

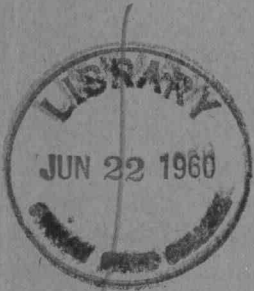
(Studies in Economics) #4

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# Small Enterprise and Oligopoly

*A Study of the Butter, Flour, Automobile,  
and Glass Container Industries*

HAROLD G. VATTER



OREGON STATE COLLEGE  
CORVALLIS, OREGON, PRINTED  
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# Small Enterprise and Oligopoly

## *A Study of the Butter, Flour, Automobile, and Glass Container Industries*

By

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*Associate Professor of Economics  
Oregon State College*



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## TABLE OF CONTENTS

	Page
Foreword .....	iv
Introduction .....	1
Industrial Evolution and Interfirm Relationships.....	1
Contemporary Theory and the Small Firm.....	4
Nature and Objectives of the Present Study.....	6
Materials and Methods.....	9
Differentiation in Market Opportunity: Creamery Butter Industry.....	13
Origins of Factory Butter Production.....	13
Procurement of Raw Material.....	14
Differentiation of Firms: Centralizer and Local.....	16
Differentiation and the Quality of Cream.....	18
Price Discrimination in the Raw Material Market.....	19
Comparative Costs: Centralizers and Locals.....	20
Marketing: Early Differentiation in Structure.....	21
Locals, Centralizers, and the Marketing Function.....	23
Cooperative Marketing and the Small Creamery.....	24
Subordination of Locals to Large-Scale Marketing Agencies.....	27
Recent Innovations and the Local Creamery.....	30
Small Enterprise Mortality: Commercial Wheat Flour Milling.....	33
Introduction .....	33
Economic Background of the Minneapolis Industry.....	35
Beginnings of Interfirm Differentiation.....	37
Formation of the Leading Minneapolis Group.....	41
Market Maturation, Elimination of Small Mills, and Expansion of the Minneapolis Group, 1900-1920.....	43
Buffalo .....	44
Differentiation in Marketing.....	47
The Southwest .....	48
Excess Capacity, Stabilization, Consolidation, and Enlargement of the Small Miller, 1920-1940 .....	51
New Entry and Small Enterprise: The Automobile.....	66
Introduction .....	66
Entry in the Period of Rapid Growth.....	67
Maturation, Oligopoly, and Closure of Entry.....	70
Theoretical Aspects of the Entry Problem.....	73
Special Conditions of Entry After World War II.....	77
Stabilization and Dependent Enterprise: The Glass Container Industry.....	81
Introduction and General Characteristics.....	81
Small Enterprise: A Definition.....	83
Stabilization, Suppression of Entry, and Dependent Enterprise.....	84
Capacity Control and Dependent Small Enterprise.....	89
Production Capacity and Intergroup Quota Rivalry.....	92
Interfirm Relationships Under a Stabilization Program.....	96
Summary: Toward a Theory of Small Enterprise.....	100
Testing the Working Hypothesis.....	100
Functional Characteristics of Small Business.....	109
Survival of the Small Manufacturer.....	111
Conclusion .....	116

## FOREWORD

This monographic study of the small firm in dominant-group industries is a condensed presentation of an analysis originally submitted in partial fulfillment of the requirement for the degree of doctor of philosophy at the University of California (Berkeley). Although certain of the chapters, notably those on the butter and flour milling industries, and the general theoretical discussion, have been substantially shortened, it is hoped that the manuscript as a whole has been strengthened as a result of a painstaking abbreviation process.

The study represents a good many years of investigation into the small business problem, years in which my indebtedness to others has been great. Among those, mention should be made of Professors J. M. Clark and Paul Brissenden at Columbia University, who first encouraged me to undertake research into the problems of the small firm. Acknowledgment is also due those at the University of California who had an important part in shaping the present project. The late Professor Leo Rogin directed the initial stages of this investigation. Subsequently, Professor Joe S. Bain devoted many hours to a careful critique of every aspect of the manuscript as it moved toward completion. Others who made significant contributions were Professors Robert Brady, William Fellner, and Henry E. Erdman.

## I

# INTRODUCTION

### 1. INDUSTRIAL EVOLUTION AND INTERFIRM RELATIONSHIPS

Widespread contemporary discussion of the problems of small enterprise has already penetrated the sphere of public policy, and, following the usual historical sequence, is currently beginning to cause a stir in academic circles. Attention to the special status of the small concern has generally been oriented toward the modern predicament of what is more popularly termed our "free enterprise system." Our awareness of that predicament was immeasurably sharpened during the harsh years of the early 1930's, and it was precisely this impetus which gave rise to a reconsideration of our traditional conceptions of the role played by the small entrepreneur. The great depression placed entrepreneurship on trial, and in the quest for explanations of its apparent delinquency, we probed widely and deeply into our economic organism. More searching questions than formerly came to be asked regarding the economic evolution of our industrial markets.

The competitive status of the smaller producer, in modern industry, to which the present work is primarily devoted, is understandable only in the setting of the general pattern of industry. Hence, the advances in certain aspects of the general theory of business enterprise in recent years are pertinent to the problem here under consideration.

Central to the economic setting of small enterprise is the developing concentration of production and centralization of control. This is the overriding secular factor of economic history which has induced the widespread reconsideration of conventional theories of monopoly and competition so characteristic of economic analysis over the last two decades. The work of describing the growth of concentration, begun so well by Berle and Means with the publication of *The Modern Corporation and Private Property* in 1933,<sup>1</sup> was carried forward by the Federal Government through the National Resources Committee's *Structure of the American Economy*,<sup>2</sup> the investigations of the Temporary National Economic Committee, and the Congressional committees on small business. Although the facts of increasing concentration and centralization have been questioned by some, the significant controversy revolves around the implications of such facts for the functioning of industry and for the theory of business enterprise.

More specifically, the dominance of the large corporation in so many of our industrial markets has brought into sharper focus the problem of the place of the smaller producer in such markets. A closer scrutiny of the

<sup>1</sup> Berle, A. A., and Means, G. C., *The Modern Corporation and Private Property*, New York: MacMillan, 1933.

<sup>2</sup> U. S., National Resources Committee, *The Structure of the American Economy, Part I*, Washington: June, 1939.

competitive relations of large and small concerns, as they evolve through time, suggests the need to re-examine Alfred Marshall's forecast that large, long-established firms would typically reach a period of senility and make way for newer, smaller, and more progressive business organizations.

Empirical studies of our contemporary industries reveal the persistence of certain markets where the scale of organization is small and producers are numerous; we also find very many markets in which a fringe of lesser enterprises continue to coexist alongside a dominant group of large firms. To the extent that anything approaching formal theorizing has been attempted with respect to these smaller concerns, there has been a strong tendency to fall back upon our traditional doctrines of pure and perfect competition. Since these doctrines presuppose atomistic markets, they have seemed to many quite appropriate to describe the business behavior of the smaller firms in both types of industrial structure to which we have just referred. The small firm is one among many; it is of such size that it is ruled by external market conditions, and cannot "administer" such conditions; and its business decisions are arrived at independently, i.e., without consideration for the reactions of rivals. The identification of small enterprise with atomistically competitive behavior, and a frequent corollary linking large enterprise with monopolistic behavior, is to be found not only in numerous popular periodicals but also in the work of the Congressional small business committees, in much of our judicial antitrust theory, and in many contemporary works in the field of industrial organization, such as A. R. Burn's *Decline of Competition*<sup>3</sup> and Corwin Edwards' *Maintaining Competition*.<sup>4</sup>

On the other hand, the identification of concentration with monopoly, and of small enterprise with competition as the opposite of monopoly, is rejected by some leading theorists. In this group falls the theory of monopolistic competition. The dichotomy is blunted by the assertion that monopoly obviously encompasses more than a single seller (or buyer), that it is pervasive in the system, and that it is best thought of as a form of competition. Burns' thesis of declining competition is therefore deplored. Declare Dennison and Galbraith,<sup>5</sup> "monopoly is not the antithesis of competition; the two can and do exist side by side . . ." Another writer adds, "It would be a mistake . . . to identify big business with monopoly, little business with competition."<sup>6</sup> A basically similar approach is found in E. A. G. Robinson's *Structure of Competitive Industry*.<sup>7</sup>

The question raised by this controversy is not yet resolved. One difficulty is the lack of adequate empirical study, a want which efforts along the lines of the present investigation hope to satisfy.

<sup>3</sup> New York: McGraw-Hill, 1936.

<sup>4</sup> New York: McGraw-Hill, 1949.

<sup>5</sup> Dennison, H. S., and Galbraith, V. K., *Modern Competition and Business Policy*, New York: Oxford Univ. Press, 1938, p. 29.

<sup>6</sup> Wilcox, Clair, *Competition and Monopoly in American Industry*, TNEC Monograph No. 21, Washington, 1940, p. 307.

<sup>7</sup> Cambridge: Nisbet & Co., Ltd., 1931.

On the theoretical plane, however, some progress has been made. There has been a reaction against the doctrine of chaos implicit in the theory of monopolistic competition, pointed out so sharply by Stackelberg.<sup>8</sup> It has been difficult to rest content in the face of the trenchant remark of a practitioner that "neither the theory of market phenomena which are found nowhere nor that of market phenomena which are found everywhere can give the courts a satisfactory basis for work . . ."<sup>9</sup> One of the criticisms of the doctrine of monopolistic competitions which led to fruitful results was that it failed to deal at all satisfactorily with oligopoly. Although challenged by some,<sup>10</sup> we have achieved some measure of general agreement that "the dominant market of modern capitalism is not one made up of many sellers offering either uniform or differentiated products. Rather it is a market of few sellers, i.e., oligopoly . . . the counterpart of few buyers associated with many or few sellers is also a common phenomenon . . ."<sup>11</sup> Furthermore, it is also widely agreed that oligopoly and oligopsony may give market results very similar to those associated with monopoly.<sup>12</sup>

If oligopoly is today predominant, if economic evolution has therefore been shown to be in the direction of oligopoly, then this provides an important clue to the changing status of the small or independent enterprise. It would seem fruitful to relate the problem of the small producer to incipient, emerging, or dominant oligopoly in particular industries. Small enterprise will, first of all, have to be defined so as to place it in its proper position with respect to oligopolistic enterprise. Such attempt is made in a preliminary way in this chapter and is expanded in the case studies and the concluding chapter.

The apparent paradox involved in an approach to small enterprise that emphasizes the role of oligopoly may be dispelled by recognizing certain strategic factors. Concentration of production and centralization of private controls over production<sup>13</sup> have been important developments affecting the competitive conditions under which the smaller producer must operate. Since these developments have transformed many industries with more or less atomistic structures into markets in which fewness predominates, the residual small competitors in such cases confront new problems in the struggle

<sup>8</sup> Stackelberg, H., *Marktform und Gleichgewicht*, Vienna and Berlin, 1934.

<sup>9</sup> Corwin Edwards in American Economic Association, *Proceedings*, May, 1948, p. 203.

<sup>10</sup> Cf. review of Bain, J. S., *Pricing, Distribution and Employment*, by George Stigler, *American Economic Review*, December, 1948, p. 915.

<sup>11</sup> Galbraith, J. K., "Monopoly and the Concentration of Economic Power," in *A Survey of Contemporary Economics* (Edit. by H. S. Ellis), Philadelphia: Blakiston, 1948, p. 101.

<sup>12</sup> Cf., e.g., "Supplement: Papers, Relating to the Temporary National Economics Committee," *American Economic Review*, June, 1942, pp. 24-25.

<sup>13</sup> Concentration of production is of course not the same thing as centralization of control. Cf., e.g., the concept of control presented in the *Structure of the American Economy*, part I (U. S. National Resources Committee, Washington: 1939), p. 153. This study will be concerned primarily with the former rather than the latter. One great gap in the presentation is the matter of control of fabricating enterprise by financial concerns. The U. S. Department of Justice has declared that "practically every important industry shows the effect of the investment banker's inclination to merge and combine competing companies . . ." (*United States versus Economic Concentration and Monopoly*, House Committee on Small Business, Washington, 1947, p. 38). The great obstacle to adequate treatment of this problem is the lack of information.

for market opportunity. Furthermore, since the business policies of the few leading concerns will typically dominate the given industry, the fringe of lesser enterprises will find that such policies will vitally shape their own behavior patterns. Hence it becomes necessary to examine the group interrelations between the dominant few and the small-firm fringe. Most oligopoly theory has dealt with the relations among oligopolists. It is believed that extension of oligopoly theory to deal with group interrelations between the dominant few and the small-firm periphery—the central objective of the present study—may prove worthwhile.<sup>14</sup>

In order to examine these group interrelations in a manner which will give the fullest possible consideration to their dynamic and variegated forms of behavior, the historical method will be essential. Both in the case studies and the general summary discussion of the final chapter, the group interrelations between the leaders and the lesser enterprises are analysed as they evolve over time. As might be expected, such interrelationships do not remain fixed as an industry develops, stagnates, or declines; consequently, it is necessary to delineate the phases of market evolution and to distinguish the shifts in competitive status between the two groups from phase to phase.

## 2. CONTEMPORARY THEORY AND THE SMALL FIRM

The use of our standard theoretical tools to accomplish the task thus outlined is severely restricted by two characteristics of those tools: (1) their static nature, and (2) their preoccupation with price. With regard to the first aspect, it requires but a glance at the development of competitive behavior in any one of our industries to recognize the dynamic character of the data. The emphasis upon static models in conventional theory seriously impairs its usefulness to describe those many functionally-changing situations in which the small business problem emerges. With regard to the second aspect, it must be recognized at the outset that we will be concerned on the level of market behavior not only with price results but with nonprice results. Price results are undoubtedly strategic in affecting the competitive interrelationships between firms in a given industry. But nonprice results, such as relative market shares of member firms over time, profitability, rate of utilization of capacity, service competition and product variation, may be equally important. Furthermore, the attempt must be made to relate market structure (e.g., number and size of distribution of enterprises, importance of overhead and variable costs, character of industries selling to and/or buying from the given industry, etc.) to market results, and this requires investigation of these environmental determinants lying behind such results. A stress on price in contemporary literature in the field of business policy is not necessarily to be condemned; but it is believed to have slowed

<sup>14</sup> For an outstanding contribution to this so-far neglected aspect of oligopoly theory, cf., Nicholls, Wm. H. *Imperfect Competition within Agricultural Industries*, Ames: Iowa State College Press, 1941, especially Chapter 8.

the rate of advance in those aspects of enterprise economics which are more particularly useful for the problem of the small concern in manufacturing.

The historical approach taken in the case studies included may be justified not only on the general grounds that it leads to better understanding of economic phenomena, but also that it may reveal differences in the status and policy of the small firm under historically differing market contexts. The individualism of the autonomous enterprise may lead to quite different results in self-regulating atomistic industries than it would in markets where at least some of the firm members have achieved an important degree of jurisdiction over economic conditions.

A review of contemporary literature in the field of small business reveals that not only is the existing body of knowledge on the subject distressingly incomplete, but, also, almost no progress has been made insofar as the formation of a systematic theory is concerned. In particular, a systematic treatment of the changing competitive position of the small firm in industry has not so far been undertaken.

The problem of definition has plagued analysts since interest in the subject was first raised to a high point during the early 1930's. It has not yet been satisfactorily solved. The majority of writers have approached the matter largely from the quantitative point of view. Following this line of attack, it was early recognized that any classification of large and small firms based on such criteria as assets, sales, or number of employees would have to use different measures for manufacturing, wholesaling, and retailing. However, these failed to prove satisfactory because, in the breakdowns within these three, it was obvious that what was quantitatively large in one line would be small or medium-sized in another.<sup>15</sup> Present thinking of this school recognizes that the concept of small must be related to some portion of a total (capacity, sales, etc.) for a given commodity, industry, or line of trade. Thus there can be no over-all size class that accurately delimits small enterprise.

A more functional approach has just begun to emerge in recent years. This approach acknowledges certain widely typical characteristics of the small concern, certain qualitative features which, together with a measure of size appropriate to a given industry, provide a much more adequate conceptual framework than could the size approach alone. Kaplan points out, for example, that—

In studying the problems that go with smallness, we must take account of characteristics other than those of size, whether physical or financial. Small business means, typically, an identity of management and ownership, an absence of specialized staff for separate functions and of facilities designed specifically

<sup>15</sup> Such review cannot be undertaken here. The literature is vast. Four studies come to mind as particularly worthy of note: U. S. Temporary National Economic Committee, Monograph No. 17, *Problems of Small Business*, Washington: Government Printing Office, 1941; Weissman, Rudolph, *Small Business and Venture Capital*, New York: Harpers, 1945; Steindl, Joseph, *Small and Big Business*, Basil Blackwell, Oxford: 1947; and Kaplan, A. D. H., *Small Business: Its Place and Problems*, New York: McGraw-Hill, 1948.

for research and analysis, inability to finance itself by floating securities or to secure its funds through sources such as investment bankers, a personal relationship between owners and employees and customers, the affiliation of the firm with a local community, and chief dependence for its market on the local area. These factors, when present in combination, make small business recognizable as such even when its volume of business is substantial.<sup>16</sup>

This functional approach is quite new in the field. It is the one which will be emphasized in delimiting the small-firm segment of the industries discussed below. It is believed attempts to define small enterprise purely quantitatively will be caught on the horns of a dilemma at the outset.

As a tentative working definition of small enterprise, the following may be suggested. A SMALL ENTERPRISE in an industry is one which accounts for a distinctly minor proportion of the total output or capacity. "Minor," in this connection, means that no other firm or firms in the market will typically change their general market behavior, out of consideration for the reaction of such firm, from what that behavior would be were such small firm not in the market. Furthermore, since the small enterprise is a distinctly minor factor it is likely to make its business decisions with but little consideration for their effects upon rivals—at least smaller rivals. In this sense, small enterprise is independent enterprise, i.e., its actions are comparatively autonomous.

THE SMALL ENTERPRISE SEGMENT of an industry, which also contains a few large leading firms, is that group of small firms which together account for less than some critical percentage of the total output or capacity. "Critical percentage" will vary widely from industry to industry, and over time, but in general, a critical percentage would be that proportion of the total which is accounted for by those leading enterprises (sometimes called the "dominant group") whose policies usually determine the chief characteristics of market results in the industry.

The significance of small size as thus defined becomes meaningful, however, only in connection with certain competitive features associated with smallness, which we term the functional aspects of small enterprise. These functional aspects will emerge in the case histories, and will be developed more fully in the concluding chapter.

### 3. NATURE AND OBJECTIVES OF THE PRESENT STUDY

The present study attempts to do several things:

1. To clarify the concept of small enterprise.
2. To discover the empirical status of the small firm in the four selected industries, particularly with respect to interfirm competition.

<sup>16</sup> Op. cit., p. 17. Thurman Arnold once defined small enterprise as that type of business which could not afford to maintain a lobby in Washington. (Cf. Weismann, R. L., *Small Business and Venture Capital*, op. cit., p. 134.)



3. To discover to what extent evidence in the selected industries enlarges upon or conflicts with conclusions about small business arrived at by other investigators.
4. To discover any new relationships which may deepen our present understanding of the competitive status of small enterprise.
5. To construct a set of working hypotheses that may contribute to the formation of a systematic theory of the small firm in modern industry. The aim of such a theory would be to appraise the relative competitive strength of small business in American manufacturing, its prospects for survival, and the influence of small enterprise upon market behavior and results. From the purely theoretical viewpoint, the major objective is to integrate the analysis of the small firm into the growing body of doctrine regarding oligopoly.

The most important objective is, of course, the fifth. The other four, although worthwhile in themselves, are, in a vital sense, contributors to the main task of constructing a more generalized theory than exists at present.

The central working hypothesis of the present study is as follows: the archetype of industrial structure is an industry with a core of oligopoly leaders alongside a fringe of smaller producers. Such structures, often termed "dominant-group industries," provide the empirical reference for the basic theoretical categories used throughout: the small enterprise segment on the one hand, the few larger sellers (or buyers), which account for an important percentage of total output, on the other hand. Using this basic classification the analysis revolves around an examination of the competitive relationships between these two segments.

The small-firm segment may be composed of a relatively small number of concerns which would be considered large in some industries. But in any given industry, these enterprises are comparatively small when contrasted with those making up the leading core. As a group, the small-enterprise sector must be conceived of in an evolutionary sense: its numbers, the size of its individual components, and its competitive status with respect to the larger firms—all are likely to alter with time.

Industrial markets are seen, according to the approach used here, not merely as a congeries of rival sellers or buyers but rather as possessed of two strata of enterprises, each differing in size and in typical policy.

The study further hypothesizes that the small-firm segment and the large-firm segment (the "oligopolistic core") pursue, in general, different and conflicting business policies. The large-firm group increasingly pursues, as the industry evolves toward relative market saturation, a policy of cooperation and stabilization of market conditions. The small-firm segment generally follows a policy of disruption and destruction with respect to any given stabilized competitive condition, although, at times, or in certain

ways, it rejects its typical role and cooperates with a stabilization policy (often under duress) coming from the oligopolistic core. The basic conflict between the two segments is obviously an intergroup conflict, rather than the simple interfirm competition assumed to exist in the theories of perfect competition and monopolistic competition. Hence it has been thought advisable to use a little different terminology at some points in the analysis. Thus, we refer to a "competitive cleavage" between the small-firm segment and the oligopolistic segment. The two sectors are said to be "differentiated competitively,"<sup>17</sup> and since the hypothesis works with two basic sectors in each market, the term "bilateral differentiation" is often employed. Older connotations of the word "competition" do not cover the kind of interfirm relationship which is formalized in the working hypothesis of this study, and semantic difficulties might readily develop were the attempt made to force the new concept into the old mold.

From the aspect of industrial structure, it will be seen that the working hypothesis used herein has drawn upon a well-known market category: oligopoly with a "quasi-competitive" fringe. The problem of small enterprise is presumed to be peculiarly connected with the growth of industrial oligopoly, in general; and oligopoly, with a small-firm fringe, is considered to be the particular market structure which, among all other classes of market structure, best reveals the changing status of the small manufacturer.

From the aspect of business policy, the working hypothesis makes its greatest claim to innovation. Through its bilateral classification, the hypothesis states that modern industries develop within themselves two broad types of business policy: cooperation, and something closely approximated by the term "destructive competition." These two policies are roughly identified with a leading core of large firms and a more economically subordinate (in terms of total output, financial resources, etc.) group of small enterprises. These two policies develop side by side as the industry evolves. They come into conflict with each other at strategic points in the struggle for market opportunity. The changes in the balance of economic power behind these two policies spells out the competitive status of the smaller producers for any given period in the history of a market. The more pressing the need for sales in particular markets, as in the case of industries with saturated markets, heavy overhead charges, and excess capacity, the more intense is likely to be the intergroup conflict between the two segments of the market. In this case the "problems" of the small firm will be the most acute.

Industrial structure and policy are interrelated. It was the historical transformation in the structure of markets, associated with such things as the growth of large sunk costs, the great size of the American national market, and the spread of the corporate form of business that brought with

<sup>17</sup> Not to be confused with differentiated products. Of course, product differentiation, if present, may affect the conditions of intergroup competition.

it modern industrial concentration. The growth of markets dominated by a few large concerns made more feasible business policies of cooperation and stabilization. The latter were superimposed upon, and came into conflict with, whatever remained of earlier more atomistic structures and "destructively" competitive policies. The modern representative of the earlier factors is the small firm. This is the essential relation between structures and policy so far as small enterprise is concerned.

The working hypothesis is not to be thought of in too rigid terms, however. It is recognized that as a generalization it is subject to numerous exceptions and modifications. Industry is much too diverse and changing to provide us with pure principles that allow no exceptions. If we can be correct in the bulk of the cases illustrative of a given problem area, then we can ask little more. Indeed, several aspects of the case studies included here could not be considered consistent with the central theorems just outlined. But it is believed that, despite these particular exceptions, the studies below, as well as the weight of other industrial evidence, are broadly consistent with the working hypothesis.

