it involves qualifications that depend upon circumstances . . . [sic] and, of course, it involves information which we do not feel can be given to individuals on the outside.

The returns from the questionnaire constituted approximately 93 per cent of the acceptable firms, or approximately 87 per cent, if the highly decentralized firm is counted in the population. Moreover, the firm mentioned immediately above did co-operate most fully with the interviewing phases of the study and these findings coincided with the general pattern of responses to the questionnaire. But the refusal of two firms makes it impossible to treat the questionnaire results as a census. However, replies from even 87 per cent of the firms in the industry represent more than a mere collection of case studies, and considerable validity of results can be assumed.

The respondents were required to consider 49 questions involving 85 unique judgments. Of approximately 1,000 possible responses (13 questionnaires times 85 judgments), only 7 per cent were left blank or could not be coded. Those which could not be coded included, for example, a single check rather than a full response to a ranking-type question. For the 49 unique questions, the distribution by number of responses is shown in Table 53.

The responses to the questionnaire were neither a census nor a true random sample. This tends to modify the conclusions that can be drawn from the empirical study. Since a complete census was not obtained, the results cannot be considered typical of the industry without reservations. However, this limitation does not completely destroy the validity of the results nor the applicability of the findings to the problem.

Very simple reliability measures can be established for the replies to any one question. Table 53 shows that where 13 firms are used as the universe, all questions had a majority response, i.e., more than six. Even where 15 firms form the population, only one question shows a minority response, i.e., less than eight responses.

The majority-minority criteria can be used for analyzing the reliability of the response to any one question. For some questions, the respondents were confronted with answers that could be expressed in one of two mutually exclusive responses, i.e., "pole" responses, such as: true (including more-true-than-false), -false (including more-false-than-true), and yes-no. An arbitrary limit of reliability can be established for these answers. This limit can be defined as that point where the majority response becomes the minority response by including the nonresponses with the original minority response. It is apparent

TABLE 53

DISTRIBUTION OF QUESTIONS IN THE QUESTIONNAIRE
BY NUMBER OF RESPONSES

Number and Per Cent of Total Possible Responses per Question		Number and Per Cent of Total Unique Questions with Associated Number of Responses		Explanation
Number	Per Cent	Number	Per Cent	
13	100.0	9	18.4	Nine questions had complete and accurate responses from all 13 respondents
12	92.3	22	44.9	Twenty-two questions were answered completely and accurately by 12 respondents
11	84.6	11	22.5	
10	76.9	4	8.2	
9	69.2	1	2.0	Format poor--little space available for answering*
8	61.5	1	2.0	"Most-least" question. Four checked two (rather than one) each. One did not answer**
7	53.8	1	2.0	Ranking question. Four did not answer, two merely checked rather than ranking***
		49	100	

*The question dealt with the substitutibility of price competition for advertising efforts.

**The factor most (least) important in determining success, if all firms changed their advertising simultaneously.

***The question dealt with the likelihood of various means of retaliation to an increase in advertising.

that where one pole answer received eight or more choices, the majority response cannot become a minority response in a universe of 15, assuming no marking error. If the population includes only the 13 respondents, i.e., if the empirical evidence is interpreted only for those who responded to the questionnaire, the limit is seven. Of the 32 questions of this nature, 12 did not meet the former limit (in terms of a population of 15) and only four did not meet the latter, i.e., for a population of 13. Those not meeting the former limit are shown below. The total choices for the pole answers are shown in parantheses, and the asterisk indicates those not meeting the limit of the population of 13.

4-a: Timing of the decision (7-6)
8-c: Strictness in applying the budget (7-6)
13-c: Direct and specific allocation of good will (7-5)
20-d: Isolated productivity of advertising (7-5)
20-e: Importance of advertising in selling to dealers (7-5)
22-b: Service motive versus pulling power (7-4)
22-c: Importance of being an officer in local club (7-4)
22-h: Willingness to sell company stock (7-4)
* 8-f: Relative authority of the manager (6-6)
*13-d: Perceptions of accepted cost items (6-5)
*20-b: Protecting prices versus maintaining volume (6-5)
*20-a: Substitutibility of price competition for advertising (5-4)

This list constitutes approximately 50 per cent of the questions for which cross-relationships were found. The nature of these responses precludes the possibility of discussing typical answers. In the light of the consistency of the patterns disclosed in Chapter VI, however, the reactions were apparently truly mixed concerning the topics under question and not merely marking errors.

Two basic techniques were employed to disclose dependent relationships. The supposition is that certain perceptions or attitudes call forth like or opposite answers to a pair of questions. The first of the statistical techniques used was the chi square test, designed to test

for independence between a pair of responses. The quantity, chi square (X^2), can be defined ". . . as the sum of the squared discrepancies between observed and expected frequencies, each divided by the expected frequency. . ."[1] The hypothesis is that the answers to a pair of questions are independent, or that any variation can be explained on the basis of pure chance. However, a "large" chi square value indicates that observed values are significantly different from the theoretical values. This means that the deviations of observed values from theoretical values is greater than could be expected as a result of pure chance, and the hypothesis of independence is rejected. The implication is that the answers are in some way related, i.e., dependent.

One basic limitation is involved in the use of this technique. This is the small total number of cases in the study, which in some instances gives very few observations in some of the cells in the 2 x 2 table under test.[2] Under such conditions, a significant error arises because the chi square distribution is a continuous distribution and is being used to approximate a discrete distribution. When there are few observations in a cell, the continuous distribution ceases to be a good approximation of the discrete. The amount of such error can be reduced by utilizing a continuity correction. Snedecor states that: "For all values based on a single degree of freedom it [the continuity correction]

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[1] Quinn McNemar, Psychological Statistics (New York: John Wiley & Sons, 1949), p. 186.

[2] An exact test may be employed, but the extensive computation involved in obtaining a greater degree of accuracy is not warranted for the purposes of this study and the nature of the data. For an explanation of the method, see Cyril H. Goulden, Methods of Statistical Analysis (New York: John Wiley & Sons, 1952).

is appropriate and should be used if precision is desired in the evaluation of probability, especially in tables having small expected numbers--5 or less."[3]

The formula for chi square which contains the continuity correction is:[4]

$$X^2 = \frac{N\left(|AD - BC| - N/2\right)^2}{(A + B)(C + D)(A + C)(B + D)}$$; where the variables are as shown in the diagram below.

A	B
C	D

A + B + C + D = N

Chapter VI also presented relationships where a ranking-type question formed one or both sides of the comparison. The following example shows a situation in which this type of question forms one side of the comparison.

Answer to Question X	Factor and Average Rank in Question Y			
	a	b	c	d
True	4	3	1	2
False	2	1	3	4

This approach divides the responses of one of the pair of questions (the ranking type) according to pole answers in the other (e.g., the non-ranking type). The difference between the responses was deemed important if a two-rank difference was found; for example, one group of respondents

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[3]George W. Snedecor, Statistical Methods (Ames, Iowa: The Iowa State College Press, 1953), p. 193.

[4]Cf. McNemar, op. cit., p. 207.

to question X ranked factor (c) in question Y as first while the other group in question X ranked the same factor in question Y as third. Where such a difference was found, the data were presented.

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