So much for a preliminary statement of the hypothesis. Further elaborations and testing must await the detailed analysis to follow.

Despite the many difficulties confronting the small enterprise, in its efforts to secure a share of the market, the facts of industrial history indicate that small business possesses a remarkable power to survive however complicated may be the conditions of its existence. The number of small firms in American manufacturing may have declined somewhat over the last two or three decades, but certain factors seem to be at work which tend to produce replacements for those who disappear, and to generate new areas of opportunity for the small entrepreneur. The matter has been treated by a few writers. To them we are indebted for a number of hypotheses designed to explain small-firm survival. Among the more important explanations are: the persistence in many industries of crude technique; the existence of many industries producing a single component of a complex commodity, a specialty product or a product subject to changes in fashion, and of industries competing directly with household work; the continued importance of local markets; various other market imperfections, including product differentiation; the rate of growth of business savings in the larger firms of a given industry; the desire of dominant oligopoly groups to maintain a fringe of small rivals as a facade; and governmental aid. The significance of these various hypotheses will be tested in the case studies. A general appraisal will be made in the concluding chapter.

#### 4. MATERIALS AND METHODS

The concern here is not with solutions, but, to paraphrase Wesley Mitchell, with "the problem and its setting." This deliberate limitation is

not set in order to escape the responsibility for economic policy but rather emanates from the conviction that a certain amount of intellectual specialization is warranted, particularly where it is felt that investigation to date has, for the most part, relegated to the background certain aspects essential to working out appropriate solutions.

The aspects of the small enterprise problem herein examined are primarily those involved in the internal relations of industry—the interfirm relationships of historically changing markets. These aspects have been unfortunately neglected in most of the studies of small enterprise. The present treatment has to do with the parameters of economic opportunity for small capital: opportunity to enter business, to retain a certain proportion of total business done, and to make independent autonomous decisions regarding the determination of price, output, plant expansion, and so on.

The theory of small enterprise will have to be shaped out of the materials furnished by industrial evolution in the secular period. At least two decades are covered by each case study. Three of the studies embrace the entire 20th century up to World War II. The flour milling investigation naturally goes back to the last quarter of the 19th century. It was not felt necessary for present purposes to trace earlier origins.

It is generally agreed that if small enterprise occupies any special status in the business community the manifestations of such status vary widely from industry to industry. The industries selected for study clearly reveal this characteristic, although similarity in the forms of the small business problem is by no means lacking. At the same time, these four industries are themselves representative of rather widely differing productive types. Producers' goods, consumers' goods, differing durability, varying degrees of market concentration, differences in proportions of value added by manufacture to total value of product, divergence in sensitivity of price to changes in the general level—these, and many other strategic industrial characteristics, are represented in the four market types under investigation. Two are agricultural processing industries, usually thought to be "strongholds" of the small firm.

Each industry treated in the study points up some one major aspect of the problem at hand. The creamery butter industry illustrates in a general case the manner in which small and large concerns become differentiated competitively. The small creamery drops behind in the rivalry for raw material supplies, for the efficient exploitation of the available technology, and for control over the major marketing channels. This industry justifies first position in the list of our case studies precisely because it is one in which interfirm differentiation has not gone as far as in the other three analyzed. Also, it might be expected that the economic disparities between small and large firms would be less likely to appear to any significant degree in a many-firm industry engaged in the "first processing" of an agricultural

raw material. Yet, differences in the ability of "centralized" and "local" creameries to take advantage of market opportunities emerge very clearly. They appear early in the growth of the modern factory butter industry. They are to be found in almost every important aspect of market activity. If bilateral segmentation is so important in the creamery butter industry, where it might least be expected to be found, its general industrial significance for the small enterprise problem should thereby be enhanced.

The flour milling industry is primarily a study of the kind of competitive relationships between a group of leading producers and a multitude of lesser firms which bring about very high mortality among the latter. High mortality, it is recognized, is a *result* of competitive differentiation, or alternatively put, a *form* of differentiation. But the general numerical decline of the small firm in the important American manufacturing industries heightens the significance of this particular form of differentiation, and, it is believed, warrants the emphasis given to it in the present study. The flour milling industry stands out as one in which the mass elimination of lesser competitors occurred on a scale almost unrivalled in the entire field of manufacture in the 20th century.

A neglected aspect of our enterprise system, and of the small firm problem in particular, is the matter of new business entry, mentioned above. The automobile industry provides the empirical framework for an analysis of the transformation of a market from one in which business births exceed deaths, to one in which the effective appearance of competing firms and products practically ceases. Here again, it is observed that the competitive chasm between the leading core (of three firms), and the surrounding lesser enterprises in a modern mass-production industry, provides evidence of the conditions which prevent the free participation of large numbers of small entrepreneurs in the economic rewards provided by such a market. It is noteworthy that the frustration of new business entry in this market is not primarily the result of so-called "artificial" barriers constructed by established leaders.

Small firms often become economically *dependent* appendages of the leading concerns in a given industry, or in related industries. A certain degree of dependency is found in the case of numerous suppliers, as well as distributors, of the automobile industry. But the glass container industry offers one of the most striking illustrations of dependent enterprise in the history of American manufacturing.

Each industry analysed in the study furnishes us, therefore, with at least one outstanding aspect of the small enterprise problem in manufacturing.

It will be seen that these are not industry studies in the conventional sense. They are not designed to portray all aspects of each market, to cover all stages in its evolution, or to be particularly "timely." What is considered

important in the welter of historical material, will, in all cases, depend upon relevance to the problem.

It is believed that in focussing attention upon industrial differentiation, mortality, new entry and dependency, the present study will highlight four of the most important factors affecting the status and prospects of the small manufacturer. Furthermore, by treating these relationships in connection with the presence of an oligopoly group, it is hoped that the discussion of the problem of small enterprise is thereby placed in a significant and realistic framework. Oligopoly theory has for the most part endeavored to disclose the competitive relations among member oligopolists. It is here proposed to investigate the *intergroup* relationships between oligopoly cores and small-firm peripheries.

## II

### DIFFERENTIATION IN MARKET OPPORTUNITY: CREAMERY BUTTER INDUSTRY

#### 1. ORIGINS OF FACTORY BUTTER PRODUCTION

Production of butter in factories (creameries) in the United States is a 20th century industry. As late as 1890, out of a total production of about a billion and a quarter pounds, less than two hundred million pounds were processed in factories.<sup>1</sup> Not until World War I did factory output exceed farm output.

Prior to the 20th century the simplicity of butter processing, the scattered distribution of the raw material, and the absence of a practical factory technology acted to inhibit the growth of off-the-farm production. However, the technical basis for a factory system was established around the last decade of the 19th century. In the manufacturing process proper, the new technique was built largely upon a machine for the centrifugal separation of cream, the Babcock tester for the fat content of whole milk, and later, the combined churn and butterworker. These developments were themselves stimulated by the adoption, early in this century, of "starters" for hastening the ripening of cream, and of improved plant refrigeration apparatus.

During the entire period under review the factory system has remained basically unchanged. Technical progress has been largely through elaboration of existing equipment.

Rapid urbanization between 1900 and 1920, with development of better transportation, including refrigerator transport, had profound repercussions within the creamery butter industry. The geographical market was transformed from local to national, creating transportation, storage, and selling organizations. The latter changes were of utmost importance to the local creamery, since they raised the marketing function to a position of decisive significance.

But alongside of, and somewhat prior to, the growth to dominance of the marketing organization, certain basic differences in creamery type occurred in the processing phase of the industry.<sup>2</sup>

Plant size and location were profoundly influenced by the wide dispersion and high perishableness of the raw material, which is whole milk or cream. The earlier phase of the history of butter production in the 20th century is shaped largely by these two factors, superimposed upon expansion

<sup>1</sup> Wiest, E., *The Butter Industry in the United States*, New York: Columbia University Press, 1916, p. 38.

<sup>2</sup> Processing consists of pasteurization (omitted by many smaller creameries in earlier years), ripening or souring of the cream, churning, washing, salting, working, packing, refrigeration. Butter contains, in addition to the butterfat raw material, an "overrun" of about 20 per cent, consisting of water, salt, and various substances other than fat.

of the market for factory output at the expense of farm output. The industry was comprised of a very large number of plants (and firms), ranging from about 5,300 in 1900 to approximately 4,300 in 1914.<sup>3</sup>

The creamery at this stage of evolution tended to remain very much a local enterprise, with strong economic ties to the dairy farmer, or creamery "patron." The raw material producer dominated the processing function. This fact was represented in the prevalence of the local producers' co-operative form of business organization.

The market environment in the butter industry was highly conducive to the existence of a large number of small plants, particularly during the early decades. There were several reasons for this. In the first place, the industry has enjoyed expanding output ever since its inception. The growth-rate of physical output did not slow until the fourth decade of the present century. In the second place, these substantial market expansion rates contributed to profitable operations for most of the many firms occupying the industry during the early period. In the third place, there were no artificial barriers to entry, i.e., barriers set up by established concerns to keep out newcomers. Finally, there were few natural economic barriers that might have inhibited the influx of fresh enterprises. The investment required, for example, was small. Although average investment per plant increased from \$5,746 in 1904 to \$13,688 in 1914, neither sum could be said to represent a serious block to entry. According to a study made in 1924, one of the largest creameries in Minnesota possessed a plant whose building was valued at only \$23,000, and the equipment at \$13,000.<sup>4</sup>

## 2. PROCUREMENT OF RAW MATERIAL

Necessity for keeping the milk or cream in a fresh condition, coupled with its weight and bulkiness, made for substantial haulage costs in the industry. Although processing methods proper allowed considerable increases in plant scale, the technical and economic difficulties associated with raw material procurement were a powerful restrictive force on plant expansion. Each creamery in the early years served a substantial number of patrons in a given geographical space. This area was subsequently extended by the larger butter producing and marketing organizations, but the limits of the procurement region have contributed to the maintenance up to the present time of numerous small establishments and firms.

Nevertheless, it was in the impact of factory technology upon the dynamics of procurement that the first important competitive differentiation between firms on the basis of size occurred. The rapidly expanding demand stimulated a race for sources of supply. This competitive race was no longer

<sup>3</sup> Figure for 1900 is from Wiest, *op. cit.*, p. 42; for 1914, *Statistical Abstract of the United States*, Washington: U. S. Dept. of Commerce, 1925, p. 750.

<sup>4</sup> Black, J. D., and Guthrie, E. S., *Economic Aspects of Creamery Organization*, Minneapolis: University of Minnesota Experiment Station, Technical Bulletin No. 26, December, 1924, p. 97.



associated with an increase in the number of creameries after 1900, for the United States as a whole. But total investment, in the manufacturing process proper, increased approximately 100 per cent over the 10-year period 1904-1914—from \$30,080,419 to \$59,625,448.<sup>5</sup> The increase was undoubtedly the result in part of the upward price trend, but it also sprang from the extension of milk and cream gathering facilities and enlargement of the plant scale.

Until the turn of the century, growth of the nascent factory system was stunted by the whole-milk method of gathering, under which the farmer typically hauled milk every day or two to the creamery, where the cream was separated by gravity. This arrangement was costly and time-consuming for the farmer, necessitating an extremely narrow patron-radius, with a consequent small-scale creamery. However, the invention and adoption of the hand separator for use on the farm made it possible for the farmer to deliver the less bulky cream, thereby enlarging the patron-radius of the creamery. The hand separator therefore permitted an increase in the size of creameries.

The hand separator nevertheless did not bring about the elimination of the whole-milk gathering system, because another innovation, the centrifugal separator, made the skim station feasible; and it was the skim station network which brought about the initial differentiation of producers into large and small. By laying the basis for much larger butter processing plants, the skim station made available economies of scale to those concerns possessing the larger chains of skim stations. Furthermore, in its later transformation, it became not only a concentration point for the collection of cream and reduction of whole milk, but also a sales outlet for related food-stuffs and supplies, thus becoming a strategic weapon of the larger creamery organization in the competition for raw materials.

Once the major technical problems of processing and procurement were on the way to solution, creamery plant expansion was very rapid. For the country as a whole, average output per establishment rose from 53,329 pounds per year in 1900 to 130,622 pounds in 1910.<sup>6</sup> Value of products per plant rose from \$22,640 in 1904 to \$55,872 in 1914. Plant expansion continued to be substantial up to the depression of the early 1930's, after which it levelled off. In Minnesota, the trend is illustrated in the following:<sup>7</sup>

Year	Total number of creameries	Pounds of butter made	Pounds per creamery
1912 .....	864	116,051,878	134,320
1928 .....	856	273,396,822	319,400
1938 .....	856	301,771,668	352,537

<sup>5</sup> U. S. Federal Trade Commission, *Report on Milk and Milk Products, 1914-1918*, Washington: Government Printing Office, June 6, 1921, p. 67.

<sup>6</sup> Wiest, *op cit.*, p. 42.

<sup>7</sup> Minnesota State Agriculture Dairy and Food Commissioner, *Bulletin of Information on Creameries*, etc., St. Paul: 1945, p. 8.

The increase of plant scale was itself a function of superior organization of supply. It must be borne in mind in this connection that approximately 90 per cent of the total costs of production of a creamery are made up of raw material costs.<sup>8</sup> Out of a total value of products of \$243,379,000 in 1914, the value added by manufacture amounted to only \$30,832,000.<sup>9</sup> Obviously, both the assurance of a supply of the chief raw material—butter-fat—and the price paid for it, are of decisive importance in this industry.

### 3. DIFFERENTIATION OF FIRMS: CENTRALIZER AND LOCAL

Attacks on the problem of widening the procurement area brought a new type of creamery organization into existence soon after the turn of the century—the “centralizer.”

This type does not obtain its supply of raw material from one community only, but may gather it from a radius of as much as 500 miles. Local (cooperative or otherwise) creameries usually produce on the average from 50,000 pounds to approximately 1,000,000 pounds a year, whereas the centralizers produce from 200,000 pounds to more than 21,000,000 pounds per annum. Among the large centralizers that produce between 10,000,000 and 21,000,000 pounds are the Beatrice Creamery Co., the Fox River Creamery Co. (absorbed by the Beatrice Creamery Co.), the Blue Valley Creamery Co., the California Central Creameries, and the Fairmont Creamery Co.

The firms mentioned in the report of the Federal Trade Commission (from which the above is cited)<sup>10</sup> were at that time primarily butter-producing organizations. In addition to these, Swift, Armour, Cudahy, and other meat packers entered the butter industry as centralizers in the first decade of the century, as both producers and marketers.

Construction of the raw material gathering system involved vigorous competition between the local creamery and the centralizer. In Iowa:

... the hand separator, together with the centralizing creamery system, were responsible for marked changes within the dairy industry. The farmer began to feel more independent of his local creamery and many would bring their cream to the railroad stations and ship to almost any creamery within the state or neighboring state. Many of the smaller local plants were unable to meet the competition from the larger creameries and creameries in the state were reduced from 811 plants in 1898 to 398 in 1919.<sup>11</sup>

This absolute decline in the number of plants was not necessarily the typical net effect of the advance of the centralizer in this period. The Iowa data may seem to suggest that it was. It is entirely possible that, in the statistics of other states, and in the Census, some local skim stations and concentration points were carried on the records as creameries. An apparently more representative type of change was either the transformation of local creameries into centralizer concentration points, or direct absorption of the former

<sup>8</sup> U. S. Tariff Commission, *Butter: Report to the President of the United States*, Washington, 1926, p. 19.

<sup>9</sup> U. S. Department of Commerce, *Statistical Abstract of the United States*, Washington: 1925, p. 750.

<sup>10</sup> U. S., FTC, Report on Milk and Milk Products, 1914-1918, op. cit., p. 68.

<sup>11</sup> Iowa Department of Agriculture, Dairy and Food Division, *Annual Report*, 1945, op. cit., pp. 24-25.

by the latter. On the basis of the Federal Trade Commission's study of the industry in 1921, it seems that the centralizer system of cream gathering at concentration points "had its origin in the discontinued creamery. . . . The former small decentralized creameries evolved into buying points in order to enable the parent company to retain the volume of cream formerly manufactured into butter at these points."<sup>12</sup>

Since the centralizer system of production could exist only on the basis of a dependable supply of butterfat, maintenance of a network of cream gathering stations was decisive. Expansion of the local creamery was also predicated upon such facilities. The alternatives for the local enterprise were either to rely upon the vagaries of the contractual station agent (independent buyer), or to forego expansion and confront the centralizer as outlet for its butter. Consequently, the evolution of the cream stations depicts rather well the interfirm relationships of the industry's processing phase:

The operation of concentrating points apparently has been continued or abandoned according to their competitive value. Such points threaten the existence of weak competitors for two reasons: First, butterfat prices may be forced to a point unprofitable to the small creamery; or second, because of the high prices the small creamery becomes unable to secure a profitable supply of butterfat. The concentration point is reported to have been responsible for the collapse of many small creameries. Local price differences or discriminations are alleged in numerous complaints, in cases throughout the United States, to be the causes of the failure and reorganization or retirement from business of many small creameries.<sup>13</sup>

Although the cream station has been used, to some extent, by the local creamery, and more so by the independent cream buyer, it has, in the main, been a competitive instrument of the centralizer.

The analysis thus far reveals that technological improvements in the creamery butter industry laid the groundwork by the beginning of the 20th century for a significant change in the production organization of the industry. The local creamery, as distinguished from the centralizer, therefore emerges in the 20th century as "small enterprise." On the basis of this initial, twofold classification of firms in the butter industry, it is now possible to develop the relationship of the local creamery to the rest of the industry, i.e., to the centralizer. In so doing the concept of interfirm differentiation will be elaborated.

The rise of the centralizers produced a significant gap in the array of plant sizes in the industry. The trade recognizes two other types of creamery organization: the cooperative, and the individual. Both are significantly smaller than the centralizer plant.

An individual creamery is a private partnership, proprietorship, or in some few cases, a corporation, whose butterfat is processed directly from

<sup>12</sup> U. S., Federal Trade Commission, Report on Milk and Milk Products, 1914-1918, op. cit., p. 100.

<sup>13</sup> Ibid., p. 104.

the farmer without the intermediary use of concentration points. It is a "local" creamery. Most cooperative creameries are also local, although some few are not, i.e., are operated on the centralizer principle of procurement, notably in Nebraska.

The gap in plant size as between creameries of different types may be measured in physical output terms. In Minnesota, a state dominated by the cooperative form of business organization, the average annual output of the local creamery (cooperative and individual) was 123,364 pounds of butter in 1911, whereas for centralizers it was 807,534 pounds.<sup>14</sup> Segregated data for all three types of creamery are available for 1914:<sup>15</sup>

Centralizer: 881,611  
Individual: 81,680  
Cooperative: 119,098

With growth of the industry, average annual production in pounds increased for all three types, but the gap between the three types remained. The averages for 1942, for example, were:<sup>16</sup>

Centralizer: 1,726,267  
Individual: 323,370  
Cooperative: 378,374

Centralizer output as a proportion of total factory production expanded rapidly during the first two decades of the present century. Thereafter the proportion of centralizer output to the total declined. Reasons for this decline in ratio of centralizer production to total production will be discussed below.

It can hence be concluded that the era of centralizer penetration *on the production level*, so far as plant-output analysis suggests, covered roughly the years from 1900 to 1925. Thereafter centralizer penetration took the form of marketing control. Yet, as will be pointed out later in more detail, the spread of control over marketing by the centralizers in the later phase of evolution was possible only on the basis of the foundations laid in the earlier decades.

#### 4. DIFFERENTIATION AND THE QUALITY OF CREAM

Technical and economic problems connected with quality of butterfat furnished an additional area of competitive conflict between the local creamery and the centralizer. Limitations on centralizer plant size stemmed in great part from the time-in-transit of milk and cream and the associated technical problems of refrigeration, coupled with the effect on the final product of the condition of the raw material when it reached the creamery. Centralizers

<sup>14</sup> Anderson, M. J., *Development of the Dairy Products Industry in Minnesota*, Minnesota Dairy and Food Dept., Bull. No. 52, Minneapolis, Oct. 15, 1913, pp. 11-12.

<sup>15</sup> Computed from Minnesota State Dairy and Food Department, *Minnesota Creameries, Cheese, Ice Cream, and Canning Factories*, St. Paul, Minn., 1916, p. 9.

<sup>16</sup> *Ibid.*, 1943 edition, p. 27.

were not able to achieve a satisfactory solution to this difficulty. Although conditions on the farm itself are important, problems of transport have been most vexing.

So long as the local creamery faced the centralizer as a competitive producer, it had a powerful weapon in its favor—superior freshness of its cream. The local creamery has usually been the militant advocate of quality improvement and grading standards in the industry. It was partly on the basis of a product differentiation program emphasizing quality factors that Land O'Lakes built its great cooperative marketing organization of local cooperative producers.

On the other hand, greater uniformity of centralizer butter gives it an advantage in the market over the local creamery. The *Creamery Journal* for December, 1946, stated that:

... butter composition is still a matter that seems to bother too many creameries, especially the smaller ones. Such plants as a rule either turn out butter with too much fat or not enough. They do not seem to be able to hit a happy medium and stick to it. Often the salt runs much higher than the percentage aimed at; other times it is the moisture which is higher than safety would permit.<sup>17</sup>

An additional factor favoring the centralized concern is its ability to make several different grades of butter, where the local factory may be equipped to turn out only one grade.

The local creamery exploited to the limit the superiority of its butter quality and its direct-gathering methods during the early years of the industry. Furthermore, it organized, in alliance with the farmer, an active opposition against the centralizers in the legislative field. In the great dairy states the farmer and the local creamery were instrumental in winning legislation inimical (in intent, at least) to the growth of centralizers. For example, requirements for use of the Minnesota State Brand on butter, in 1916, prohibited the use of neutralizers, making it compulsory for creameries using the Brand to receive only sweet cream testing less than .2 per cent acid.<sup>18</sup>

Despite these advantages on the side of the local creamery, it was not possible to prevent the advance of the centralizer system with its extensive cream-station network, continued use of neutralizers, and uniform quality of product.

##### 5. PRICE DISCRIMINATION IN THE RAW MATERIAL MARKET

Necessity of an assured supply of butterfat has already been pointed out. The structure of the price competition associated with this imperative is quite complex, and the intensity of the competition was very great in the early decades. Price discrimination in the cream market during this period

<sup>17</sup> p. 20.

<sup>18</sup> Minnesota Creameries, Cheese, Ice Cream and Canning Factories, op. cit., p. 51.

has been mentioned above. In characterizing the price situation in this market, during the years 1914-1918, with especial reference to the Missouri Valley, the Federal Trade Commission declared that,

. . . every concern apparently has made variations in its prices unjustified by freight differences. Price differences have probably been made at one time or another, aggressively or defensively, by nearly every centralizer in the Missouri Valley. The basis of these price differences appears to be found principally in the competition between large and small creameries and in the competition between different methods of buying cream . . .<sup>19</sup>

What the Commission had in mind is price discrimination in the purchase of butterfat. The local creamery concerns often sharply denounced the centralizers for practising such price discrimination.

Discrimination took two chief forms: payment of different prices for the same grade of cream in different localities; and, what is essentially the same phenomenon, from a different aspect, payment of superior grade prices for inferior grade raw material in the same locality.

The question of centralizer discrimination in the cream market was vigorously debated in the editorials of the *Dairy Record* as late as the NRA years. The price of butterfat appears in quite different perspective to the local, especially the cooperative, creamery, on the one hand, and the centralizer, on the other. In the procurement of raw material by the cooperative creamery we have a form of quasi-integration, since the farmer and the manufacturer are conjoined in a single dairy enterprise. The centralizer, on the other hand, confronts the farmer simply as a buyer of his raw material. As an instrument of an organized farm group, the cooperative creamery gains from price rises in butter within a certain range which will not direct consumer demand toward the substitution of oleomargarine. But such a creamery, being primarily an outlet for its participating members' butterfat, is not motivated to reduce butterfat costs. Hence it functions differently from the centralizer.

The *Dairy Record* indicates that the small creamery in the 1930's was still fearful of discrimination, intimating that smaller processors favored price stabilization. This is similar to the attitude of small business in connection with its support of the Robinson-Patman Act.

#### 6. COMPARATIVE COSTS: CENTRALIZERS AND LOCALS

Economies of centralizer manufacturing methods to date do not seem to have been sufficiently superior to local creamery techniques to achieve dominance for that system in the processing stage of the butter industry. If it could achieve such differential production economies, it might use them to price the local creamery out of the cream market. This result could possibly be accomplished through an appropriate combination of ever-more-efficient processing methods with the centralizer procurement technique. On the other

<sup>19</sup> Report on Milk and Milk Products, op. cit., p. 103.

hand, it might be accomplished (or greatly implemented) also from the finished-product side. The price paid to patrons of a cooperative creamery, given procurement and manufacturing costs, is a function of the price of butter. Hence, the centralizers might engross the market over a period through a policy of underselling the locals in the finished-product market, and outbidding them in the raw material market. This would require drastically lower total creamery conversion costs in centralizers than in competing local creameries. In a processing industry, such as butter, where all conversion costs (including return on investment) make up only about 10 per cent of the manufacturer's price of the product, it would obviously be extremely difficult to reduce costs enough to out-price the smaller firms in this way.

The general situation with regard to the relative costs of local and centralizer creameries is that the smallest local units were at a clear disadvantage so far as conversion costs are concerned. Medium and large local firms suffered no such decided disadvantages as compared to the centralizers. This factor could not make possible any significant growth in centralizer control over the market at the expense of the multitude of efficient local creameries. On the other hand, the centralizers did acquire a decided advantage over cooperative and individual creameries with regard to the price paid for butterfat.

Exploitation of their superior position in the butterfat market, coupled with processing costs at least as low as those of efficient local creameries, gave the centralizers a differential advantage on balance. Their total costs, inclusive of butterfat, were lower (generally speaking) than were the costs of locals of all sizes, taken collectively. So long as the local creamery remained an organization dedicated so largely to the protection of the dairy farmer's cream price, it could not overcome this competitive inferiority.

However, it was rather in the field of marketing that the real subordination of the local creamery occurred.

## 7. MARKETING: EARLY DIFFERENTIATION IN STRUCTURE

A small firm processing a perishable, widely-scattered agricultural raw material is subject to special difficulties in achieving seller independence. By the nature of the situation, such a firm must either create its own marketing organization or expose itself to buyers who are few in number and more powerful than itself.

As E. A. G. Robinson points out, the expenditure required to create a sales organization may be so large as to be prohibitive, thus preventing the small firm from ever reaching the optimum technical and managerial scale.<sup>20</sup> The individual local creamery failed to develop its own separate marketing organization. During the early years it sought a solution in the

<sup>20</sup> *The Structure of Competitive Industry*, London: Nisbet & Co., Cambridge Univ. Press, 1931, pp. 78-79.

wholesaler and the organized butter exchange; and later, in the surrender of its distributive functions, either to the marketing cooperative or to one or the other of three factors—centralizer, chain grocer, or large independent wholesaler. None of these changes left the local creamery in a position of equality as compared with the buyer. What emerged was rather a mild form of seller dependence.

The small size of the local butter manufacturer, producing for a large market,<sup>21</sup> resulted in specialization in the distribution of local creamery butter and the creation of wholesaling organizations that were comparatively large-scale. This type of relationship characteristically produces seller dependence. The buyer has superiority in bargaining as a result of the unimportance of purchases from any particular manufacturer, the monopoly of market knowledge, jobber or retail connections, and possession of strategic supplies of trade credit.

A further and related source of weakness of the local processor was the lack of storage facilities. The nondurable nature of the product presents the alternative of costly storage equipment or immediate disposal of output. Few local processors have the volume to warrant, or resources to produce, such facilities for themselves. The control of store warehouses or the funds to finance holdings therefore were important facilities affecting the seller status of these small firms.

During the earlier period of the industry's history, before the engrossment of distribution by large-scale and laterally-integrated marketing concerns, the local creamery operated in a structure in which indirect marketing was predominant. Nicholls outlines the movement of butter as: creamery—wholesale receiver—jobber—retailer—consumer. However, he points out that the wholesaling and jobbing functions had already begun to fuse by 1918.<sup>22</sup> This was undoubtedly the channel through which the great bulk of local firms disposed of their output at that time. Under the contract system prevailing at that time, the seller assumed the risk of price fluctuations. "He is merely guaranteed a price based upon a quotation; a quotation which is yet to be established . . ."<sup>23</sup> The relationship was definitely contractual, and its formal character was institutionalized through the creation of the butter exchanges. This assumption of risk by the creamery amounted to an unfavorable alteration in its economic position.

A secondary marketing channel already used during the early years by the local creameries was the centralizers. At this time, the centralizers, except for the packers, were still largely straight butter processors, utilizing

<sup>21</sup> About 86 per cent of the total make of local creameries in the Middle West is shipped out of the area of production (Quintus, P. E., and Stitts, T. G., *Butter Marketing by Cooperative Creameries in the Middle West*, U. S. Farm Credit Administration, Bulletin No. 36, June, 1939, p. 6).

<sup>22</sup> Nicholls, W. H., *Postwar Developments in the Marketing of Butter*, Iowa State College, Agric. Exp. Sta., Research Bull. No. 250, Feb., 1939, p. 324.

<sup>23</sup> Quintus, P. E., "Wholesale Butter Prices and Premiums", *Journal of Farm Economics*, vol. xxi, No. 3, Aug. 1939, p. 595.



wholesalers or jobbers in addition to agents, or their own distributive outlets.<sup>24</sup> Nevertheless, the centralizers as a group had already begun to construct the marketing pattern that increasingly engrossed the local creamery market in the ensuing years. In a Federal injunction against the Elgin butter board as early as 1914 it was charged that the centralizers were large buyers of butter produced by small creameries throughout the Middle West.

#### 8. LOCALS, CENTRALIZERS, AND THE MARKETING FUNCTION

The centralizer sector of the industry exhibited industrial policies similar to those practised in other industries. A prerequisite to its continued expansion was the engrossment of adequate supply areas and sources. For its processing operations this meant the creation of a patron area. For its later augmented marketing operations, it also required the attachment of local processors to its supply system. In its relation to the procurement of whole milk and cream, the centralizer system resembled the dynamics of other processing and agricultural raw-material-using industries, keeping pace with the general trend, as succinctly described by Gras:<sup>25</sup>

The movement toward obtaining control of raw materials by manufacturing concerns had begun in the earlier period but reached its highest point in 1897-1920. Manufacturing concerns did not attempt to control agriculture; tradition and problems of finance and management made such control impractical, if not impossible, while the existence of a high degree of competition in the agricultural market made it unnecessary.

The challenge of an expanding national market, coupled with the necessity to dispose of a standardized output in volume, led the centralizers to an increasing extent into marketing activities. The enlargement of their operations in this sphere was encouraged by the presence of the numerous small local processors who were weak in bargaining position and lacked distributive facilities of their own. Nicholls points out that the movement toward large-scale cooperative marketing stemmed partly from causes similar to those which we have shown were motivating the centralizers.<sup>26</sup> Volume sales were made possible, in the case of the cooperative distributor, primarily through bringing together the output of many small creameries, rather than from the operations of one or a few large manufacturing units. The centralizers as distributors had *both* sources at their disposal. The cooperative creameries, on the other hand, were trying to avoid the alternative of selling through centralizer and other buyers in an oligopsonistic position.

By the end of what we have called the early period, i.e., by around 1920, the market structure of the butter industry was still far from conducive to the realization of a policy of "stabilized" prices, costs, and profits.

<sup>24</sup> FTC, Report on Milk and Milk Products, op. cit., p. 72. Cf. also Nicholls, Post-war Developments, etc., op. cit., p. 324. The agent operated on a commission basis for the centralizer, in contrast to the contract system of the wholesaler.

<sup>25</sup> Gras, N. S. B., and Larson, H. M., *Casebook in American Business History*, New York: Crofts, 1939, p. 731 f.

<sup>26</sup> Postwar Developments, etc., op. cit., p. 360. (Quoting Laughlin and Stitts.)

Although this aim continued to underlie centralizer policy, and was embraced by the dominant cooperative marketing organization, certain other developments, primarily entrance of food distributing chains, introduced powerful disturbing elements. The chief method with which the centralizers and the large-scale cooperative distributors experimented in an attempt to prevent this disturbance, from the price aspect at least, was public intervention in the form of guaranteed price-supports. To understand the outcome for the local creamery it will be necessary to trace the evolution of structure and policy since the beginning of the 1920's, particularly in regard to marketing.

The recent period of the industry's development is marked by the growth of large-scale marketing, the cessation of the increase of plant scale in the processing unit, and the persistence of the gap in plant sizes of local and centralizer creameries.

#### 9. COOPERATIVE MARKETING AND THE SMALL CREAMERY

Cooperative marketing in the butter industry set out originally to overcome the marketing difficulties of the local creamery without exploiting the weak bargaining position of the local firm, and without infringing upon its enterprise autonomy.

The volume of creamery butter marketed through cooperative sales agencies increased at an extremely rapid rate from 1920, when it stood at approximately 7 million pounds, or .8 per cent of all creamery butter sold, to 1926, when such agencies distributed about 114 million pounds, or 8 per cent of total marketings in the United States. Thereafter increase was slower, reaching a secular peak volume of 173 million pounds in 1931, which was 10.4 per cent of the U. S. total. Subsequently, the figures ranged around 10 per cent of all creamery butter sold.<sup>27</sup>

In the butter industry, cooperative selling agencies have never been numerous. What occurred was rather the creation of a small number of relatively large cooperatives. This may be partly due to the fact that the development came relatively late in the modern history of the industry, when the centralizers and others had already created a vast network of distributive facilities. In any case, the Farm Credit Administration reported only 7 such agencies in 1934. Of these, Land O'Lakes, a federated capital stock cooperative, has been by far the largest in the country, distributing over 100 million pounds of butter alone in 1930, its all-time peak year.<sup>28</sup>

The Minnesota Cooperative Dairies Association, from which Land O'Lakes stemmed, was formed by 130 cooperative creameries to operate as

<sup>27</sup> U. S. Federal Trade Commission, *Agricultural Income Inquiry*, Part I, Washington: Government Printing Office, 1938, p. 694. Note that the data are for cooperative sales agencies only. If cooperative creameries are included, approximately 36 per cent of all creamery butter manufactured would be accounted for. (Cf. Nicholls, *Postwar Developments*, etc., op. cit., p. 355.)

<sup>28</sup> U. S., Temporary National Economic Committee, *Large-scale Organization in the Food Industries*. Research Monograph No. 35, Washington, 1940, p. 33.

a commission house at New York. According to the Federal Trade Commission, the organization "was brought about through fear that local creameries would be driven off the market by the private centralizers . . ." <sup>29</sup> The Association in 1921 reorganized its operations under the name of the Minnesota Cooperative Creameries Association (Inc.) to act as a sales and service firm for its 345 members through emphasis upon high-quality butter, low freight rates, demand creation, and higher prices for butter and butterfat. The policy was therefore extremely effective in attracting the local creameries during that period. An important element in the program was to provide storage facilities hitherto not possessed by the local creamery, so a price structure for high quality butter might be supported. At this stage Land O'Lakes policy was closely identified with the problems of the local creamery. Its great emphasis upon the 93-score, sweet-cream, Land O'Lakes brand (1 score above New York extras) tied up the marketing cooperative with the premium system, fusing the latter with a definite local creamery program of product differentiation through national advertising. The whole program was implemented by a corps of field men, and the sale by Land O'Lakes to member creameries and patrons of a diversified line of improved dairy equipment and other supplies.

The product differentiation efforts of the cooperative sales organization, based on alleged uniform high-quality features, brought it into direct opposition to the centralizers. It succeeded in getting Federal cooperation in developing an extensive program of grading at the source. Certificates were adopted stating that each one-pound package was 93-score or better. This system was exploited widely in the cooperative's advertising program, eliciting sharp attack from the centralizers who averred that 93-score butter, in the country, might score 90 or less at the retail point. <sup>30</sup>

Land O'Lakes found it necessary, in general, to pay its members for much of its butter before resale, since it was following a centralizer policy of holding supplies off the market for favorable prices. Hence it had to forecast the price in advance. Such a relationship dedicated the organization to the pursuance of an administered price policy and to antipathy toward the butter exchanges whose prices were followed by other local creameries selling to dealers. This was also increasingly the object of the centralizers, since they too were in the main now using direct-selling methods.

The matter of administered price, and the united desire of the largest cooperative marketer and the centralizers to discard the organized butter exchanges, soon introduced a divergence in policy between Land O'Lakes and the non-member local creamery—cooperative and individual. In fact, this latter was precisely the group which was precipitated into cohesion in 1933 by the drawing up of an NRA code proposal by Mr. John Brandt, President

<sup>29</sup> U. S., Federal Trade Commission, *Cooperative Marketing*, 70th Cong., 1st sess., Doc. No. 95, Washington: Government Printing Office, 1928, p. 17.

<sup>30</sup> Nicholls, *Postwar Developments*, etc., op. cit., p. 331.

of Land O'Lakes, and the centralizers, without consultation with this small-business group. The latter then performed almost overnight a miracle of organization which resulted in the National Association of Local Creameries.

It will be recalled that the wholesale price of butter was originally the price paid the butter producer. But with changes in the structure of marketing in the recent period, the price received by a manufacturer becomes separate and distinct from the wholesale price charged by, e.g., Land O'Lakes, or a centralizer, or, of course, an independent dealer. The economic motivation of a marketing enterprise of this type dictates the augmentation of the spread between manufacturer's price and what should now properly be called the wholesale price. The distributor will be interested, of course, in maximizing this wholesale price. But as buyers of butter from local creameries, distributors naturally strive to augment distributive margins at the expense of the local butter seller, i.e., will endeavor to depress the manufacturer's price. The major cooperative marketing attempts, including Land O'Lakes, have not succeeded in avoiding this difficulty.

The Land O'Lakes organization enjoyed but a short era of growth. Whereas its great attraction for the member creamery at first was high butter and butterfat prices, this changed within a few years of the adoption of the Land O'Lakes name. In addition to the above-mentioned cleavage, the basis for butter premiums, and the favorable butterfat prices—high scoring butter—was undermined by “a steadily narrowing spread between the prices of 93-score butter and the lower grades since 1927—partly the result of depressed economic conditions, but apparently still more due to an ever-increasing proportion of high-quality butter (92-93 score) during this period which could be moved only at an ever-lower price as lower-income groups were reached . . . ”<sup>31</sup> As Nicholls points out, the expensive product differentiation program of the cooperative became consequently less meaningful to the consumer, and many member creameries were reluctant or unable to meet the added costs of buying cream for a 93-score product in the face of lower premiums than had formerly been received.<sup>32</sup> Furthermore, many chains, big buyers from Land O'Lakes in the late 1920's, began to substitute their own private brands of 93-score butter bought direct from locals. In many cases local creamery members were able to secure higher net prices (at least temporarily) by leaving Land O'Lakes and engaging in such direct selling.<sup>33</sup> The membership of Land O'Lakes consequently fell from the peak of 503 recorded around 1927 to 365 in 1936.<sup>34</sup> Although sales held to around 100 million pounds during the worst years of the depression, they fell sharply after 1933. The total number of cooperative producers in Minnesota fell only from 671 in 1928 to 631 in 1936, so the decrease in Land

<sup>31</sup> Nicholls, *Postwar Developments, etc.*, op. cit., p. 355.

<sup>32</sup> *Ibid.*, p. 357.

<sup>33</sup> *Ibid.*, p. 357.

<sup>34</sup> FTC, *Agricultural Income Inquiry*, op. cit., p. 694.

O'Lakes membership was much greater than can be explained by general conditions. Output of all creameries in the state rose from about 283 million pounds in 1930 to 302 million pounds in 1938.<sup>35</sup>

Other cooperative creameries, such as the Iowa State Brand Creameries, Inc. and the Mid-West Producers' Creameries Inc., have had considerably more success with looser, member-controlled service organizations. Development of some adequate form of cooperation for small butter producers is certainly not to be ruled out. The major experiment—Land O'Lakes—has apparently failed so far to succeed in fulfilling its original conception of an instrument of the local creamery.

#### 10. SUBORDINATION OF LOCALS TO LARGE-SCALE MARKETING AGENCIES

The development of the optimum, i.e., increasingly large-scale, distribution organization in the foods line was possible only if the organization handled a "family" of more- or less-related products. Among other factors, certain technical requirements, such as cold storage, dictated, for example, the butter-eggs-poultry combination in marketing. This economic utilization of facilities augmented the importance of the whole distributive function. It was these elements which transformed the handful of nonpacker centralizers from mere butter processors into dairy product and related foods distributors.

Moreover, the large nonpacker centralizers became important handlers of butter not produced in their own establishments. This development was begun in the early phase but greatly expanded during the interwar years. One of the largest centralizers, the Fairmont Creamery Co., with 16 creameries of its own, and with sales in 1926 of about 56 million pounds of butter in that year "was soliciting butter for sale or consignment apart from butter manufactured in its own plants in order to maintain a profitable volume for continued operation of its distributive facilities . . ." <sup>36</sup> The largest of nonpacker centralizers, the Beatrice Creamery Co., with 1925 sales of 75 million pounds, was then purchasing half of its butter from other creameries.<sup>37</sup>

The great expansion of these enterprises in the 1920's was primarily through acquisition of other enterprises, both creameries and marketing concerns. Fairmont's growth through the absorption of many smaller companies resulted in a 100 per cent increase in sales in the decade of the 1920's.<sup>38</sup> Beatrice carried the policy of engrossment of independent firms to a high level in this period. The incidence of this trend apparently fell most heavily upon the individual creameries. Beatrice maintained a steady rise in sales to 1925, then embarked upon a further vast program of acquisition which united the entire process of production and marketing of a family of

<sup>35</sup> Minnesota Agriculture Dairy and Food Commissioner, *Bulletin of Information on Creameries, Cheese Factories, etc.*, St. Paul, 1952, p. 79.

<sup>36</sup> Nicholls, *Postwar Developments, etc.*, op. cit., p. 333.

<sup>37</sup> Ibid.

<sup>38</sup> TNEC Monograph No. 35, op. cit., p. 29.

food products up to the retailer "to help carry the overhead costs of a vertically integrated marketing system . . ."<sup>39</sup> The scope and diversity of Beatrice' program of expansion through engrossment of existing enterprises is revealed in the record of acquisitions during the period from 1928 to 1930, during which period 18 small, independent creameries were absorbed.<sup>40</sup> The accompanying increase in sales was from \$53.3 million to \$82.8. million.<sup>41</sup>

Prior to the abnormal conditions of World War II, Beatrice' chief single item of business was always butter. In fiscal 1936, its butter sales of \$26,470,000 amounted to 46 per cent of total sales.<sup>42</sup> The drop to 25 per cent in fiscal 1947<sup>43</sup> was undoubtedly due to changes wrought by war and conversion, together with the secular decline in per capita consumption of butter.

In 1947, Beatrice was maintaining 2200 cream-buying stations, owned public cold storage warehouses in 6 cities, including Chicago, and operated selling branches in 25 states.<sup>44</sup>

The centralizer-packers, however, represent the apotheosis of marketing development in the butter industry. They conjoin into a vast subdivided organization, vertical integration in butter with lateral integration of a family of foodstuffs. The packers penetrated the industry as processors and dealers while at the same time they were building a multiple-purpose distribution system. Among the packers, Swift and Armour are in the forefront in butter sales. The former led all other firms in volume of butter distributed in 1935 with sales of 137.6 million pounds, or 8.4 per cent of total creamery output.<sup>45</sup> Swift manufactured 60 per cent of its sales in its own centralized creameries, purchasing 40 per cent from other processors or butter marketers.<sup>46</sup> "As late as 1936 . . . this system of purchasing butter from local creameries was greatly expanded. The Armour creameries, including concentration points for creamery butter at St. Paul and Mankato, Minn., and Dubuque, Iowa, are the most notable examples. The output of a large number of Minnesota and Iowa cooperative creameries and of a few in Wisconsin is purchased at these points . . ."<sup>47</sup>

The Swift organization has continued to expand its policy of producing the greater part of its own butter, and was reported, in the years immediately prior to World War II, to have absorbed a number of additional creameries.<sup>48</sup> The Armour policy is somewhat different. The number of creameries controlled and operated by Armour has decreased. Quintus and

<sup>39</sup> Ibid., pp. 28-29.

<sup>40</sup> FTC, *Agricultural Income Inquiry*, op. cit., pp. 244-245.

<sup>41</sup> TNEC, *Monograph No. 35*, op. cit., p. 27.

<sup>42</sup> "Beatrice Creamery", *Fortune*, June 1936, p. 83. Beatrice also sells oleomargarine.

<sup>43</sup> Moody's *Industrials*, 1947, p. 2504.

<sup>44</sup> Ibid.

<sup>45</sup> Nicholls, *Postwar Developments*, etc., op. cit., p. 351.

<sup>46</sup> Ibid.

<sup>47</sup> Quintus and Stitts, op. cit., p. 17.

<sup>48</sup> Nicholls, *Postwar Developments*, etc., op. cit., p. 351.

Stitts conclude that Armour is operating on the theory it can be a very successful merchandiser of butter but cannot process the product cheaper than efficient local cooperatives.<sup>49</sup> An apparent divergence in policy between Swift and Armour suggests the presence of two plant optima on the processing level in the industry. This is consistent with our previous discussion of costs and plant size.

If we survey the history of both packer and nonpacker centralizers, from the 1920's to the present, we see that local creameries have waged a losing battle against them in the competition over control of the marketing system in the industry. The locals have remained specialized butter-producing units, and have not, unless members of selling cooperatives, been able to develop their own marketing organizations. As a result, the competitive differentiation between locals and centralizers has become more sharp, a differentiation exhibiting itself in two major ways: (1) some of the local creameries have become almost completely dependent upon the large independent dealers; (2) others have had to sell their butter to centralizers, i.e., to their own competitors. The sale of butter by a local creamery to a competing centralizer is an illustration of what has been referred to above as "seller dependence."

The final group that should be treated in our discussion of large-scale marketing developments is the chain groceries. However, limitations of space prevent more than a mere reference to this group.

Growth of direct purchasing, and the attachment of local creameries—dependent small enterprise—to centralizers and other large distributors, makes understandable the otherwise baffling facts of (1) a decline in the ratio of centralizer output to total output beginning in the late 1920's, and (2) an increase in the number of "individual" creameries since the 1930's.

Our discussion indicates that the quantitative increase in importance of the local creamery has been associated with a decrease in its seller discretion, a subordination to the large-scale marketing concerns. The trend in marketing has confronted the small creamery enterprise with an ever-expanding oligopsony. The chief segments of this oligopsony consist of:

- (1) National or regional sales cooperatives;
- (2) Centralizers, packer and nonpacker;
- (3) Large independent dealers;
- (4) Grocery chains.

Of the four, the centralizers appear to be the primary "innovators" within the industry. Centralizers have not only outdistanced the locals in the strategic marketing process, they have continued to be important in the manufacture of butter. In this latter connection, two recent developments promise to provide the centralizers (and possibly the sales cooperatives) with

<sup>49</sup> *Ibid.*, p. 17.

new means of securing even greater competitive advantages over the local creameries. These developments are: the emergence of the "flexible" dairy-product plant, and continuous process buttermaking.

#### 11. RECENT INNOVATIONS AND THE LOCAL CREAMERY

During the early years of the industry, and especially under the stimulus of World War I conditions, many creameries expanded their byproduct production (skim milk, buttermilk, and dried casein, used for feed), and established canned milk departments.<sup>50</sup> But the enlargement of this "by-product" activity to the point of "multiple-product" operation is of more recent origin, representing an important transformation in the entire processing function. The latter evolution symbolizes the decline of the exclusive buttermaking plant.<sup>51</sup> The so-called flexible, or multiple-purpose plant carries the advantages of diversity to the fabrication point. The change was stimulated partly by the depression conditions of the 1930's and more importantly by World War II. The fall in butter prices, and the increase in quantities of fluid milk seeking an outlet in manufactured dairy products in the early 1930's, compelled a greater emphasis on the variable utilization of whole milk in the creamery and cheese factory. "In the 7 years from 1929 to 1936, the number of Wisconsin plants manufacturing dried and powdered skim milk increased from 57 to 106, and the number producing casein from 176 to 401."<sup>52</sup> In the study of midwestern creameries by Laughlin and Stitts, the same trend was noted. The sales of byproducts and butterfat, in products other than butter, on a substantial scale by three of the cooperative associations surveyed were observed to increase the earnings per unit of product received.<sup>53</sup> They call attention to the fact that it was the receipt of raw material in the form of whole milk that amplified the alternative to butter "as an outlet for butterfat itself." All three sold sweet cream at premiums to ice cream manufacturers, and one plant made large amounts of evaporated milk and some cheese.

The extension of the flexible plant system tends to compel its adoption by the specialized butter factory, among other reasons, because the former type of establishment is able to pay higher prices for whole milk due to the greater margin in manufactured items other than butter. Wartime conditions accelerated this process and accentuated the competitive isolation of the specialized (predominantly local) creamery. In Minnesota

Creameries, located in areas of diversion, not buying milk are finding it impossible to maintain their patronage because of the economic advantage enjoyed by selling the milk from the farm. Likewise, the average roadside cheese factory disposing whey along the highway in an age when proteins and riboflavin can be isolated from the whey, is not making maximum returns to its patrons and may not long remain in operation in a highly competitive area.

<sup>50</sup> FTC, Report on Milk and Milk Products, op. cit., p. 38.

<sup>51</sup> Cf. *National Butter and Cheese Journal*, January 1947, p. 31.

<sup>52</sup> Nicholls, Postwar Development, etc., op. cit., pp. 104-105.

<sup>53</sup> Patronage Problems, op. cit., pp. 47-48.



Perhaps we have been too much concerned about the investment necessary for the processing of milk and its products, and rather unconcerned regarding the economy of continuing to operate 800 creameries and 400 cream stations, when all the butter could be processed in fewer plants at a savings of millions of dollars to the producer . . .<sup>54</sup>

During World War II, many creameries installed drying equipment for processing their own milk. Under the war stimulus and the more permanent emphasis upon nutrition in selling, production by the new spray and roller process of nonfat dry milk solids rose from 3,788,742 pounds in 1942 to 98,650,529 pounds in 1945.<sup>55</sup>

The possibilities of flexibility through multiple products are feasible in the main for the large plant only, while at the same time they tend toward a greater minimum-efficiency scale.<sup>56</sup>

Inroads of the flexible plant have become so consequential that the question has been raised in the trade of an independent national organization.<sup>57</sup> This should not conceal the fact that the emergence of this type of processing establishment is a product of the evolution of the butter industry itself. As such it represents the elaboration in a new form of the internal differentiation between the local creamery and the centralizer, which has always been true.

Continuous process buttermaking, a second major innovation in recent years, has passed well beyond the experimental stage, according to the trade journals. The revolutionary nature of the imminent technical change is indicated by the fact that, whereas the butter output per creamery employee in the United States rose from 48,000 pounds per year in 1919 to 98,000 pounds per year in 1929, the conjectural output for a five-to-seven-man crew using continuous churns will be approximately 30,000 pounds per day.<sup>58</sup> Professor Thomsen declares that, "the cost of continuous churning equipment in a creamery manufacturing in excess of one million pounds of butter per year will in all likelihood not exceed the cost of equipment for the existing method . . ." and adds that the conversion to the new process will permit the complete write-off of "all existing equipment for income tax purposes."<sup>59</sup> Professor Thomsen's anticipations point to a substantial raising of the minimum efficiency scale of a plant. It seems reasonable to assume that the unfavorable incidence of such a rise would occur with greatest effect in the local creamery area rather than on the other side of the plant-gap. An output of a million pounds of butter per year is, in general, incompatible under the existing system of procurement, with the noncentralizer system.

<sup>54</sup> Minnesota, Bulletin of Information on Creameries, etc., 1943, op. cit., p. 7. The report not only points to the existence of industry "excess capacity," but also suggests to the dairy farmer that his cooperative creamery is obsolete, thus giving recognition to the deepening of the schism between the two.

<sup>55</sup> *National Butter and Cheese Journal*, January 1947, p. 81.

<sup>56</sup> Laughlin and Stitts, *Patronage Problems*, op. cit., p. 22.

<sup>57</sup> *National Butter and Cheese Journal*, February, 1947, pp. 54-58.

<sup>58</sup> "How Efficient is your Creamery?", Prof. C. L. Thomsen, University of Wisconsin Dept. of Dairying, in *National Butter and Cheese Journal*, December, 1946, pp. 38-39.

<sup>59</sup> Ibid.

Perhaps it is the spread of the multiple-purpose plant and the technical revolution in butter processing that in part lies behind the advice of the editorialist of the *National Butter and Cheese Journal* that the local creamery can best combat what it calls the encroachments of the 'big fellows' "by joining with others "so that they might operate more efficiently."<sup>60</sup> The proposal is that small enterprise maintain itself by becoming what by its very *modus operandi* it cannot be.<sup>61</sup> It is, of course, possible that the net result of the current changes will be fewer and larger establishments (in output terms) in the industry. This would involve an absolute diminution in the number of small firms, which is one type of industrial evolution. However, for those which remain, subordinate status is likely to continue.

Changes in the structure of the industry since World War II have been consistent with the long-term trends revealed in this discussion. In the face of declining total production, the number of plants (and firms) has fallen even more, *viz.* some 38 per cent from 1939 to 1951.<sup>62</sup> As a consequence, the average output of the remaining plants rose 18 per cent over the same period.<sup>63</sup>

Meanwhile, important shifts in milk utilization as between dairy products, together with altered price relationships among such products has stimulated the spread of flexible operations. The intimate connection between the advancing technique and industrial structure is suggested by Trelogan and Herrmann.<sup>64</sup>

The factors causing the rising trend in average sizes of dairy plants are less easily dated—the growth is less a life process than it is a death process. As is clearly evident in the butter industry "growth" comes mostly from disappearance of the smaller plants . . .

Larger average sizes of dairy plants are to be noted as a reflection of an evolving technology . . . What this trend shows is that over the last generation the advantage seems to have been on the side of plants that were above average in size.

Perhaps a more striking case will be found in the following chapter on the flour milling industry.

<sup>60</sup> December 1946, p. 31.

<sup>61</sup> A similar proposal for the canning industry is made, with emphasis on the requirements of volume marketing, by E. J. Coleman, Arthur Young & Co., New York City, in *Canning Age*, May, 1923. Mr. Coleman terms consolidation the "remedy for the small canner" (p. 21).

<sup>62</sup> "That Old Time Creamery," *The Milk Products Journal*, March, 1954, p. 29.

<sup>63</sup> Trelogan, H. C., and Herrmann, L. F., "Changing Economic Conditions in the Dairy Industry," *The Butter, Cheese and Milk Products Journal*, Nov., 1952, p. 61.

<sup>64</sup> *Ibid.*, pp. 62-64.

### III

## SMALL ENTERPRISE MORTALITY: COMMERCIAL WHEAT FLOUR MILLING

### 1. INTRODUCTION

The concept of an automatic flour mill constructed on the conveyor plan is attributed to the American, Oliver Evans, who was "neither a miller nor a millwright," around 1785, a year late in the long history of milling but relatively early in the evolution of the modern factory system. But this dramatic forerunner of the mass-production technique, although it spurred the capitalistic organization of production, failed to realize its revolutionary potentialities for a hundred years. The continued use of stones for grinding was indeed the "millstone around the neck" of the infant factory industry; and the practice inhibited the emergence of other than minor improvements until the milling revolution of the 1870's.<sup>1</sup>

The milling technology prevailing in the greater part of the 19th century failed to solve the problem of grinding in volume a refined product divested of the coarse bran coating and separated from the deteriorating and discoloring influence of the wheat germ. Aside from the imperfections in the product due to the flat grinding system, i.e., grinding with the stones close together so as to make as much flour as possible at one grinding, large-scale production awaited the discovery of methods which could accommodate raw materials in quantity. The union of mechanical conveyance, utilizing elevators and gravity in the many-storied mill, with processing in volume, was made possible through the importation of the purifier from France and the use of Hungarian-type iron or porcelain-fluted rolls (in lieu of millstones), in the 1870's and early 1880's. The purifier made it feasible, by means of a shaking screen and air blast mechanism, to retrieve the valuable "middlings" and screen off the brittle husk. This middling element in the wheat berry, formerly largely wasted, consists of the particles to which the hard, outer bran-covering adheres, and which encompasses much nutritious gluten useful for giving strength and rising power to bread. The employment of a series of rollers to crush by "gradual reduction" this innermost gluten and the starch cells merged with it, substantially diminished per-unit-power requirements, raised man-hour productivity, and enlarged enormously the capacity of the individual plant.

The international coalition of American automatic conveyance with the French middlings purifier, and the Hungarian rolls, provided the technical equipment of the mechanized milling industry which, since 1890, has been

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<sup>1</sup> Dedrick, B. W., *Practical Milling*, Chicago; National Miller, 1924, pp. 22-23.

subject only to comparatively minor improvements. The latter relate primarily to new sifting machines, artificial instantaneous bleaching, and improved processes of cleaning, blending, and conditioning of wheat.<sup>2</sup>

The economic ramifications of the "new process," which in application comprised the so-called "milling revolution" of the 1870's,<sup>3</sup> are unfolding even up to the present day. Focus of the first ramifications may be found in precisely that milling region—Minneapolis—where progressive policies by a few manufacturers, drawing upon a salubrious combination of water power around the falls of St. Anthony, and rich hinterland soil, brought the new processes into initial operation.

The wheat flour industry has always been concentrated in certain centers having access to power and transportation facilities and bearing varying relationships to wheat-growing areas and flour-consuming points. Production moved gradually westward from the Eastern Seaboard as the nation developed in the same direction, drawing upon supplies of low-gluten, soft winter wheat grown in the milder climates east of the Mississippi. But the areas surrounding Minneapolis—the Dakotas, Minnesota, Iowa, and Wisconsin—could not grow a low-gluten, soft winter wheat. The growers in this region expanded the planting of hard spring wheat. The new process could readily turn out excellent refined white flour from this high-gluten grain, a flour rich in gluten and middlings. The latter type of grain was therefore an important source of supplies during the first expansion period accompanying the spread of the new methods in the Minneapolis district.

Later, advantages of, and existence of the technical basis for, blending various kinds of wheat prompted the utilization of more widespread sources. Indeed, rapid increases in the amount of domestically available wheat scarcely accommodated the great spurt in flour manufacturing activity of the Minneapolis millers. They increased their output from some 193,000 barrels of flour in 1870 to almost 6,000,000 barrels in the crop year 1885-1886.<sup>4</sup>

The general economic climate from 1870 to 1900 was favorable to the growth of what was at that time still overwhelmingly a consumers' goods industry. The decennial rates of increase of population approximated 26 per cent between 1870 and 1890 and the rate was still 21 per cent from 1890 to 1900.<sup>5</sup> Per capita consumption of flour averaged as high as 244 pounds per year in the crop years 1879-80, 1889-90, and 1899-1900.<sup>6</sup> The combination of high per capita consumption and rapid population increase resulted in growth rates for total physical consumption of flour that were never equalled subsequently.

<sup>2</sup> Cf. Kuhlmann, C. B., *Development of the Flour-milling Industry in the U. S.* Houghton-Mifflin, New York, 1929, p. 226.

<sup>3</sup> Certain other innovations were also made in this period (*ibid.*, pp. 123-125).

<sup>4</sup> Kuhlmann, *op cit.*, p. 27.

<sup>5</sup> *Statistical Abstract of the United States*, 1946, p. 4.

<sup>6</sup> Malott, D. W., and Martin, B. F., *The Agricultural Industries*, New York: McCraw-Hill, 1939, p. 257.

## 2. ECONOMIC BACKGROUND OF THE MINNEAPOLIS INDUSTRY

The Minneapolis millers in the heart of the spring wheat region were the prime innovators and the most aggressive enterprisers of the early modern era. Indeed, they have been in the entire 20th century. In the former period, when that aggressiveness was associated with the continual disruption of the internal stability of the market accompanying intense competition, these millers were largely responsible for dooming the custom mill,<sup>7</sup> establishing the automatic system, creating large-scale production, and for building the corporate framework which later overcame all the local and regional boundaries that had geographically segmentalized the milling industry throughout the colonial period, and the 19th century.

In the half century following 1850 the Minnesota industry grew from a wheat output of 1,400 bushels, and flour products valued at \$500, to 70,000,000 bushels and \$100,000,000 worth of value in flour.<sup>8</sup> The latter achievement of the Minnesota millers represented in 1900 approximately 20 per cent of the total value of U. S. flour mill products.<sup>9</sup>

Advantages of the interior mills persisted only until the installation of the middlings purifier, followed by the roller system. These innovations were introduced by the city millers; notably by the Washburn firm (later Washburn-Crosby Co.) which inaugurated the adaptation of the purifier developed by Edmund N. LaCroix of Faribault in its "B" mill in 1870, and by Pillsbury, who, in the 1870's, had made a personal visit to Hungary. Both improvements were widely applied immediately in the Minnesota area. Their combination with the power and transport advantages of the strategically-placed metropolis gave the edge to the somewhat larger concerns adjacent to the Falls of St. Anthony. The already substantial profit records of the latter firms were decidedly enhanced as a consequence, the increased price of Minnesota flour now being conjoined, especially after 1880, with rapidly falling unit costs.<sup>10</sup>

This favorable record accounts for the fact that the expansion of the scale of production and the building of large reserves, later utilized to augment competitive power, was largely self-financed. At the same time, the process of self-expansion was intimately bound up with the Minneapolis banks, which the millers controlled, and to a lesser extent with banks connected with the flour manufacturers' Eastern marketing agencies.<sup>11</sup>

<sup>7</sup> A custom mill is one which grinds the farmer's grain for a fixed charge or toll, taken in kind or cash, returning the processed product to the farmer. The earliest mills were of this type. In 1909 there were still 11,691 such mills, but they produced only 2.3 per cent of the total wheat flour. (U. S., Federal Trade Commission, *Competitive Conditions in Flour Milling*, Preliminary Report, 68th Cong., 1st Sess., May 3, 1926, pp. 3-4).

<sup>8</sup> Rogers, G. D., *History of Flour Manufacture in Minnesota*. (Collections of the Minnesota Historical Society, vol. X, Pt. 1, St. Paul, 1905), p. 38.

<sup>9</sup> Pickett, V. G., and Vaile, R. S., *Decline of Northwestern Flour Milling*, University of Minnesota Press, No. 5, 1933, p. 80.

<sup>10</sup> Gras, N. S. B., and Larson, H. M., *Casebook in American Business History*. Crofts, New York, 1939, p. 721.

<sup>11</sup> Kuhlmann, op. cit. p. 139-141. In 1889 the Pillsbury-Washburn Co. (a merger of Pillsbury with a firm controlled by the brother of Governor Washburn of Wisconsin, a principal partner of the Washburn-Crosby Co.) attracted a substantial sum of foreign (English) capital. This is the only significant exception to the above.

Two aspects of this development emerge here. First, under the conditions of expansion at this period, the large number of new firms entering the industry in the Northwestern area apparently had little difficulty in procuring the necessary "venture capital," and, once they had secured a foothold, of enjoying sufficient returns to expand through reinvested profits. Secondly, the later utilization of accumulated reserves (by the larger concerns) to effect consolidations and pursue policies of industrial engrossment leading to oligopolistic stabilization, suggests a transformation of the function of these reserves. In their inception they represent the fruits of and the means to intensify policies of competitive, destabilizing innovations.

These considerable "profits of innovation" were augmented through the activities of an organized oligopsony, known as the Minneapolis Millers' Association, a wheat-buying pool stemming from the 1860's regarding which it is known that 18 of the 20 mills in the city in 1876 were members. The pool controlled the country buyers at all important interior points, dictated the prices they should pay, parceled out the wheat to the mills upon its arrival in Minneapolis, and was able, through the vital decade of the 1870's, to exclude outside buyers.<sup>12</sup>

The expansion of the Minneapolis concerns during the depression decade of the 1870's was phenomenal. Mills in the city numbered 13 in 1870. In the course of the decade, although 10 mills were destroyed by fire, sufficient new ones were constructed so that in 1880 there were 24. Two new mills each year were built between 1872 and 1876.<sup>13</sup> In the state as whole the number of mills multiplied from 216 to 436.<sup>14</sup> The remarkable growth of the Minneapolis firms was sustained through the next decade.

In striking contrast with the incredible expansion of Minneapolis during these two decades, a contrast fraught with catastrophe for thousands of mills in other areas, is the fact that the value of all U. S. flour mill products rose from \$444,985,000 in 1869 to only \$513,971,000 in 1889.<sup>15</sup> The flour output of St. Louis, center of the soft winter wheat area, experienced only a nominal rise from 1,351,000 barrels in 1870 to 1,872,000 barrels in 1890.<sup>16</sup>

It is clear, however, that the progressive development in the new areas was accompanied by the rapid population of the industry with new firms, bringing the century to a close with an industrial structure characterized by the presence of thousands of enterprises. In 1899 there were over 16,000 "flour mills" in the country,<sup>17</sup> including 9,476 merchant milling establishments.<sup>18</sup>

<sup>12</sup> Ibid., pp. 142-143.

<sup>13</sup> Ibid., pp. 125-126.

<sup>14</sup> Rogers, op cit., p. 47.

<sup>15</sup> Pickett and Vaile, op. cit., p. 80.

<sup>16</sup> Kuhlmann, op cit., p. 183.

<sup>17</sup> U. S. Congress, House, *Report of the Industrial Commission on Transportation*. Vol. IV, 56th Cong., 1st sess., Doc. No. 476, 1900, p. 240.

<sup>18</sup> U. S., Department of Labor, Wage and Hour Division, *Economic Factors Bearing upon the Establishment of Minimum Rates in the Grain-products Industry*, February, 1942, p. 11. A merchant mill purchases grain and sells the resultant processed commodity on a commercial basis.

### 3. BEGINNINGS OF INTERFIRM DIFFERENTIATION

Although the absence of tightly-held patent control, and the prevalence of free ingress permitted the increase of enterprises and the corollary extension of the competitive structure typifying the industry from 1870 to 1890, internal changes were nevertheless occurring which were destined to produce basic alterations in its subsequent history.

The internal economic differentiation between milling firms emerging in these formative years emanated from factors which may be conveniently classified into two broad groups: (1) the technological and structural factors, and (2) the factors having to do with business policy and market results.

The first group of factors consisted of unit cost differences, due partly to variations in scale of plant and firm, comparative uniformity of the product, and differences in sales channels. The second group of factors involved the export trade, buying organization, relations to the railroads, geographical diversification as a sales policy, excess capacity and price policy. The two groups of factors affected one another. This will be indicated in the course of the discussion, but they will, nevertheless, be considered individually and in order.

The unit-cost-reducing benefits of increasing the scale of plant were apparently considerable, although statistical illustration in this early period is lacking. According to the testimony of Mr. Frank Barry, Secretary of the Millers' National Association given before the U. S. House of Representatives in 1899, the small miller was already unable to supply the market at as low cost per barrel as the large plant. Intense price competition had compelled the construction of plants of larger capacity, which cut unit costs. The growth in plant scale persisted under the stimulus of the purifier and rising markets throughout the depression of the 1870's and was perhaps even more pronounced from 1880 to 1890, after the introduction of rollers.

The larger scale of organization of the rising Minneapolis leaders brought with it another advantage over smaller rivals: blending of raw materials gathered from many sources so as to provide a uniform and controlled quality of product at all times. The spring wheat of the Northwestern mills, with its higher protein content, yielding better baking results, and its distinctive flavoring of bread, surpassed all other types of wheat for high-strength bread-flour. For household purposes, a medium-strength flour was required; one that could be used for biscuits or pastry as well as bread. This created a twofold task: securing the proper wheat mixture, and engaging in progressive flour chemistry research. Through the mastery of these tasks, the large Minneapolis producers immeasurably speeded their work of outdistancing foreign competitors, those millers in the winter wheat areas, and their smaller rivals in the spring wheat belt.

It was a distinct characteristic of the small mill that it depended for its wheat supply upon local sources, just as its market was also increasingly delineated by local consumption capacity.

It is a peculiarity, however, of the dependence of the local firm upon nearby supplies that the variation in quality of wheat in a given area, from year to year, is considerable; and in the absence of alternative sources, the flour product cannot be maintained at that degree of uniformity necessary to satisfy the requirements of stable market connections.<sup>19</sup> Though some interior mills were able to sustain, and at times increase their volume of output and sales, they did so only by developing outside sources of varying quality wheat for scientifically controlled blending.<sup>20</sup>

The chemistry of flour, from tempering the berry to testing the finished product, had important economic repercussions. The integral association of the laboratory with the modern large-scale mill indicates the differential advantage which it possesses in the scientific department.

But it was not only in the seasonal variation in quality of wheat that the procurement advantages of the larger terminal mills were manifest. While it is true that the smaller plant was not so exposed to fluctuation in grain prices as was the larger firm, nevertheless, when the former experienced a poor crop in its area, it was likely to be forced to shut down. This explains some part of the high mortality among small mills during these and later years, and undoubtedly operated to raise the continuing burden of fixed costs (insofar as they are retrieved at all), particularly those charges on equipment other than prime depreciation, which would be exceptionally high in an industry such as milling where even in small plants mechanization is considerable. The factor of shutdown due to cessation of raw material supply is also an important contributor to the differential incidence of excess capacity in the industry.

Development of the grain futures exchanges resolved the predicament of the fluctuating price of wheat so far as the large millers were concerned. These institutions were not accessible to the small local mill however. Hedging has thus remained characteristically a large-mill practice.

Little is known about the difference in marketing channels resorted to by the multitude of small mills as compared to the growing terminal corporations of the Northwest area. From the sparse evidence, the commission house dominated distribution up to the 1880's, during which decade the larger Minneapolis manufacturers began to develop their future pattern of utilizing salesmen, agents and branch outlets for their own brands; with jobbers, brokers or wholesalers for unbranded and privately-branded output.

<sup>19</sup> "The growth of large-scale commercial baking . . . puts an ever increasing premium upon standardized flour . . ." (Alderfer and Michl, op. cit., p. 429). This element became important in later years, although as an advantage accruing to the large millers it was complicated by the correspondent growth of large scale enterprise in baking. The contemporary relationship here today approaches that of bilateral oligopoly. Of course, cet. par., the problem of oligopsony is at least as momentous for the small firm which tries to enter this producers' good sector of the market.

<sup>20</sup> U. S., Federal Trade Commission, *Report on Commercial Wheat Flour Milling*, Washington, Sept. 15, 1920, p. 38.



The lesser mills, other than those very small units selling in a purely local and/or custom market, relied almost exclusively upon the commission men, to whom they typically shipped on consignment. This relationship often involved the customary dependence upon the distributor as to trade credit, price, and even production policies.

We turn next to the business policies and market results which tended to accentuate the growing competitive cleavage between the Minneapolis group and the remainder of the industry.

Although additions to our national output of flour in the last quarter of the 19th century enormously intensified interarea and interfirm competition, reducing domestic prices of Minnesota "patents"<sup>21</sup> steadily from 1883 to 1888, the large Minneapolis producers were able to absorb this decline, not alone by their lower costs, but also through the expansion of the export trade.

The Washburn and Pillsbury firms were particularly active in this latter field. The former sent abroad for several months (in the late 1870's) the well-known milling and elevator executive, W. H. Dunwoody, to secure direct contracts with European buyers.<sup>22</sup> The large Minneapolis millers out-sold their English rivals, as well as their smaller American competitors, with the excellence and uniformity of their product, their lower production costs, and their close connections with the railroads. The latter were induced to cooperate by the use of low export rates and through bills of lading.<sup>23</sup>

"... the large mill had a clear advantage in the export trade. So long as the market was relatively small and undeveloped the small miller probably had the balance of advantage in his favor. But when the market broadened to include most of western Europe, and single orders for 10,000 to 15,000 barrels became fairly common, the advantage clearly moved to the side of the large mills. To secure such orders it was necessary to control large manufacturing capacity to be able to fill the orders promptly and to make sure that the flour would be of uniform quality . . ." <sup>24</sup>

This pattern was set by the early 20th century, and exporting has since been confined to a relatively small number of the largest concerns.

In an export industry manufacturing a relatively standardized commodity, small enterprise may be defined, in part, as that sector of the industry which is competitively delimited to the domestic market.<sup>25</sup>

The benefits of an organized buying pool accruing to the large Minneapolis producers in the last vital decades of the century have been referred to above. Although this condition did not persist, the biggest firms created an effective substitute in the form of their own chains of so-called "line ele-

<sup>21</sup> Flour is divided into four general grades, known as patent, straight, clear and low grade. Within those grades, however, there are many modifications. (U. S., Dept. of Labor, Bureau of Labor Statistics, *Wheat and Flour Prices from Farmer to Consumer*, Bulletin No. 130, Aug. 15, 1913, p. 34). Originally the Washburn Mill Co. had advertised its "new process" flour as made by a patented process. Hence the name "patent" flour.

<sup>22</sup> Rogers, op. cit., p. 53.

<sup>23</sup> Kuhlmann, op. cit., p. 292.

<sup>24</sup> Ibid., p. 130.

<sup>25</sup> Brady, R. A., *Business as a System of Power*, New York: Columbia University Press, pp. 237-238.

vators" along railroad rights of way, not economically unlike the gathering stations for milk and cream possessed by the centralizer manufacturers of butter.<sup>26</sup>

Control of the grain exchanges has also remained an important aspect of the procurement policies of the largest manufacturers.<sup>27</sup>

The 24 mills which by 1890 had made Minneapolis, with a flour product valued at \$31,000,000, the greatest milling center in the nation, built their supremacy with the high strategy of competition joined with collusion that marked the last contradictory decades of the 19th century. Not the least of the elements in this strategy was the relationship of the Minneapolis mills to the railroads. The local merchant mill, as well as the expanding interior mills of the state, allegedly had access to milling-in-transit on an equal basis with the terminal producers.<sup>28</sup> However, the institutional factor of railroad-miller relationships was appropriated by the larger Minneapolis producers as a competitive weapon. In general, the larger mills got better car service, avoided transfer charges that were customarily imposed on the small shipper, and enjoyed secret rebates.<sup>29</sup> Low rates to the East out of Minneapolis were defended by the millers (and the railroads) on the grounds of water competition on the Great Lakes. In 1908, on this basis, the Kansas millers were refused a flour rate from the Missouri River to Chicago equal to the Minneapolis-Chicago rate.<sup>30</sup>

As a final point regarding market results, it should be noted that the geographical spread of the marketing organization of the large millers in the "flour city" brought with it certain resultant competitive advantages. The small mill was likely to be limited to narrowly restricted market areas due to the established sales contacts enjoyed by the larger millers in the region-wide and national markets. It was in this regard also that the larger manufacturers had an additional advantage, i.e., that any localized changes in the rate of consumption could be met in part by pushing sales in other areas where the shipper already had connections. Moreover, sales declines in specific markets could be better absorbed by firms producing large volumes for geographically diversified markets, since the losses in certain areas represented smaller proportions of total output and sales. Finally, just as the total economic power of an enterprise tends to be self-generative, so the penetration of varied markets in itself stimulates a cumulative and correlative increase in the demand for its product.

A number of factors were conjoined in flour milling to produce, even at this early date, industry excess capacity, and firm excess capacity for the

<sup>26</sup> Report of the Industrial Commission on Transportation, op. cit., pp. 79, 250.

<sup>27</sup> For example, it was reported that the first vice-president of the Kansas City Board of Trade in 1940 was Roy E. Swenson of General Mills (*Northwestern Miller*, Jan. 17, 1940, p. 23).

<sup>28</sup> Report of the Industrial Commission on Transportation, op. cit., p. 243.

<sup>29</sup> Kuhlmann, op. cit., pp. 130, 172-173. This boon was subsequently removed by a series of ICC rate changes but only long after the favoritism had performed its function.

<sup>30</sup> Ibid., pp. 201-202.

small enterprise segment in particular. Flour is a consumer necessity in the modern American culture. The combination of this fact with the ease of ingress and moderate investment (in the early years at least) tended toward the multiplication of plants. Moreover, the cost structure for the firm was strongly weighted with overhead elements. In the presence of large numbers this stimulated price competition in the interest of 24-hour operation. This apparently was significantly true in the early period. Intensity of price competition was further, as indicated above, an impetus to make capacity-increasing innovations. In addition, an element that became progressively more important after the very first bonanza years in the Northwest was the relatively low value added in this essentially processing industry. Under the conditions, low value added militated in the same price-cutting direction that resulted from high fixed charges, because where material costs are large, *cet. par.*, profitability hinges upon volume. Finally, the integral relation between flour, and its important joint byproduct millfeed, always threatened to undermine earnings through the tendency of the latter to sell for what the market would bring. This danger was in direct ratio to percentage-of-capacity activity.

In consequence, as early as 1899 the Secretary of the Millers' National Association found it necessary to emphasize that "the capacity of the mills of the country is excessive . . .", that a "condition of overproduction" obtains, and that the millers have "forced their capacity far beyond what they should have."<sup>31</sup> This was the condition of the industry on the threshold of the 20th century, a year in which the national output of flour stood at 99,764,000 barrels. Forty years later the industry produced only 111,369,000 barrels.<sup>32</sup> Because any short period expansion elicited new entry, and because of the well-known tendency for durable capital assets to continue in production, however sporadically, despite financial and legal calamities, the elements within the industry which desired internal peace rather than "competitive chaos" could experience a rising market only with corollary feelings of impending catastrophe. This set of economic compulsions became translated into imperatives for policy, and the largest millers committed themselves to the destruction—absorption or control—of excess capacity.<sup>33</sup> The multitude of small producers were to them the unique carriers of the plague. The results provide in large part the 20th century history of small enterprise in the industry.

#### 4. FORMATION OF THE LEADING MINNEAPOLIS GROUP

The four largest flour-milling concerns in the industry today are General Mills, Inc., the International Milling Co., the Archer-Daniels-Midland Co. (which controls the operating firm Commander-Larabee Corp.), and the

<sup>31</sup> *Ibid.*, pp. 71, 241.

<sup>32</sup> U. S., Dept. of Labor, *Economic Factors Bearing Upon Minimum Rates*, *op. cit.*, p. 11. The data used are from the Census.

<sup>33</sup> This practice is typical of the leading "stabilization" group in many industries. (Burns, A. R., *op. cit.*, p. 512).

Pillsbury Mills, Inc.<sup>34</sup> Three of these enterprises, or components of them, figured, under varying names, in the early history of Minneapolis milling. Of the 13 leading producers analyzed by the Federal Trade Commission in its Agricultural Income Inquiry in 1934,<sup>35</sup> six operated Minneapolis mills in 1940. These six held 28,300 barrels out of the 30,150 barrels daily capacity in private mills in the entire center.<sup>36</sup> Of these six leading firms, four figured prominently in the formative years of the modern milling industry: General Mills (then Washburn-Crosby), Commander, Pillsbury, and the Northwestern Consolidated Co., now a part of the Standard Milling Co.

The external expansion of these enterprises was originally based upon acquisition and merger. This was particularly true of Pillsbury and the Northwestern Consolidated.

By 1889, 87 per cent of Minneapolis milling was conducted by four corporations.<sup>37</sup> A decade later "there were only three independent mills with a combined capacity of 2,200 barrels as against a capacity for the four corporations of 72,000 barrels per day . . ."<sup>38</sup>

Of the few subsequent new entrants into Minneapolis, there remained in 1940 only the important Russell-Miller Co., a large interior producer owning a chain of mills in North Dakota, who entered the terminal city in 1907, later reached a maximum capacity of 6,800 barrels in two mills and suffered a loss to 3,500 barrels in its present "A" mill; and the independent Atkinson Milling Co., which established itself in 1917 with 1,450 barrels capacity.<sup>39</sup> The Russell-Miller concern is today one of the largest in the country. Thus, five enterprises of national scope dominate the city's industry at present, and control approximately 91 per cent of its capacity.

The record of growth and the expansive character of their industrial policy had by no means guaranteed the status of the Minneapolis millers against subsequent shifts in the geographic and enterprise structure of the flour trade. The Census of 1899 reported 9,476 merchant milling establishments in the country and recorded 135 very large mills with annual output exceeding 100,000 barrels.<sup>40</sup> But the compelling internal difficulties of a maturing industry, coupled with the manifest determination of the largest concerns to achieve a significant measure of control, presaged momentous changes in the position of the small firm in the ensuing 40 years.

<sup>34</sup> Special Committee to Study the Problems of American Small Business, *Economic Concentration and World War II*, Report of the Smaller War Plants Corporation No. 6, 79th Congress, 2d Session, Washington: 1946 p. 220; *Business Week*, July 10, 1948, pp. 78-79.

<sup>35</sup> *Op. cit.*, Part I, 1937, p. 281.

<sup>36</sup> *Northwestern Miller*, April 24, 1940, Section Two, p. 30. The state of Minnesota maintains a small testing mill in the city (capacity 170 barrels).

<sup>37</sup> Gras and Larson, *op. cit.*, p. 645.

<sup>38</sup> Kuhlmann, *op. cit.*, p. 165.

<sup>39</sup> Kuhlmann, *op. cit.*, p. 166, and *Northwestern Miller*, April 24, 1940, Section Two, p. 30.

<sup>40</sup> U. S., Dept. of Labor, *Economic Factors Bearing upon Minimum Rates*, *op. cit.*, p. 11; and the U. S., Federal Trade Commission, *Report on Flour Milling and Jobbing*, Washington, April 4, 1918, p. 11.

# 5. MARKET MATURATION, ELIMINATION OF SMALL MILLS, AND EXPANSION OF THE MINNEAPOLIS GROUP, 1900-1920

In order to interpret the precipitous decline of small enterprise in the milling industry in the five decades of the 20th century, it is necessary to turn again to the developing strategy of expansion and stabilization pursued by the larger concerns, particularly the youthful giants of Minneapolis. To understand the policies of the latter it must be borne in mind that the growth-rate of the output from the Northwest metropolis suffered a drastic decrease after the turn of the century. Minneapolis flour output stood at almost 16,000,000 barrels in calendar 1901, but only twice after that did it ever reach 18,000,000 barrels.<sup>41</sup> Following the war-inflated total of 17,500,890 barrels in 1917, it fell off to approximately 15,000,000 barrels in 1920.

Minneapolis producers fared but little worse, so far as their Northwest production was concerned, than the industry as a whole, for total flour output increased at an average annual rate of only 0.9 per cent between 1899 and 1914, and the index of physical volume of production on an 1899 base stood at only 114.1 in 1914.<sup>42</sup> Flour milling was no longer an expanding industry.

The Minneapolis firms, insofar as their plants in that city were concerned, enjoyed no escape through the export trade, which fell steadily. There was some small gain at the expense of both large and small mills in the interior. The proportion of total Northwest flour milled outside of the terminus decreased from an average of 50 per cent during 1905-06 to 46 per cent for the year 1915-16.<sup>43</sup> The incidence of this shift, which fell primarily upon the small enterprises, contributed to the decrease in the number of "outside" mills (Minnesota, North Dakota and South Dakota).<sup>44</sup>

The accompanying rise in Minneapolis capacity between 1908 and 1917, although not warranted by ex post knowledge of secular trend, undoubtedly appeared to the millers as an appropriate response to the increase in sales subsequent to the depression of 1907-08. This illusion was reinforced (for the milling industry) by the high ratio of operations-to-capacity in the city, ranging from 66 to 77 per cent between 1910 and 1917.<sup>45</sup>

As a consequence of the slow upward movement in total consumption, and in view of the limited expansion of Minneapolis output, due partly to soil exhaustion and wheat quality deterioration, the continued growth of Minneapolis capital occurred in two new forms: geographical dispersion, and competitive appropriation of the markets of rivals.

The first 20 years of the century ushered in two significant shifts in the industry. In both, Minneapolis millers played vital roles. These shifts changed

<sup>41</sup> In 1915, with 18,089,195 barrels and in 1916, with 18,541,650 barrels. (*Northwestern Miller*, April 3, 1929, Section Two, p. 52).

<sup>42</sup> Mills, F. C., *Economic Tendencies in the United States*, New York: National Bureau of Economic Research, 1932, pp. 30, 180.

<sup>43</sup> Pickett and Vaile, op. cit., p. 14.

<sup>44</sup> *Northwestern Miller*, April 3, 1929, Section Two, p. 56b.

<sup>45</sup> Ibid, p. 56.

importantly the geographical and enterprise configuration of the industry. They involved the rise of Buffalo as a flour center, and the growth of new hard winter wheat and milling areas in the Southwest hinterland beyond Kansas City, Missouri. The expansion of these two centers occurred largely not on the basis of indigenous capital supplies, but rather from funds transferred from national, and especially Minneapolis, sources. This was preeminently the case with Buffalo, and to a lesser degree true of the Southwest.

A second new feature of the period was cessation in numerical increase, and the beginning of the decline in total establishments in the country, as reported by the Census:<sup>46</sup>

Year	All establishments (a)	Establishments producing 1,000 or more bbl. of wheat flour annually (b)
1899 .....	9,476	.....
1904 .....	10,051	.....
1909 .....	11,691	5,621
1914 .....	10,788	5,055
1919 .....	10,708	4,692
1921 .....	.....	3,845
1923 .....	.....	3,088

The period therefore introduces output increases in particular regions accompanied by decreases in others, but associated therewith is an absolute reduction in numbers of plants (and firms). The explanation suggested below for the failure of regional growth to witness the multiplication and internal expansion of new entrants exhibiting strong staying power is that the changed structure of the industry, and the policies of the national concerns associated therewith, coupled with maturing of the frontier of total demand, prevented the emergence of such a phenomenon. In New York, for example, the expansion in output was almost entirely limited to Buffalo, the growth of which was enjoyed by a small number of Minneapolis concerns, as will be shown below.

Meanwhile, the internal differentiation between concerns of national scope and the localized merchant mills in the industry, and the high mortality connected with it, proceeded at a rapid pace:

... In the 10 years from 1904 to 1914 ... one out of every three mills having an annual output of 5,000 to 20,000 barrels went out of business, their number decreasing from 2,123 to 1,377. On the other hand, the number of mills making over 100,000 barrels increased from 166 to 218, their output in 1914 amounting to over 60 per cent of the total for the entire country . . .<sup>47</sup>

## 6. BUFFALO

The key to the extension of Buffalo sales, and to an increase in influence over the national market, was considered by the Minneapolis concerns to reside in exploitation of the peculiar advantages of great terminal milling

<sup>46</sup> (a) U. S., Dept. of Labor, *Economic Factors Bearing upon Minimum Rates*, op. cit., p. 11;  
 (b) *Northwestern Miller*, April 3, 1929, Section Two, p. 110.

<sup>47</sup> FTC, *Report on Commercial Wheat Flour Milling*, op. cit., p. 8.

centers. Although certain of these, such as the older soft wheat center of St. Louis, have apparently remained relatively independent of any direct control, or amalgamation moves by the Minneapolis enterprises, the rise of Buffalo was definitely the creature of the national firms operating for the most part with head offices in the old spring wheat metropolis.

Buffalo occupied a strategic position geographically. It lay in the direct line of haul of all varieties of western wheat as it passed to the northeastern consumption centers—hard spring wheat from the Northwest, hard winter wheat from the Southwest, and soft winter wheat from the older Central States area. In an era when blending and market diversification was assuming ever greater importance, this circumstance was vital. Buffalo was also a lake port. It enjoyed unusual power resources. Furthermore, the city was in a unique position to absorb the milling-in-bond business in Canadian wheat for export as flour. The export rate applying from Buffalo was slightly lower than from Minneapolis, with the c.i.f. price on Canadian wheat approximately the same for Minneapolis, Chicago, and Buffalo.<sup>48</sup>

Up to 1901 the Minneapolis and other Northwestern concerns had been permitted to unload and store flour at Buffalo and then re-ship to eastern centers on a through rate from the point of origin of the flour. This rate was substantially lower than the sum of the two local rates.<sup>49</sup> In that year, however, the long agitation of the small Buffalo millers against this privilege of "storage in transit without penalty" was successful, and the ICC withdrew the privilege. Almost immediately thereafter the Washburn-Crosby Co. decided to build in Buffalo, and in January, 1904 its 3,500-barrel mill in that city began operation.<sup>50</sup> The Company gave as reasons for its move, in addition to the withdrawal of the free-storage privilege, (1) that Buffalo was a desirable milling center because of its position as a distribution center, (2) that wheat could be shipped to Buffalo by water at very low rates, (3) that Buffalo was in a better position than Minneapolis to mill Manitoba wheat in bond (and besides, the Canadian Pacific railway had insisted that flour made from Canadian wheat at Minneapolis be shipped out over its subsidiary, the Soo Line), and (4) that cheaper power was expected at Buffalo.

This dramatically timed move of the Washburn-Crosby enterprise was followed up by continued expansion of its facilities, up to approximately

<sup>48</sup> Pickett and Vaile, op. cit., p. 61. Rates to England were lower from Chicago than from Buffalo, and the Minneapolis concerns had particularly favorable terms from the carriers (cf. Kuhlmann, op. cit., p. 215).

Two additional advantages of Buffalo are worthy of mention. Canadian wheat imported for domestically consumed flour was purchased largely at opportunity prices as additions to domestic wheat stocks, and the Buffalo miller was strategically located for this market (cf. Kuhlmann, p. 222-223). In the second place, Buffalo was to be favored by the bakery trade: "in addition to the general urge for rapid turnover of stock, the bakers had a special excuse for urging quick delivery. Millers generally had adopted the practice of bleaching; hence aging was no longer necessary. Previously the time spent in transit on the Lakes would have had to elapse anyhow before the flour was used, and prompt delivery merely meant that it must be stored in the baker's warehouse. This was no longer necessary, and consequently direct delivery from Buffalo mills became an advantage . . ." (Pickett and Vaile, op. cit., p. 47).

<sup>49</sup> Kuhlmann, op. cit., 216.

<sup>50</sup> Pickett and Vaile, op. cit., p. 16-17. Buffalo flour production averaged 593,985 barrels between 1900 and 1904 (Kuhlmann, p. 213); but after the alacritous move by Washburn-Crosby, output in 1906 was 2,347,500 (*Northwestern Miller*, April 3, 1929, Section Two, p. 56a).

20,000 barrels daily capacity in the 1920's. The firm completely dominated the Buffalo industry until the entrance of Pillsbury in 1923 (8,000 barrels), the Russell-Miller Co. in 1924 (3,000 barrels), Standard Milling Co. in 1926, International Milling Co. of Minneapolis in 1926, and the Commander-Larabee Corporation of Minneapolis in the same year. The Pillsbury Co. shipped the machinery from its Palisade mill to Buffalo, giving "unfavorable freight rates" and the pursuance of a policy of "zoning" the industry as reasons for the step.

Hence, the spread of Minneapolis capital across the country was associated with an out-migration of real capital as well as funds from their place of nativity. After 1923, Minneapolis capacity began to decline.

In this way the Minneapolis firms, under the canny leadership of the Washburn-Crosby concern, retained control of their still considerable export trade, concentrated on the family flour trade in their declining and more obsolete Minneapolis mills, tapped new sources of mixed wheat supplies, moved closer to old and new markets, took full advantage of cheap water-and-rail rates, and diversified their investments.

The success of the original Buffalo firms in securing rescission of the storage-in-transit privilege was a Pyrrhic victory. The distinct decline in Buffalo as a milling center between 1885 and 1903, which the manufacturers of that city attributed to the railroad discrimination in favor of the western millers, was followed by a phenomenal growth subsequent to entrance of Washburn-Crosby, which raised the city's output level to 7,122,920 barrels in 1916<sup>51</sup> But the local millers failed to share in the expansion. None of the local firms in and around the city experienced any considerable growth during these years. The only new mills built at Buffalo were the property of the Minneapolis concerns. The one original enterprise in the city proper that appeared in the 1929 (and 1953) list of mills was George Urban and Son, listed as early as 1893.<sup>52</sup>

The reasons for the remarkable rout of the established firms in the city and the failure of non-Minneapolis capital to penetrate this growing production area are somewhat obscure. There may have been local causes, such as inadequate sources of funds or unprogressive entrepreneurship. However, it may be equally pertinent, in view of similar developments in other regions, to suggest that the established market connections of the original Buffalo concerns were not experiencing an increase in sales, and that the advantages of volume output and aggressive selling techniques of the Washburn-Crosby Co. in the years prior to the entrance of the other Minneapolis producers were more than the small millers in the lake city could withstand. The Minneapolis companies no doubt also were able to exploit the fact that the new firms in the winter wheat areas of Kansas, and to the west, were absorbed in capital-

<sup>51</sup> *Northwestern Miller*, April 3, 1929, Section Two, p. 56a.

<sup>52</sup> Kuhlmann, *op. cit.*, p. 215. Also, *Northwestern Miller*, Almanack Number, April 28, 1953, p. 24.



izing upon the growth in those regions, as well as resisting direct competition in their own hinterland from the Minneapolis manufacturers. As for the older concerns in the soft wheat territory, these had for some time been suffering a decline in sales with concomitant inroads on financial reserves that undoubtedly discouraged a policy of vigor regarding invasion of the Buffalo market. Moreover, there were very few enterprises large enough to contemplate the prospect. Furthermore, those millers in the region who did sell in an extensive market tended to face toward the Southeast, where they enjoyed traditional consumer preference for their soft wheat products.

## 7. DIFFERENTIATION IN MARKETING

The great terminal cities were not only funnels through which raw material in vast quantities passed, they were also centers of finance, and therefore of the supply of credit and capital. At least equal in importance to both of these factors, they were also the focus of the industry's primary distributive mechanism.<sup>53</sup> In the development of its marketing system, the Washburn-Crosby firm was no less aggressive than in its production and financial policies. The men who directed the corporation's policy early recognized that the national market, although at first overwhelmingly a consumption goods market, was increasingly developing a capital goods segment in which large commercial bakeries in urban centers were strategic. The program along this line was built up and expanded over the years. Without doubt the early growth and extensive scope of advertising activities in both segments of the market also contributed significantly to the elaboration of flexible, bilateral distributive organizations by the national concerns, particularly those operating out of Minneapolis.

The differentiation in marketing between the national and the smaller local mills had advanced quite far by the second decade of the century:

Several of the larger mills have established branch houses for the distribution of their product and sell from 30 to 60 per cent of their output in this way, the remainder going to jobbers and wholesale grocers. The smaller mills, on the other hand, distribute most of their output, exclusive of local sales, through brokers and jobbers, and make very small use of the branch house method . . .<sup>54</sup>

By the 1920's, the extension of the sales system of the Minneapolis firms had progressed so far that one authority was able to aver that "today there is not a single area in which the local miller does not have to face their competition . . ."<sup>55</sup> Although the Minneapolis producers lost volume in the section where they originally operated exclusively, the extension of their manufacturing plants, marketing organizations and selling campaigns to meet the increasing complexities of supply and distribution continued to provide them with volume sales obtained at the expense of the smaller concerns.

<sup>53</sup> "More than 75 per cent of the flour entering the competitive markets is produced by mills located in or near the three largest milling centers—Minneapolis, Kansas City and Buffalo," declared the Federal Trade Commission in 1918. (Report on Flour Milling and Jobbing, op. cit., p. 12).

<sup>54</sup> FTC, Report on Flour Milling and Jobbing, op. cit., p. 8.

<sup>55</sup> Kuhlmann, op. cit., p. 283-284.

The national enterprises were equally quick to devote their adequate financial resources, derived from years of profitable operation, to diversification of production to fill consumer demand for graham, whole wheat, and rye flours. This movement was stimulated during World War I, when the Food Administration ordered the purchase of one pound of cornmeal, barley, rye flour or oatmeal with every four pounds of wheat flour.<sup>56</sup> At this time, Washburn-Crosby and Pillsbury purchased and/or leased a considerable number of rye flour and other mills in order to fill mixed orders for the market. They also entered the production of durum wheat flour for manufacturing macaroni.

The "Minneapolis" firms also broke into the breakfast food line in earnest in the immediate postwar years after failure of some earlier experiments, constructing new dual-purpose plants in many cases.

The continuous extension of the distributive facilities of the national milling enterprises made it possible for them to take advantage of a series of increases in minimum carload weights promulgated by the ICC. The effect upon the smaller producer selling outside his neighborhood market and lacking his own marketing facilities, was in general to either eliminate his market or increase his dependence upon the jobber. The latter relationship tended to stifle the development of the small miller's own independent distributive machinery. The shortage of cars and the resulting pressure to load to capacity was aggravated during and immediately after World War I.

#### 8. THE SOUTHWEST

Meanwhile, the great Southwest wheat and flour industry had undergone a phenomenal expansion in the second decade of the century, a development which initially seemed to presage vast opportunities for the small miller. It failed to produce such opportunities.

Growth of a regional flour milling industry in the Southwest, centered ultimately in Kansas City, Missouri, and based upon an ever-expanding wheat production area, had three important phases: (1) the period in which expansion was inhibited by the competition of the Minneapolis concerns; (2) the period of penetration of Minneapolis and other outside capital; and (3) accompanying the second, the growth of national enterprise, independently of the Northwest, which formed along with the latter the present oligopolistic core of the industry.

The hard winter wheat of the Southwest produced distinctive bread-flours equally as good as the hard spring wheat of the Northwest. It was to be revealed later, in fact, that the shift away from home breadmaking and hand bakeries toward large commercial bakeries created a preference for hard

<sup>56</sup> Ibid. p. 242. James F. Bell, chairman of the Board of Washburn-Crosby Co. following the death of James S. Bell, was appointed General Chairman of the Milling Division of the War Food Administration in August, 1917. (*Northwestern Miller*, April 3, 1929, Section Two, p. 17).

winter wheat flour as against the short patents manufactured by spring wheat millers.

Nevertheless, the progress of milling in the region was slow compared to that exhibited by the Northwest at the end of the 19th century. In fact, it appears that the slow rate of market growth, together with the spread of modern technology produced some of the phenomena of economic contraction: whereas the number of mills in Kansas trebled in the decade 1860-1870, the 330 mills of 1876 manufacturing wheat flour had declined to 255 in 1910.<sup>57</sup> The competitive elimination of smaller mills was to be attributed largely to the general economic disadvantages associated with size, according to a statement at the time (1910) by C. B. Hoffman of the Enterprise concern, perhaps the leading miller in Kansas.<sup>58</sup>

The rivalry between the spring wheat and hard winter wheat millers was intense at this period, and it appears that the Minneapolis manufacturers were successful for a time in restricting the growth of the Southwest producers. The Kansas millers complained for many years to the ICC against railroad rates which, as mentioned above, they considered unduly favorable to Minneapolis and the Northwest. Furthermore, the Kansas enterprises for a long time suffered lower prices on their best flours than those received by the Northwest millers, despite the fact that their winter wheat flours were equally as good. This they attributed to the aggressive advertising and selling methods of the spring wheat producers.

The mills making flour from Kansas hard winter wheat had enjoyed a substantial export business up to 1906, but subsequently, with the rise of the Minneapolis-controlled Buffalo mills, nearly all this trade was lost.<sup>59</sup> This intensified competition among the Southwestern millers themselves, as well as that between the Southwestern and Northwestern groups, hastening under this compulsion, and the pressures of chronic excess capacity, the elimination of small firms and the growth of concentration in the Southwest.

On the basis of a survey reported in the *Northwestern Miller* in its issue of November 1, 1911, the mills of Kansas were suffering severely from excess capacity:<sup>60</sup>

Year ending June 30	Operations as per cent of capacity
1908 .....	51.16
1909 .....	51.52
1910 .....	49.60
1911 .....	46.06

Concentration proceeded under these conditions at a rather rapid pace. Unlike the relationship between Minneapolis and the Northwest, the large

<sup>57</sup> Fitz, L. A., *Development of the Milling Industry in Kansas*, Kansas State Historical Society, Collections, vol. xii (1910-11), p. 59.

<sup>58</sup> Kuhlmann, op. cit., p. 200.

<sup>59</sup> U.S., Bureau of Labor Statistics, *Wheat and Flour Prices from Farmer to Consumer*, op. cit., p. 37.

<sup>60</sup> Ibid., p. 11.

enterprises in Kansas City brought the interior mills under their ownership or control so as to form a few important combinations with their headquarters at the terminus. Some of the more prominent of these were the Kansas Flour Mills Co., the Larabee Flour Mills Corporation, the Ismert-Hincke Co., and the Warkentin interests (Midland mill, at Kansas City).

First among the outside national interests to see the growing importance of the new milling center was a firm with Minneapolis headquarters, the Standard Milling Co. which, through its subsidiary, the Southwestern Milling Co., built a 1,500 barrel mill at Kansas City in 1906. A quantitative indication of the degree of penetration by Northwestern capital into the Southwest by 1930 is revealed in this fact: of the total daily miller capacity of approximately 127,000 barrels in Kansas City (and the states of Oklahoma and Texas) at that date, the Northwestern-national enterprises owned and operated 31,000 barrels.<sup>61</sup> In the ensuing decade the Minneapolis concerns substantially extended their Kansas City holdings. To scan a list of Kansas City flour mills, with their daily capacities in 1940, is most interesting.<sup>62</sup>

Kansas Flour Mills Corp. ....	3,300
Larabee Flour Mills Co. (Monarch Mill) .....	5,500
Midland Flour Milling Co. ....	1,900
Rodney Milling Co. ....	3,000
Standard Milling Co. ....	6,500
United Mills Co., Inc. ....	2,000
Washburn-Crosby Co. ....	6,500
<hr/>	
Total, bbls. ....	28,700
Of which Minneapolis firms held .....	18,500

Of the seven remaining concerns, four of the original Kansas City enterprises retained their independent corporate identity: Kansas Flour Mills, Midland, Rodney, and United. Larabee had merged in the later 1920's with the Minneapolis Commander group; and Standard and Washburn-Crosby were of course Minneapolis firms. One of the four original Kansas City firms still independent in 1940, the Midland Co., was acquired in 1948 by International, of Minneapolis.<sup>63</sup> In this way, the Minneapolis corporations came to dominate the milling heart of the Southwest, became truly national enterprises, and narrowed down the membership in the oligopolistic center of the industry.

The penetration of Kansas City by the Minneapolis millers represented the implementation of their program of diversification in supply sources, termed by Mr. Pillsbury "zoning of the industry". Further results of this penetration were: (1) the high degree of concentration of production in the great Southwest terminus; (2) the increasing size of the Minneapolis-national

<sup>61</sup> Pickett and Vaile, op. cit., pp. 15-16.

<sup>62</sup> *Northwestern Miller*, April 24, 1940, Section Two, p. 29.

<sup>63</sup> *Business Week*, July 10, 1948, p. 78, also, *Northwestern Miller*, July 6, 1948, p. 12. The list of Kansas City mills was unchanged at the end of World War II. (Cf. *Northwestern Miller*, April 30, 1946, Section Two, p. 29).

concerns; (3) the adverse impact of geographical dispersion of the large firms upon smaller, local competitors; and (4) the consequent increasing difficulties attending the entry of new firms desirous of securing anything more than an insignificant proportion of the flour trade. One indication of the impact on entry of the change in industrial structure, and its coordinate business behavior patterns, is shown e.g., in the Northwest, where no new enterprises of importance have come into the market since the rise of the big Minneapolis manufacturers.

The record of firms in the Kansas City terminus, just discussed, further illustrates the absence of effective new entry by smaller, local or regional capital during the last thirty years.

It is not intended to suggest that the entire Southwest area also presented an oligopolistic situation by the 1920's, or even at a more recent date. Nevertheless, in Nebraska, Oklahoma, Texas and Colorado a few large concerns accounted for substantial percentages of total output, and controlled the terminal markets by the end of the 1920's.

The history of growth in the Southwest industry therefore exhibits the same trend toward concentration and engrossment of the market by national and/or regional consolidations that occurred throughout the United States (in the Northwest and Buffalo particularly), with its reciprocal, the diminution in numbers and market opportunities of the small miller. It must be kept in mind that regional and local retail markets are interwoven into the pattern of national demand, and the differential status of the large and small mill is generated on all geographical levels.

Despite the medium degree of concentration in the industry, the economic pressures motivating the larger enterprises to achieve internal market stability were very great following the post-war depression in the early 1920's. Although these enterprises typically enjoyed favorable rates of return on their investments, as we shall see below, they were of course under constraint to protect these rates. This was not easy, in view of the conditions which obtained in the industry. As a consequence, the national concerns adopted two general policies designed to change those conditions. Their first policy was to secure positions of control over the network of geographically diversified mills and elevators. The second, to remove dangers to sales and profits occasioned by the presence of large numbers of small and medium producers motivated by the compulsions of high fixed-charges, excess-capacity and traditional price-cutting principles.

#### 9. EXCESS CAPACITY, STABILIZATION, CONSOLIDATION, AND ENGROSSMENT OF THE SMALL MILLER, 1920-1940

It has been suggested in the above discussion that the larger enterprises in the milling industry were peculiarly sensitive to product-price instability, especially downward flexibility. One important reason for this is the rela-

tively narrow margin upon which this processing industry operates. It has been estimated that raw materials comprised approximately 78 per cent of the value of product in 1939.<sup>64</sup> A second circumstance is that the fixed components of total fabrication costs are very large. Wage cost, to take one element of variable costs, represented only 4.3 per cent of value of product in 1939.<sup>65</sup> The factor of high fixed costs is likely to function as a determinant of policy, particularly price policy, in a differential manner in such industries as flour milling. The large enterprise tends to price on long-run calculations so as to cover all costs; and, moreover, it very probably knows its total unit costs fairly accurately. Sponsorship and support of the cost accounting movement since World War I, by large enterprises with high sunk costs, and its implementation through trade associations under the leadership of such firms, attests to their tendency to price in the short-run on cost calculations ordinarily assumed in traditional price theory to apply only to the longer period. The small firm, on the other hand, is not likely to keep good accounts (competent cost accounting is in itself an overhead luxury) with a result that under competitive pressures, and in the absence of information, it will be inclined to make contracts on the basis of variable costs or variable costs plus some roughly-computed increment varying fortuitously. In other words, traditional theorizing regarding the menace of fixed costs for the price policy of an industry is probably more pertinent, in the later stage of the industry's history, when applied to smaller enterprise. That is to say, where structures are oligopolistic, the menace is likely to remain potential, but where they are quasi-atomistic, the potential becomes kinetic.<sup>66</sup> In an industry such as flour milling, the structure evolves into a combination of these two; the impetus for stabilization emanating from the oligopolistic segment.

The complicating circumstances surrounding the existence of high sunk costs in the local-mill segment of the flour industry tended to aggravate the tendencies of the larger concerns to pursue acquisitive policies. These complicating circumstances were (1) the relative absence of institutional barriers to entry; (2) the ease with which a small mill could change back and forth from custom to merchant milling, the former always acting as a sort of cushion to the particular firm and the latter as a disturbance to the commercial sector of the industry; and (3) the higher incidence of excess capacity among the smaller mills. The first two influences are obvious. The third will require illustration and elaboration, not merely because it helps to explain the engrossment practices of the oligopolistic segment, and the effects of these practices, but also because inordinate excess capacity is itself one of the aspects of small enterprise status in this industry.

According to census data, all flour mills in the U. S. utilized 58.5 per

<sup>64</sup> Alderfer and Michl, *op. cit.*, p. 13.

<sup>65</sup> *Ibid.*, p. 12.

<sup>66</sup> The term "quasi-atomistic" is used to denote an atomistic fringe of small firms surrounding a dominant oligopolistic core of large enterprises.

cent of their capacity in 1939, 56.7 per cent in 1940, and 59.8 per cent in 1941.<sup>67</sup> This condition has been chronic in the industry almost since the inception of the "new process" toward the end of the 19th century. It would seem that the leading firms might have cause for concern as a result of the incipient danger to the price structure residing in this situation. To some extent the history of the industry justified such concern. It is no doubt a costly testimonial to the partial failure of all efforts at stabilization in this market, that such a condition should persist. It is a further striking fact that, for some at least, flour milling has provided a consistently remunerative investment.

However, analysis of Table 1 will reveal much that remains obscure if one is limited to overall averages. The interfirm differentiation, so abundantly clear from these data, is also representative of the entire industry, both geographically and over time.

Small enterprise in flour milling may be defined, in part, as that sector of the industry which typically operates at the lowest percentages of capacity.

TABLE 1. PERCENTAGE OF OUTPUT TO FULL CAPACITY,\* KANSAS MILLS, BY SIZE OF MILL, 1908 TO 1928

Crop year (ending June 30)	Daily capacity of mills (bbls.) and average percentage operated					Average
	1,000 and over	500 to 1,000	200 to 500	100 to 200	Less than 100	
1928 .....	56.4	52.8	43.3	17.9	17.2	53.2
1927 .....	68.0	57.0	51.0	33.0	21.0	62.0
1926 .....	53.0	40.0	37.0	25.0	20.0	46.0
1925 .....	63.0	56.0	46.0	33.0	23.0	57.0
1924 .....	58.0	49.0	43.0	31.0	26.0	53.0
1923 .....	53.0	56.0	46.0	32.0	26.0	55.0
1922 .....	62.0	64.0	47.0	34.0	21.0	59.0
1921 .....	54.7	50.2	40.3	24.5	15.7	48.3
1920 .....	65.2	65.1	55.5	33.2	23.5	60.6
1919 .....	59.3	57.0	49.6	33.4	22.3	54.3
1918 .....	53.5	53.0	48.9	30.2	18.1	49.9
1917 .....	64.0	68.0	58.0	36.0	26.0	61.0
1916 .....	68.0	64.7	62.3	38.5	30.5	62.8
1915 .....	70.5	71.8	63.6	39.3	28.6	67.0
1914 .....	69.6	61.0	64.4	38.6	28.0	62.7
1913 .....	67.5	64.0	60.7	30.5	32.2	59.8
1912 .....	53.3	59.3	53.4	28.0	27.2	51.4
1911 .....	57.2	63.8	52.0	30.1	27.2	53.2
1910 .....	53.0	63.0	59.0	44.0	29.0	54.5
1909 .....	50.0	68.5	62.1	41.0	36.1	56.1
1908 .....	62.5	64.0	60.0	42.6	26.7	51.1
Average .....	60.2	59.4	52.5	33.1	25.1	56.1

\* Capacity based on 300 running days. Source: *Northwestern Miller*, April 13, 1929, Section Two, p. 54.

<sup>67</sup> U.S., Dept. of Labor, *Economic Factors Bearing upon Minimum Rates*, op. cit., p. 20.

It was pointed out above that the strategy of the national and regional enterprises was to occupy the focal positions in the great terminal cities, leaving the interior areas as the special province of the small producer. The success of this policy is indicated in the fact that by 1941 "two-thirds of all mills . . . which employed less than 6 workers, are in communities smaller than 2,500 population, four-fifths are in towns smaller than 5,000 population, and 93 per cent are in towns smaller than 25,000 . . ." <sup>68</sup> The vindication of the strategy from a competitive standpoint emerges from an analysis of mill activity in terminal centers as compared with activity outside. A study of the ratio of output to capacity in Kansas City and the interior mills, from 1911 to 1928, reveals that the latter functioned at higher activity ratios from 1911 to 1915; but after 1915, with the exception of one year (1918), the Kansas City mills showed higher ratios. <sup>69</sup> (It should be emphasized this difference is typical.)

Small enterprise was therefore bearing an inordinate proportion of the excess capacity partly because of its location outside the more favorable metropolitan sites. It is obvious, of course, that disadvantages of small-firm location encompass more than the excess capacity element, as has been suggested in part above. <sup>70</sup>

It is significant for the small miller that expansion of medium enterprises in the interior centers was predicated upon their provision of procurement facilities independent of grain exchanges in the large cities. For most of their supplies these medium enterprises established their own lines of elevators at country shipping points in order to buy directly from farmers, following the policy initiated by the Minneapolis producers in the 19th century. <sup>71</sup> The possession of vast terminal storage facilities and lines of country elevators is the hallmark of large and successful enterprise in the industry. The growth of this integrative phenomenon proceeded *pari passu* with the decline in the volume of trading in grain futures on the principal "contract markets" of the U. S.; from \$21,459,697 in 1926 to \$8,418,072 in 1940. <sup>72</sup> The small manufacturer, on the other hand, to the extent that he is large enough to secure raw materials from beyond his immediate plant area, must rely almost exclusively upon dealers and public elevators.

It might be thought, under the stimulus of favorable wartime conditions from 1940 to 1945, that smaller millers would have been able in some degree to overcome these capacity problems. There was, of course, a substantial growth in output during those years. The U. S. total rose from 204,720,000 sacks of 100 pounds in the crop year ended June 30, 1940, to 252,570,000 in

<sup>68</sup> U.S., Bureau of Labor Statistics, *Earnings in the Grain-mill Products Industries*. Bulletin No. 712, Washington, 1942, p. 21. These data are from a sample utilized for a wage survey.

<sup>69</sup> *Northwestern Miller*, April 13, 1929, Section Two, p. 56.

<sup>70</sup> One advantage of small-city location is lower wages.

<sup>71</sup> It was reported in 1935 that one of the leading producers in the country procured 85 per cent of its wheat from its own or controlled country elevators (U.S., FTC, *Agricultural Income Inquiry*, op. cit., Part 1, p. 1085).

<sup>72</sup> *Northwestern Miller*, April 30, 1941, Section Two, p. 50.



the crop year 1944-45—the peak for the war period.<sup>73</sup> Yet the same differentiation found in peacetime, with its stagnant demand, held during wartime, *viz.*, the larger mills operated at much higher ratios to capacity; concentration of production was greater than concentration of capacity in the industry (corollary to the first); and the operating ratios of the smaller interior mills were generally less than those for mills in the termini. (Also corollary to the first point, since the smaller mills are in the interior.)<sup>74</sup>

These comparisons were typical of the industry during the war years. Small mills failed to better their general position. Capacity status of small mills was substantially unchanged from 1942 to 1945; that of large mills was notably improved.<sup>75</sup>

It must be recalled that pressures for business expansion on the part of national enterprises, in the context of the inimical influence of this industry's excess capacity upon price and profit ratios, operated within the framework of a practically constant total demand. Significance of the factor of constant demand resides, at this point in the discussion, in the fact expansion of national and regional corporations, so outstanding in the years 1920 to 1940, had to occur at the expense of the markets accessible to small enterprise. The result was the reduction in total number of mills in the U. S. from 6,485 in the census of 1921 to 2,143 in 1939.<sup>76</sup> Further discussion of these developments will be clarified by a prior review of the activities of the Millers' National Federation and its affiliates in the early 1920's and the role of the larger producers in that organization.

The immediate background for the work of the Federation, which was strongly along the lines of industrial stabilization, beginning in this period, is afforded by certain elements at work in the war period together with the economic conditions of the first postwar years. These elements, it is presumed, also functioned importantly as proximate stimuli for the consolidation movement of the late 1920's and early 1930's.

The index of physical output of flour and grist mill products, on a 1914 base declined from 105.7 in 1919 to 91.0 in 1921, and still stood at only 96.2 in 1923.<sup>77</sup> American exports of wheat flour, which reached 26,450,000 barrels in 1919, dropped precipitously to 15,025,000 in 1922. The postwar recession of 1921 carried the price of 1st patents at Minneapolis from its war-period peak of \$14.60 a barrel in June, 1920 to \$7.10 in December, 1921. The general revival in 1922 failed to stem the downward trend. Average yearly prices of 1st patents declined from \$12.61 in 1920 to \$8.76 in 1921, \$7.37 in 1922, and to \$6.70 in 1923.<sup>78</sup> The fall in prices of wheat flour was, if any-

<sup>73</sup> *Ibid.*, April 30, 1946, Section Two, p. 26. The change in method of calculating physical units from barrels of 196 pounds to 100-pound sacks occurred toward the end of the war.

<sup>74</sup> *Ibid.*, pp. 28, 29.

<sup>75</sup> *Ibid.*, p. 29.

<sup>76</sup> U.S., Dept. of Labor, *Economic Factors Bearing upon Minimum Rates*, op. cit., p. 11.

<sup>77</sup> Mills, F.C., *Economic Tendencies*, op. cit., pp. 194-195.

<sup>78</sup> *Northwestern Miller*, April 3, 1929, Section Two, pp. 44 (export data), 90 (prices).

thing, slightly greater than the drop in wheat prices.<sup>79</sup> To these adverse forbears of stabilization and consolidation there must be added the subjective influence emanating from the deep current of merger psychology which prevailed during the 1920's. A further subjective factor of moment was the experience gained by the leading producers, acting as an emergency committee through the Millers' National Federation, between 1917 and 1919. It was invaluable experience in price control, profit stabilization, output restriction, control of new and old capacity, and administrative subdivision and coordination of the entire industry. Both war and depression thus provided the immediate catalyst for precipitating out of the admixture of market maturity—stabilization, consolidation and engrossment of small enterprise.

The record of the work engaged in by the national and regional trade associations, between 1922 and 1926 particularly, related as it is primarily to control of price, capacity and production, is significant because it expresses the type of policy pursued toward the small-firm segment in market conditions characterized by maturity. It further indicates the leading role played by the largest enterprises with greatest fixed investments. Finally, it shows both the inherent tendency of the small firm to participate in stabilization programs and its opposite tendency to act independently where the quasi-atomistic segment is of some importance in the industry. It appears to be the greater compulsion among the large firms to effect stabilization, juxtaposed with the centrifugal tendencies of the small independent, which creates the conflict between the two segments, acting to submerge the latter group where such conditions obtain.

As with a very large number of trade organizations, the Millers' National Federation is an instrument of the more prominent concerns in the industry. Inadequate representation of the small firm is typical.

The Millers' National Federation itself was reorganized in April, 1924, giving control to the largest concerns through a plural voting arrangement. Milling companies were made direct members, with the voting power of each *dependent upon production* (not capacity!).<sup>80</sup>

In its inquiry during the 1920's into competitive conditions in the industry, and the moves through the Federation to further "agreements, understandings, and cooperation to restrict competition," the Federal Trade Commission found that the most active firms in these moves were the larger ones, mentioning in particular the Washburn-Crosby Co., Pillsbury, and Kansas Flour Mills Co., Kansas City, Missouri.<sup>81</sup> The movement for stabilization among the largest enterprises was not limited to the three firms mentioned. Take the Southwestern region, for example. There, many of the

<sup>79</sup> The weighted average yearly price of No. 1 northern spring wheat at Minneapolis fell from \$2.07 per bushel in 1920 to \$1.17 per bushel in 1923, a decline of 43.5 per cent. (*Northwestern Miller*, April 29, 1947, Section Two, p. 30). The above decline in price of flour over the same period amounted to approximately 47 per cent.

<sup>80</sup> FTC, Conditions in the Flour-Milling Business, pp. cit., p. 11.

<sup>81</sup> *Ibid.*, pp. 24-26 and FTC, Competitive Conditions in Flour Milling, op. cit., p. 2.

larger mills, in addition to the Kansas Flour Mills Co., were prominent in the activity through the Nebraska Millers' Association.<sup>82</sup>

A particularly destabilizing element was the Atkinson Milling Co., the small independent Minneapolis concern of 1,450 barrels daily capacity, accused by the president of the Southern Minnesota Association of "being the worst cutters in the business."<sup>83</sup> The (smaller) Southern Minnesota mills themselves were, in the view of others, disturbing influences, as shown by an excerpt from a letter dated December 15, 1923, sent by W. H. Sudduth, vice president of the large Commander Mills Co. of Minneapolis to Walter Stern, president of Bernhard Stern & Son, Milwaukee, Wisconsin. It read:<sup>84</sup>

We attribute present conditions to the fact that everyone is short shipping instructions and is trying very hard to keep the mills running. The unfortunate part of the whole proposition, as I look at it, is the fact that most of our competition is among our own Southern Minnesota Mills. We do not hear very much about Washburn-Crosby Company, Pillsbury, or Consolidated, but we hear a whole lot about a number of the Southern Minnesota Mills. I presume the other Southern Minnesota Mills hear about us.

The reference to Washburn-Crosby is apparently indicative of a change in general price policy by the firm. Prior to 1923, the largest firm seems to have pursued a flexible policy on competitive pricing, but around the time of its assumption of leadership in the stabilization movement it seems to have embraced the "new competition" doctrines of Mr. A. J. Eddy.

The Washburn-Crosby firm was sympathetic to, if not the progenitor of, the utilization by the Millers' National Federation of the facilities of the Livingston Economic Service, an organization which acted as a statistical clearing house for stabilization purposes and checked up on reports of price-cutters.<sup>85</sup>

The work of stabilization performed by the Millers' National Federation followed two main related channels: control of excess capacity through propaganda and pressure among the rank and file of its membership to curtail production rates, with a maintenance of minimum prices largely by means of strong pressure upon culprits, from other members of the industry acting through the Federation. The latter objective was implemented by a great emphasis upon cost accounting, and the widely disseminated but deliberately unpublished code of "uncommercial and unethical practices that should be 'outlawed' by flour millers."<sup>86</sup>

The problem of excess capacity was placed squarely before the industry on December 22, 1924 in a letter from Sydney Anderson, president of the Federation, to the members of the organization's executive committee.<sup>87</sup> Mr.

<sup>82</sup> FTC, *Competitive Conditions in Flour Milling*, op. cit., pp. 38-39.

<sup>83</sup> *Ibid.*, p. 31.

<sup>84</sup> *Ibid.*, p. 28.

<sup>85</sup> FTC, *Open-price Trade Associations*, op. cit., p. 434. Mr. George Livingston of the Livingston Economic Service was Executive Vice President of the Federation from 1929 to 1939 (*Northwestern Miller*, April 30, 1941, Section Two, p. 16).

<sup>86</sup> FTC, *Competitive Conditions in Flour Milling*, op. cit., pp. 77-78.

<sup>87</sup> *Ibid.*, pp. 130-131.

Anderson's statement on the capacity problem gives first place to the "obsolete or uneconomically located" mills; presumably these are the mills which (according to him) have "no real permanent market" and frequently effect sales "at prices below the general price level." This generally accurate conception of small enterprise in flour milling at the same time expresses well the attitude of the large concerns. For the latter, the central danger of excess capacity stems from these smaller mills, as Mr. Anderson indicates in the letter. It should be noted, however, that a certain amount of the obsolete plant was acquired by large firms for purposes of dismantling or removing it from the small enterprise segment of the industry.

In his statement, Mr. Anderson stressed other focal problems of the industry: (1) growth of large scale baking, the answer to which appeared to be "some form of consolidated selling"; (2) development of a voluntary minimum price policy that would guarantee profit margins; and (3) spread of a cost accounting system throughout the industry which would be effective in "ironing out the competitive difficulties which occur under pressure."<sup>88</sup>

The whole question of capacity as related to the large and small producer was clarified in connection with a controversy over the NRA code for the industry. The Millers' National Federation had continued its activities throughout the later 1920's, particularly in connection with the trade practice conference work sponsored by the Federal Trade Commission. Control of capacity figured prominently in these conferences.

The NRA controversy followed some decisive years of merger and consolidation in the industry, years which finally transformed the original Northwestern concerns into national enterprises. This was particularly true of the leading firm. Relatively high activity ratios enjoyed by these firms tended to foster agreement with several other important national and regional millers on a high ceiling of 144 hours.

This proposal brought out all the internal schisms within the industry. The outright opposition which it elicited, together with the variety of alternative ceilings suggested, each receiving substantial support, contributed greatly to its elimination from the final code. An extensive poll was taken by the Federation after a storm of protest led by the National Grange and the *new* National Independent Millers' Association, which had sprung up around a program of opposition to the Federation code. The poll revealed that of 18 firms with annual output in excess of 800,000 barrels in 1932, ten voted for 144 hours and six favored no restrictions on hours. At the other extreme were 252 producers, each of which had manufactured less than 25,000 barrels in 1932. Of this group of small enterprises, 71 voted for a 78-hour ceiling, 91 for a 96-hour ceiling, and only 30 for no restrictions.<sup>89</sup> Thus, in a poll

<sup>88</sup> Ibid., pp. 131-135. *passim*.

<sup>89</sup> Ibid., December 13, 1933, p. 662.

conducted by the trade association itself, the small millers favored restriction of activity much more clearly than did the large firms.

The lower ceilings advocated by the small producers appear to have been an attempt to compensate for their typically poorer rate of activity. From the standpoint of the largest concerns, 144 hours actually amounted to no limitation, whereas a 78-hour or 96-hour restriction would have seriously crippled them, running up their costs despite their ability to use standby capacity. Two important implications of this are: the higher activity ratios of the large firms had become institutionalized and acknowledged, and, they considered it possible to control the capacity danger by means of general competitive superiority plus application of the other two provisions of the article in the proposed code on regulation of production.

Meanwhile the capacity controversy brought into public view two other significant aspects of the differentiation between the national and the local enterprises in this regard. It was made clear that the former had for some time followed a policy of buying up capacity and either (1) dismantling it or (2), holding it as a stand-by reserve. The existence of a reserve plant in operating condition reinforces the conclusion that the 144-hour ceiling on any one unit was actually no limitation. In other words, the 144-hour proposal can be interpreted, in the context of the conditions of the industry in 1933, as a publicity device designed to offset the goal of the smaller producers to "keep the mills running," and as a supporting clause to the other two provisions of the article on regulation of production in the code proposal.

It is not implied in connection with the interpretation developed herein, of the 144-hour provision, that the larger enterprises were not prepared to curtail production in their own plants, e.g., on grounds provided in traditional monopoly and oligopoly theory. However, the work of the Federation with regard to capacity control at this stage in the industry's history seems to have been directed against the quasi-atomistic segment. The latter really embraced the idea of curtailment which was only ostensibly favored by the former. The small-firm group turned curtailment into a competitive weapon against the larger producers. Such a move, however, had the unfortunate consequences for the small millers of representing them in the eyes of the public as proponents of contraction and inefficiency. Such an anomaly—the advocacy of production curtailment by a quasi-competitive enterprise grouping, which traditionally had sought to raise its activity ratios—is to be explained only in terms of the desire of that group to close the gap in operating rates between it and the larger concerns.

The enterprise ideology which tends to accompany change in the structure of markets in the direction of oligopoly will produce output curtailment rather than the foregoing of a return on all costs. There is for the oligopolistic firm no "given demand function" to which a pertinent range of costs is

related; there is rather an administered price determined by total costs plus profit (or, including profit) at some "optimum" output point on the estimated cost-plus-profit curve. The spread of cost accountancy is in large part the expression of this attempt at administration of prices. This elevates costs to the status of an independent variable in price determination.<sup>90</sup> Production is geared to an optimum capacity operations rate rather than to any "given" market demand.

The opposite enterprise viewpoint is expressed in the slogan, indicated above, of the organization of small milling concerns, the American Millers' Association, Marion, Indiana. That slogan is: "Keep the Small Mills Running."<sup>91</sup> It is precisely this approach to the problem of excess capacity which might be termed the out-of-pocket-costs viewpoint. It appears as unethical to the administered-price ethic, creating conflict between the two groups of a segmentalized industry. Motivated by short-run cost objectives, where only variable costs are relevant, and assuming highly elastic, given, firm demand functions, the small miller conforms much more closely to the Marshallian competitive archetype than does his large-scale rival. The two segments therefore represent conflicting price policies within the single industry: "administered" vs. "market."

Failure in these years of the stabilization movement, functioning as it did largely through the trade association, has been attributed to the industrial structure; i.e., to the large number of sellers.<sup>92</sup> This seems to have been a primary factor. However, structural changes toward fewer sellers proceeded rapidly, following the activities of the Federation in the early 1920's. Certain leading elements in the industry apparently shared the opinion that where voluntary cooperation failed because of number of sellers, consolidation and further concentration was a surer alternative. After the middle 1920's, concentration, combination and stabilization work by the leading enterprises proceeded conjointly. Combination and expansion of large units by acquisition were superimposed upon concentration of capacity and output under the aegis of approximately 200 mills owned by a considerably smaller number of firms.

The comparatively constant volume of sales during the period 1920 to 1940 sharpens and clarifies the declining importance of the small mill as illustrated, e.g., in plant-size series. Census figures on the number of establishments, beginning with the first year in which the elimination of plants with annual value of product of less than \$5,000 occurred, are as follows:<sup>93</sup>

<sup>90</sup> FTC, *Open Price Trade Associations*, op. cit., p. 192.

<sup>91</sup> *Northwestern Miller*, May 22, 1940, p. 19.

<sup>92</sup> TNEC, Monograph No. 35, op. cit., pp. 43-44.

<sup>93</sup> U.S., Dept. of Labor, *Economic Factors Bearing upon Minimum Rates*, op. cit., p. 11. It is estimated that, had the exclusion of plants with output valued at \$500 to \$5,000 been made in 1919, fourteen per cent of the mills reported for that year would have been eliminated, along with one-fifth of 1 per cent of the total value of products of all mills. This would have left 9,209 to be compared with the 6,485 for 1921, a drastic fall, no doubt due largely to the over-extension of small plant construction during the war, followed by the depression of 1921.

Exclusion of small merchant mills from the 1939 census is estimated by the *Northwestern Miller* to have amounted to about 1,000, May 22, 1940, p. 12.

Year	Number of establishments
1921 .....	6,485
1923 .....	5,232
1925 .....	4,413
1927 .....	4,035
1929 .....	4,022
1931 .....	2,412
1933 .....	1,932
1935 .....	2,193
1937 .....	2,238
1939 .....	2,143

Inability of the small firm to retain its market in the face of requirements of modern technology, with its concomitant large fixed plant, the superior procurement and marketing facilities of the more powerful competitor, with geographical shifts, matured conditions of demand, and cyclical vicissitudes, is expressed in these striking data on number of plants. This decline in numbers is the main form in which the "problem of small enterprise" exhibits itself in the flour milling industry. That the downward trend has continued under war and postwar conditions is shown in the more comprehensive records on the number of flour mills as compiled by the *Northwestern Miller*.<sup>94</sup>

Year	Number of establishments
1939 .....	3,865
1940 .....	3,423
1941 .....	3,337
1942 .....	3,001
1943 .....	2,947
1944 .....	2,913
1945 .....	2,571
1946 .....	2,562
1947 .....	2,534
1948 .....	2,148
1951 .....	1,799

The fewer small firms which remain in the industry, moreover, have received a progressively smaller proportion of the total volume of business. Our analysis of the milling industry has shown that excess capacity, attempted market control (stabilization), and the high mortality of independent enterprise are all conjoined in a common pattern of evolution.

The organic character of this evolutionary process is revealed in the continuous growth of concentration in production and the progressive improvement in the competitive position of the large firms, in contrast to relative deterioration in the economic importance of smaller millers. These trends in the past are the empirical premise for the anticipated future disadvantaged status of small enterprise. It is most interesting to examine briefly specific trends in the case of the largest concerns.

<sup>94</sup> 1939-1947, from the issue of April 27, 1948, Section Two, p. 26; figures for 1948 and 1951 from the Almanack Number, April 28, 1953, p. 23.

While total value of product fell slightly from \$877,680,000 in 1914 to \$853,219,000 in 1935, the capitalization and assets of ten leading firms in the industry grew very substantially.<sup>95</sup> Their total capitalization increased from \$60,519,942 in 1914 to \$159,905,740 in 1935, a rise of 164.2 per cent. This increase in total capitalization was almost wholly composed of, and about equally divided between, growth in capital stock (\$48,455,210, or 131.2 per cent) and in surplus account (\$46,300,355, or 262.9 per cent). "The increase in total capital stock was principally due to issues in connection with acquisitions, mergers, and consolidations of other companies, issues to finance construction of additional properties required in the natural expansion of the business, and stock issued as dividends . . . The increase in surplus . . . resulted largely from reinvested earnings amounting to \$48,328,867. However, it should be noted that part of the increase represented surplus from revaluation of assets which amounted to \$7,184,699 at the end of 1935. . ."<sup>96</sup> This is an enviable record of rapid expansion for a stagnant industry, but a record experienced by only a relatively small group of enterprises. From the standpoint of the lesser concerns, the outstanding features of this expansion were: (a) the rate of growth of the largest firms was far greater than that for the small, enduring firms in the rest of the industry; (b) part of the growth was in the form of direct acquisition, for purposes of continued operation, of independent enterprises; (c) part of the expansion also involved acquisition of plant for purposes of removing it from the industry entirely; and (d) the differentially high profitability enjoyed by the largest firms, as compared to the smaller producers.

In a nonidentical group of milling firms, covering the period 1919-1922, and using size of milling investment as a measure, the following rates of return (net income over investment) were found to obtain:<sup>97</sup>

Size of investment	Rate of return (per cent)
Under \$250,000 .....	6.1
\$250,000 to \$500,000 .....	8.4
\$500,000 to \$1,000,000 .....	10.5
\$1,000,000 to \$2,000,000 .....	10.0
\$2,000,000 and over .....	11.0

Closely similar results were arrived at by using output as the criterion of size.

In a later study of the Federal Trade Commission, from which information pertaining to the Washburn-Crosby Company was originally excluded due to an injunction obtained by the milling firm, but which was subsequently

<sup>95</sup> The ten were General Mills, Inc.; Pillsbury Flour Mills Co.; Commander-Larabee Corp.; Standard Milling Co.; Flour Mills of America, Inc.; Colorado Milling & Elevator Co.; Russell-Miller Milling Co.; International Milling Co.; Centennial Flouring Mills Co.; Fisher Flouring Mills Co.; Globe Grain & Milling Co.; King Midas Mill Co. (FTC, *Agricultural Income Inquiry*, op. cit., pp. 907-910).

<sup>96</sup> *Ibid.*

<sup>97</sup> TNEC Monograph No. 35, op. cit., p. 84.



procured by the Commission as a result of reversal by a lower court, the inclusion of the Washburn-Crosby data in a sample of 91 identical concerns for the 2-year period, 1923-1924, lowered the average investment per barrel and raised the average rate of return for the group.<sup>98</sup>

Eleven leading producers in the industry (including General Mills) taken as a group showed exceptionally favorable profit records through the depression years of the 1930's.<sup>99</sup> Part of this favorable profit record, though only part, can be attributed to continuing unit cost advantages enjoyed by the largest enterprises. A study by the Millers' National Federation covering the crop years 1935-36 to 1937-38 showed that mills with annual output of under 50,000 barrels averaged \$1.233 milling cost (manufacturing, administrative, selling and interest on long-term creditors' claims) per barrel, whereas those with output of 1,600,000 barrels and over averaged \$1.017 per barrel, a striking differential.<sup>100</sup>

General Mills, and the other large concerns to a lesser degree, have developed the flexibility, diversity and size necessary to maintain high profitability in spite of the chronic "problems" obtaining within the industry. The success of these larger enterprises, and their great growth during the difficult period from 1920 to 1940, indicates that for them the problems were either largely shelved or shifted to other, smaller firms.

The trends of differentiation find their ultimate resolution in oligopoly and internal market stabilization. The milling industry continues to move in this direction. The growth of the Minneapolis-national, the Southwestern, and a few Coast enterprises, sharply raised the concentration ratios for the industry. Five large concerns were milling about 23 per cent of the total output of flour in 1921; by 1935 the three largest companies milled 29 per cent of the total production, of which General Mills had more than half.<sup>101</sup> Four years later, the three largest accounted for 38 per cent, and General Mills for 23 per cent, of the total dollar volume of flour sales in the United States.

Since in the fiscal year 1934-35 these three concerns purchased 38.4 per cent of the total commercial wheat crop of the country,<sup>102</sup> on the assumption of approximately constant inventories of grain, and allowing for the use of wheat for cereal and related uses, it is indicated that they were perhaps supplying grain to other millers. Nicholls asserts that this is very likely in the case of General Mills, which purchased 23.3 per cent of the U. S. total in 1935, although its wheat flour sales amounted to but 15.7 per cent of the total.<sup>103</sup>

<sup>98</sup> *Competition and Profits in Bread and Flour*, op. cit., particularly the supplemental report, *Conditions in the Flour Milling Business*, Senate Doc. No. 96, 72nd Cong., 1st Sess., Washington, 1932, pp. 2-3.

<sup>99</sup> FTC, *Agricultural Income Inquiry*, op. cit., p. 818.

<sup>100</sup> U.S., Temporary National Economic Committee, *Relative Efficiency of Large, Medium-Sized and Small Business*, Monograph No. 13, Washington, 1941, p. 61.

<sup>101</sup> TNEC Monograph No. 35, op. cit., pp. 39, 90.

<sup>102</sup> FTC, *Agricultural Income Inquiry*, op. cit., p. 6.

<sup>103</sup> Nicholls, W. H., *Imperfect Competition within Agricultural Industries*, Ames, Iowa: Iowa State College Press, 1941, p. 76.

Twenty-eight firms controlled 40 per cent of the total milling capacity by 1940, and approximately 54 per cent in 1953.<sup>104</sup> In view of the higher activity ratios of the largest concerns, these firms must have produced considerably more than 54 per cent of the total production in that year. This is not a high degree of concentration, compared to a number of other industries, but what is important in the present context is the trend.

It might be said that after the consolidation of the last 25 years, the competitive differentiation between large and small firms had deepened to the point at which members of the small-enterprise segment could only in very exceptional and isolated cases bridge the gap between membership in that segment and membership in the corps of leaders. With regard to the future prospects of the small-firm sector, it has been suggested above that the industry leaders will continue to follow policies which reduce the competitive potential in this sector until the power of market stabilization is effectively in the hands of the leaders. In other words, the "reduction process" involving elimination of small and medium producers, and mitigation of their power to disrupt the market, can be expected to persist so long as they are an effective threat to market stabilization.

It is doubtful if structure of the flour industry is yet such that the small-firm segment is sufficiently small in numbers or in share of the total volume of business to avoid further engrossment. This appraisal of prospects is based upon a number of factors, but particularly upon the growth of concentration in the 1940's, the size-distribution of firms at the end of that decade, and certain price results which have occurred since the decline in wartime demand.

It is true that concentration of production in the 1940's proceeded at a remarkable rate. On this score comparison may be made with the capacity of the largest 28 firms referred to just above as holding, according to the Bureau of Labor Statistics, approximately 40 per cent of total industry capacity in 1940. The *Northwestern Miller* shows the capacity of the 28 largest concerns in early 1949 to have been approximately 698,000 sacks daily.<sup>105</sup> In the same journal, issue of December 13, 1949, Mr. Herman Steen, vice-president and secretary of the Millers' National Federation, estimated total commercial daily capacity for the industry liberally at approximately 925,000 sacks.<sup>106</sup> Therefore the largest 28 firms had expanded their capacity from 40 per cent of the industry total to about 75 per cent at the end of the decade. This is certainly notable. However, it must be recognized that the leading core of 38 firms, each with a capacity of 5,000 or more sacks daily, is rather too numerous to be thought of as a representative case of fewness, and its business policies as a group do not seem to have achieved a high degree of cohesion, i.e., we

<sup>104</sup> U.S., BLS, *Earnings in the Grain-Mill Products Industries*, op. cit., p. 12, for the 1940 estimate. The figure for 1953 is calculated from the *Northwestern Miller*, Almanack Number, April 28, 1953, pp. 23, 28.

<sup>105</sup> *Northwestern Miller*, April 26, 1949, Section Two, p. 17.

<sup>106</sup> *Ibid.*, p. 12.

do not have a "hardened" oligopoly core. Furthermore, the numerous small and medium firms occupying approximately a 25 per cent position capacity-wise in the market still represent an important sector; at least of the domestic market.

It might be reasoned that the small-firm segment could now be realistically expected to adopt a cooperative attitude regarding output controls, rates of utilization of capacity, and price policy, such as, for example, a standard differential between prices charged by the leaders and those quoted by the lesser millers. This has been done frequently in other industries. It is not to be denied that such arrangement is now possible in the flour industry. However, it must also be recognized that where the small- and medium-firm segment remains rather substantial, as it does in this case, the possibilities for achieving such a pattern of controls and of price differentials are distinctly less than they would be if the oligopoly core were less numerous, production more concentrated, and the small-firm segment reduced to, say, a 10 per cent position in the market. Furthermore, in this industry, the millfeed market, which is quite separate on the demand side from the flour market, can always become a price-cutting area to stimulate increased flour output and thus bring additional downward pressures to bear on the price structure for flour. The postwar price-break in millfeed in 1948, for example, soon brought with it what the industry considered "disastrous price competition" in flour.<sup>107</sup> These pricing results held in spite of considerable progress made since the war in bringing capacity and utilization ratios down to the point at which they are more in line with total demand.<sup>108</sup>

In the view of this writer, it would seem that on balance the numerous medium and small firms are still probably a factor inimical to the policies of collective control over price and output to which the leading millers dedicated themselves as early as the 1920's. If this be correct, some further reduction in the size and numbers of the small-firm segment may be anticipated in the 1950's.

Flour milling appears to provide a "classic" illustration for those who argue that mature capitalism involves the numerical demise of small enterprise. Whatever may be said by the contrary-minded, who have on their side the weight of evidence insofar as the retailing and service trades are concerned, this industry is preeminently illustrative of numerical elimination in the fabrication segment of the economy.

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<sup>107</sup> *Northwestern Miller*, April 26, 1949, Section Two, p. 3.

<sup>108</sup> *Ibid.*, p. 4; and *Northwestern Miller*, December 13, 1949, p. 12.

## IV

### NEW ENTRY AND SMALL ENTERPRISE: THE AUTOMOBILE<sup>1</sup>

#### 1. INTRODUCTION

The formal theorizing of economists in the field of Industrial Organization, whether they operate with the concept of pure competition, monopolistic competition, or oligopoly, has proceeded for the most part on the explicit or implicit assumption of free ingress. The existence of barriers to ingress in the oligopolistic industrial reality of our day has unfortunately failed so far to produce appropriate theoretical recognition, and in consequence we are almost completely without the analytical tools required to integrate the phenomenon of business entry with the more developed ideas pertaining to industrial structure and to certain aspects of business policy. This is all the more noteworthy in view of the great influence in the orthodox theories of business enterprise of the Marshallian tradition which, on its own peculiar concept of quasi-biological evolution, was under special constraint to treat the conditions determining the turnover of firms. Yet, it is almost as appropriate to say today what Joan Robinson wrote nearly 20 years ago—"the problem of the conditions influencing the entry of new firms, in response to a rise in demand, or the disappearance of old firms, in response to a fall in demand, presents an interesting and largely unexplored field of inquiry."<sup>2</sup> The essential character of competition may be said to be focussed in the new entry situation obtaining in any given period of economic history, and of the history of particular markets.

The passenger car segment of the automobile industry is a fruitful area for the study of the problem of business entry. It represents in many ways a whole group of industries in which new entry has become progressively more difficult, just as on the other hand the shoe industry, for example, represents the opposite widespread phenomenon of relatively free entry with its associated continuous turnover of a high proportion of the total firms. The automobile industry is also representative in that, like many others, it has evolved from a multi-firm structure in its early days to oligopoly in its later phase of development. Furthermore, its "product" falls into that broad class of differentiated consumer (primarily) durables which was so influential in changing the makeup of civilian manufacturing output since the turn of the century.

Many hundreds of firms at one time or another have engaged in the commercial production of passenger cars, that is, actually placed cars on the market. As late as 1921, there were almost 100 firms turning out cars on a

<sup>1</sup> A somewhat more complete discussion may be found in the writer's "Closure of Entry in the American Automobile Industry," *Oxford Economic Papers* (New Series), Vol. IV, No. 3 (Oct., 1952), pp. 213-234.

<sup>2</sup> *The Economics of Imperfect Competition*, London: MacMillan, 1946, p. 92 Fn 1.

commercial basis. But more important for the *general* problem of small enterprise than mere numbers of firms are the implications of the closure of new entry in the industry in the 1920's.

The ensuing discussion in this chapter will attempt to develop the hypothesis that: (1) the problem of closed entry in the automobile industry was associated with the transformation of the market from a multi-firm structure into an oligopolistic structure; (2) in its early stages the industry exhibited a pattern of high enterprise-turnover in response to high profitability, as portrayed in conventional theorizing about free markets; (3) the industry subsequently developed a number of characteristics which were incompatible with the continuation of such a pattern; (4) when there was new entry or attempted entry in the industry, it assumed the form mainly of price-class extensions or commodity extensions from within, which phenomena, however, do not conform to traditional concepts of new ingress as emanating from outside and independent sources; and (5) entry of the Kaiser enterprise was a very special case based upon a reconstitution of certain conditions which had contributed to ingress in the earlier history of the automobile market.

From the standpoint of the entry problem, the evolution of the passenger car market may be divided into an era of phenomenal growth ending in the middle 1920's, followed by a period of maturity and structural hardening with its terminal point the beginning of World War II, succeeded in turn by the special war, conversion, and preparedness period from 1941 to the present.

## 2. ENTRY IN THE PERIOD OF RAPID GROWTH

We are fairly well supplied with the facts of enterprise turnover in the earliest of these three periods through the careful works of R. C. Epstein (*The Automobile Industry*) and L. H. Seltzer (*A Financial History of the American Automobile Industry*), both published in 1928. We know that in the first two decades of the century scores of new concerns entered the market, many of them engaged ordinarily in one or another branch of the engineering and related industries in Michigan, Ohio, Indiana, and the New England States. Entrants well exceed exits (on the average) for the whole period so that there was an increase in the net number of firms engaged in the commercial production of cars i.e., selling cars to consumers in the national, or at least a regional market (ignoring price-class or length of time in the market).

There were many more enterprises reaching the preparatory stages of production than there were enterprises actually marketing finished cars. In the discussion of entry below, the former are generally excluded. They belong in the category of what we shall term "stillborn entry." The prevalence of this phenomenon in the early period suggests that for industries manufacturing complex products new ingress may be a much more difficult and costly process than it is assumed to be in the conventional theory of perfect

competition, perhaps even in the theory of workable competition. It is estimated by Seltzer that nearly 1,000 separate enterprises were organized to engage in automobile production up to 1927.<sup>3</sup>

New entry in the early period was greatly facilitated by the basic condition of rapid and substantial growth in total market demand. New firms could grow without diverting sales from other producers. It was not a question of sharing in or disrupting a given pattern of total demand; or even of creating demand for particular makes through product differentiation, although this factor became increasingly important after the rise to dominance of Ford.

The multi-firm structure of the market, together with the comparatively low concentration of control over production (the small-firm segment of the market still accounted for an important proportion of the total volume of business) and the small size of investment in passenger-car assembly proper—all contributed further to the ability of a moderately-sized new entrant to compete on more or less equal terms with established concerns by absorbing a small percentage of the total market.

The new entry process was also made easier by virtue of the relatively simple design, engineering and assembly requirements of the product. Although the complexity of the product already offered some impediment, contributing, in part, to the proliferation of stillborn entry, its adverse influence was mitigated by at least two considerations: (1) the fabrication of cars was largely an assembly job, and (2) such assembly function was still possible as a sideline activity of varying importance to established machinery, cycle, wagon, carriage, metal-working and other manufacturers. Passenger car production involved what A. R. Oxenfeldt calls "commodity-extensions" on the part of these established concerns.<sup>4</sup> The latter were on the "inside" during the strategic founding years of the new industry. Hence, in many outstanding cases, new entry did not mean that outside capital in freshly-organized enterprises was penetrating an established market, but rather that a new market was in process of creation as an offspring of existing industries and firms which were simply diversifying their product-mix. In this case it happened that the offspring swallowed up the parents.

The method of assembly, rather than complete integrated fabrication, facilitated entry by making it possible to use small plants and largely hand methods, drawing upon supplies of already quite standardized interchangeable parts from other established industries. The 1905 Census declared that "while some of the larger plants turn out all the parts, the smaller establishments, and by far the greater number, do not, but purchase more or less material in

<sup>3</sup> *Op. cit.*, p. 64.

<sup>4</sup> *New Firms and Free Enterprise*, Washington: American Council on Public Affairs, 1943, pp. 48, 95.

fully or partially manufactured form. In fact, there is a strong tendency in this direction . . ."<sup>5</sup>

On the financial side, several conditions prevailed which aided the beginner. Much of the long-term risk capital and working capital was readily available from the related founding and contributory industries just mentioned. Short-term credit was also at hand from suppliers of raw materials and parts on the one hand, and the distributing trade on the other. The motor vehicle manufacturer purchased materials from the multitude of partsmakers on credit, usually about 30 to 90 days. Hence, in addition to shifting much of the technical burdens upon this group, the latter also assumed a substantial portion of the risk of an assembler whose working capital requirements were at this stage relatively high. The arrangement was supplemented on the marketing side by a system of cash deposits with each order from dealers, the balance becoming due upon delivery of the car. The latter was shipped to the dealer after an assembling process frequently shorter than 90 days, with a sight draft attached to the bill of lading. This put the industry on a cash basis from the selling side, while its purchases were on a credit basis. The demand for automobiles was such that dealers contracted to accept shipment from assemblers immediately upon production, regardless of current retail sales in a particular locality, in accordance with a prearranged schedule.<sup>6</sup>

In addition to these readily accessible sources of funds, the new firm, once it had succeeded in putting cars on the market on a commercial basis, stood a good chance of making substantial returns which would provide internal funds for expansion. Returns in the first decade of the century were in many cases little short of fabulous; and even in the second decade average returns on net worth were estimated by Epstein to be several times the going rate of interest.<sup>7</sup> High profitability acted as a stimulus to both new ingress and rapid self-expansion when the newcomer got to the stage of commercial production.

Nor was the potential passenger-car producer impeded by the presence of any apparently deliberate efforts on the part of established makers to keep him out. An attempt was made during the first decade of the century to control the number of firms and their policies through the restrictive use of engine patents, but this effort was nullified by 1911 under the leadership of Ford, after a long period of litigation over the Selden patent.

The high enterprise turnover rates prevailing during the earlier stages of the industry's development emanated mainly from the conditions thus

<sup>5</sup> Quoted in Fabricant, S., *Output of Manufacturing Industries, 1899-1937*, New York: National Bureau of Economic Research, 1940, pp. 306-307.

<sup>6</sup> See Seltzer, op. cit., pp. 22-23, 53; Hamilton, W. H., *The Pattern of Competition*, New York: Columbia University Press, 1940, p. 30; U. S., Federal Trade Commission, *Report on Motor Vehicle Industry*, 76th Cong., 1st Sess. House Doc. No. 468, Washington: Government Printing Office, June 5, 1939, p. 108.

<sup>7</sup> Op. cit., p. 265.

outlined, conditions which provide an interesting and essential background for the contrasting circumstances that emerged in the interwar years.

### 3. MATURATION, OLIGOPOLY, AND CLOSURE OF ENTRY

The "new era" of the 1920's brought with it the same leveling off of growth in the automobile industry that is found in the life-cycle of many other industries. This may be considered a decisive factor in shaping the changed entry conditions that marked the second, or interwar period, of the industry's development.

The peak-year output in the history of the industry during this era was 1929, when factory sales were approximately 4.6 million passenger units, a figure substantially above the 3.9 million ceiling which obtained from 1930 to 1948. The peak year for private unit export sales was also 1929, and has never since been approached.<sup>8</sup> Saturation of the market within the framework of (1) the civilian economy, (2) the contemporary structure of income flows, and (3) the existence of a "normal" used car market, is suggested by the ratio of population to passenger car registrations:<sup>9</sup>

January 1, 1920 .....	13.0 persons per car
" " 1929 .....	5.2 " " "
" " 1935 .....	5.6 " " "
" " 1938 .....	5.1 " " "

Chronic extra-cyclical excess capacity had emerged clearly by the middle twenties, for in 1926, a Kitchen cycle peak during the "new era," some 4.3 million cars and trucks were turned out with a physical plant capable of assembling approximately 7.3 million units.<sup>10</sup>

By a rather striking historical coincidence, the year 1923 witnessed the transformation of the automobile market into a primarily replacement (saturated) market, the ascension of the industry to the position of first place in American manufacturing, and the founding of the last member of the so-called "big three" leading firms: the Chrysler Corporation. Just two years earlier saw the peak number of firms for the industry.

These strategic years of the early 1920's witnessed the reversal of the entry-exit ratio, inaugurating an extended period of decline in the number of concerns. By 1926 there were one-half as many producers as had existed five years earlier. The failure rate (ratio of firms failing to total active firms) was in automobiles many times higher than that for all manufacturing, trading, and commerce.

The later 1920's brought about the overwhelming domination of the field

<sup>8</sup> *Automotive Industries*, March 15, 1948, p. 94, March 15, 1947, p. 81; and Automobile Manufacturers' Association, *Automobile Facts and Figures*, 1940, pp. 30-31.

<sup>9</sup> *Automotive Industries*, July 23, 1938, p. 108. The ratio had fallen to approximately four by 1950. Like other conditions related to the industry in the postwar, semiconversion, semipreparedness economy of 1945-50, however, this low figure appeared out of line with long-run civilian trends as shown in the interwar years, 1920-40. About 64 per cent of all cars were over eight years old in 1949; only 24 per cent were over eight years old in pre-war 1941. Passenger cars scrapped jumped from 963,444 in 1948 to 2,300,000 in 1949. (cf. *Automobile Facts*, Feb., 1951, pp. 4-5.)

<sup>10</sup> Seltzer, op. cit., p. 59; and *Automotive Industries*, Mar. 15, 1947, p. 81.



by the cars in the low-price class (at that time under \$1,000). This development, together with the emergence of the big three, which as a group held by that time a virtual monopoly in this price-class, meant that any serious competitive challenge by a new firm or a new make could come only from a car in this price-class. Such a challenge would constitute what we shall term "effective new entry," which, more specifically, would require fulfillment of the following conditions:

- (a) Entrance of new firms, and/or introduction of new makes (of conventional body style and with wheelbase over 100 inches), which secure more than a negligible share of the low price, high-volume market;
- (b) Substantial inroads into the 90 per cent position enjoyed by the big three as a group after 1933, by penetration of the low-priced field.
- (c) Significant life-span of the new firm and/or make.

It is with effective entry, so defined, that the following analysis will be primarily concerned. In so defining new entry we do not overlook, but merely refrain from treating here, the matter of product innovations inaugurated by the leaders.

The cessation of effective entry, from the standpoint of new enterprise, occurred with the founding in 1923 of the Chrysler Corporation. The cessation of effective entry, from the standpoint of make of car, occurred with the birth of the Plymouth in 1928. Some authorities have refused to go this far, looking upon the Plymouth as the direct descendant of the much older Maxwell car.<sup>11</sup> In any case, after Plymouth had cut into the low-price field, no new make, coming from an existing or new firm, was able to offer a serious challenge to the control of this field by the big three.

Numerous attempts were made, however, to break into the low-price market during the two decades following.

Only three new domestically manufactured makes were introduced to the American market on a commercially productive basis in the years immediately preceding the great depression: the Falcon-Knight, the Ruxton and the Cord. All three cars were produced by older enterprises or by enterprises growing out of older concerns. Only the Falcon-Knight had aspirations of entering the low-price field, its four-door sedan being priced in the medium group at \$1,095 f.o.b. in 1927. Despite its moderate cost, the long experience of the Falcon Motors Corporation, and the intimate association of John Willys with the venture, the car was out of the market only two years later.

Observation of the entry-exit trend of the depression decade is facilitated by reference to the accompanying Table. The production records of "inde-

<sup>11</sup> Cf., e.g., *Automotive Industries*, June 1, 1946, p. 18.

TABLE 2. NEW PASSENGER CAR REGISTRATIONS OF INDEPENDENT PRODUCERS, BY MAKES, 1931-1941

Make of car	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941
Auburn .....	29,536	11,646	5,038	5,536	5,163	1,848	146	.....	.....	.....	.....
Bantam (Austin) .....	2,941	.....	3,675	1,057	.....	.....	.....	700	1,227	800	138
Continental .....	.....	.....	3,310	953	.....	.....	.....	.....	.....	.....	.....
Cord .....	1,416	335	.....	.....	.....	1,174	1,149	.....	.....	.....	.....
De Vaux .....	4,808	1,358	.....	.....	.....	.....	.....	.....	.....	.....	.....
Durant .....	7,229	1,135	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin .....	3,881	1,829	1,329	360	.....	.....	.....	.....	.....	.....	.....
Graham .....	19,209	12,858	10,128	12,887	15,965	16,439	13,984	4,139	3,660	1,856	544
Hudson .....	19,189	8,641	2,956	19,307	21,587	20,825	90,043	40,889	62,855	79,979	73,261
Hupmobile .....	17,427	10,794	6,726	6,566	7,450	1,556	403	1,020	907	211	103
La Fayette .....	.....	.....	.....	9,301	17,445	.....	.....	.....	.....	.....	.....
Marmon .....	5,687	1,365	86	.....	.....	.....	.....	.....	.....	.....	.....
Nash* .....	39,366	20,233	11,353	14,315	17,739	43,070	70,571	31,814	54,050	52,853	77,824
Packard .....	16,256	11,058	9,081	6,552	37,653	68,772	95,455	49,163	62,005	73,794	69,653
Pierce-Arrow .....	4,522	2,692	2,152	1,740	875	787	167	17	.....	.....	.....
Reo .....	6,762	3,870	3,623	3,854	3,894	3,146	.....	.....	.....	.....	.....
Rockne .....	2	16,966	14,554	.....	.....	.....	.....	.....	.....	.....	.....
Studebaker .....	46,533	25,002	21,688	41,560	39,573	67,835	70,048	41,504	84,660	102,281	114,331
Terraplane (Essex) .....	42,545	28,778	35,831	40,510	53,838	78,471	†	†	†	†	.....
Willys and Whippet .....	42,936	22,483	15,314	6,576	10,439	12,423	51,411	13,012	14,734	21,418	22,102
Willys-Knight .....	8,405	3,415	353	.....	.....	.....	.....	.....	.....	.....	.....
Miscellaneous .....	3,548	3,732	1,159	324	1,858	5,294	1,441	799	1,789	4,454	3,082
Total .....	322,198	188,190	148,346	171,398	233,479	321,640	394,818	183,057	285,887	337,646	361,038

Source: Automotive and Aviation Industries, March 15, 1946, p. 88.

\* Included with Hudson.

† Figure for 1936 includes La Fayette for 10 months.

pendent" concerns, as indicated by new registration of makes, readily, submit to classification into three main groups:

- (1) Firms and makes exiting.
- (2) Firms and makes enduring.
- (3) Firms and makes representing attempts to enter or re-enter the market.

The first group includes, in addition to those mentioned above, the DeVaux, Durant, Franklin, Marmon, Pierce-Arrow, Hupmobile, Graham, Essex, Terraplane, Willy's Whippet (dropped in 1930), Willys-Knight, and, in the miscellaneous category, Stutz and Dusenbergl. The second group encompasses Hudson, Nash, Packard, Studebaker, and Willys. The last group includes the DeVaux, Rockne, Continental, LaFayette, Terraplane, and possibly the Willys.

Although discussion of the factors behind the exits is intimately related to the problem under consideration, and to the capacity of certain others to endure, it will be impossible to treat these matters here. With regard to group three, the outstanding unsuccessful attempts were staged by Nash (the LaFayette) and Hudson (the Terraplane).

These two major entry efforts in this period were price-class extensions by existing firms (smaller independents). Differentiation in costs and competitive power between firms, largely due to size differences, can easily explain the inability of these independents to penetrate the high-volume price class.

#### 4. THEORETICAL ASPECTS OF THE ENTRY PROBLEM

If, for a moment, we view the industry according to our customary approach as having two distinct (though interrelated) segments—the three leaders, and the independents—we can describe developments in the independent segment and then analyse the ways in which it is competitively differentiated from the core of leaders. This should throw some light on the entry problem.

In the strategic years of the 1930's, the segment of smaller passenger car producers experienced a decline in its relative share of total sales. By 1933 the independents held about a 10 per cent position, which status persisted thereafter up to conversion for war. Over the same period, the relative share of the five enduring independents in the total sales of all independents rose from 76 per cent to 99 per cent between 1933 and 1941. In other words, the depression strengthened the enduring independents at the expense of other smaller manufacturers, although it weakened them with respect to the leaders (as a group the independents accounted for about 25 per cent of total sales in 1929). Stated in still different terms, stabilization of the competitive position of the leaders was associated with intensified competition for the remainder of the market among the independents.

No enduring new firms or makes entered the class of independents (or of leaders) in this period. No enduring new makes produced by independents

entered the strategic price class controlled by the leaders.

Also especially noteworthy is the fact that the *gap* in size of firm between leaders and independents has remained persistently enormous. Such a gap is present in numerous other industries; for example, cigarettes and tin cans, and was found in the butter industry (chapter two). It is especially striking in the case of automobiles. Despite the remarkable achievement of the Kaiser-Frazer Corporation in the postwar years, it failed to even approach closure of the firm-size gap.

What changes, in the structure and functioning of the automobile industry, had occurred in the interwar years which might explain the incapacity of new firms, or established firms, to place makes on the market which would seriously cut into the low-price class for an enduring period? Why did the persistence of relatively high profitability fail to fulfill its traditional function of attracting new outside resources into the market?

One certain factor of importance was the appearance of a plateau in the long-run trend of total demand for new cars. As pointed out above, such a plateau emerged in the mid-1920's. Then new car demand became, within the framework of the given "normal," peacetime pattern of income flow, used-car supply, and average age of cars registered, mainly a function of (1) replacement requirements of a segment of existing car users and (2) population growth. These changes meant that a new firm or make would have to wrest sales from established brands, a generally more difficult task than partially filling a sales vacuum created by a large, unsatisfied demand on the part of first-time car owners.

A second factor was the great growth in both plant- and firm-size. Despite the fact that automobile production remained substantially an assembly operation, the fixed investment alone became enormous. Where resulting overhead costs are very large, as J. M. Clark has pointed out,<sup>12</sup> risk in the initial investment is an obstacle to free entry of new competitors, limiting their possible number and increasing the risk that must be taken. The influence of this factor in itself may not be decisive, however, in the absence of a high concentration of production. But in the case of the low-price class of cars in the automobile industry, risk is peculiarly an increasing function of scale of production. This relationship inheres in the fact that, with relatively constant total demand, a significant share of the market gained by a newcomer might well be associated with losses for both itself and established concerns.<sup>13</sup> It is primarily this condition which perpetuates the "gap" between the leaders and the independents and makes effective new entry so unlikely.

The problem of bridging the production (and sales) gap between the independents and the big three in the low-price category may be considered the decisive factor in the failure of the LaFayette and Terraplane to break

<sup>12</sup> *Studies in the Economics of Overhead Costs*, op. cit., p. 146.

<sup>13</sup> Cf. in this connection, Kaldor, N., "Market Imperfection and Excess Capacity," *Economica*, vol. II, No. 5 (1935), pp. 42-43.

into this sector of the market. Even though sales were rising, it was apparently necessary to reach a sales volume in the several hundred thousands in order to bring unit costs down to that level at which a return was possible from the low-price passenger car. Neither the LaFayette nor the Terraplane approached this break-even point at production rates below the 100,000 figure. E. A. G. Robinson has generalized such situations in his conclusion that "where the gap between the minor and major optima is a wide one, growth to the major optimum by expansion from the minor optimum will be impossible."<sup>14</sup>

The potential entrant may be repelled by the prospect of losses due to failure to achieve sufficient volume to cover costs at going prices. He may also be aware that recognition by established sellers of such hazards increases the possibility that the latter might for a time relinquish a policy of price stability in favor of sharp price reductions aimed directly at the newcomer.<sup>15</sup> This consideration again tends to increase both risk and initial minimum investment.

The possibility of mobilizing such vast sums must be appraised in the context of the special characteristics of the contemporary private capital market. Although the supply of savings is ample, the market is oligopolistically organized, and its members are highly sensitive to the policies of the leading houses, many of whom are financially involved with established concerns in the automobile and related industries. Moreover, the investment psychology of the financial community is undoubtedly a great deal more "security conscious" and much less "opportunity conscious" than it was 50 years ago. In the absence of adequate supplies of funds from suppliers and dealers during the interwar years of automobile history, it is not difficult, therefore, to understand why government loans might become the only feasible source of large scale, long-term financing. Such a conclusion is certainly consistent with the important role of government funds in the case of the Kaiser enterprise.

Related to the growth of firm-size and improvement of the product is the increasing technical complexity of supplies procurement and assembly methods. These developments have also added to the difficulties confronting the potential innovator. It is true that they probably operate with greater force in the case of the new firm than in the case of the new make marketed by a smaller established fabricator. Nevertheless, the intricate technical problems of plant design, continuous production, and related engineering research, generally militate against easy entry, just as on the other hand, simplicity of fabrication and product facilitate ingress in, for example, many of the food processing industries. In the case of the automobile industry, the emphasis upon style variation that accompanied the spread of the product

<sup>14</sup> *The Structure of Competitive Industry*, London: Nisbet and Company, Cambridge University Press, 1931, p. 24.

<sup>15</sup> Cf. Bain, J. S., *Economics of the Pacific Coast Petroleum Industry*, Berkeley: University of California Press, Part II, 1945, p. 193.

differentiation movement as the industry came of age has also tended to increase the complexity of product-design problems in general and "change-over" costs in particular.

Product differentiation through sales promotion is itself an additional factor tending to erect barriers to entry under such conditions as have been present in the automobile market since the 1920's. In general, the larger the sums devoted to sales promotion by established firms in a given commodity price bracket, the greater will be the expense of creating a niche in the market for a new make in that bracket. The importance of this relationship is especially great in the low-price, high-volume cars, where the promotional effort has been extraordinary. Superior productive efficiency on the part of a newcomer, even if attainable, might be unrealizable in sales unless the hurdle of demand creation is overcome.

As the automobile industry achieved its full growth, the effectiveness of sales promotion, of course, became integrally connected with the ownership or control of a network of marketing and servicing facilities. Both factors tended to reinforce each other in their aspects as barriers to ingress. The peculiar cogency of the marketing network in this connection is enhanced by exclusive dealer arrangements: entry requires building a vast new structure of wholesale and retail outlets.

A final factor that may be cited for its impact upon the entry problem is the differential advantage enjoyed by the leaders in the auto industry by virtue of their plant and product diversification in the form of a family of cars in several price classes (no reference is made here to product diversification extending into entirely different markets). It seems reasonable to assume that a potential entrant would, like the established independents, be limited at the outset at least to a relatively narrow range of car-types and price-classes. In such case, the entrant would lack the advantages of the leaders stemming from the tendency of sales promotion for one car to stimulate consumer preference for other lines manufactured by the same concern. Diversity of price-lines and car-types also makes feasible a broader territorial coverage. One reason which has been advanced for the elimination of many non-diversified "short-line" companies in the farm implement industry is the difficulties of the smaller manufacturers in obtaining broad territorial distribution of their products.

In addition to the marketing advantages of a family of cars, there are also to be considered the cost-savings in the sphere of procurement, fabrication, and assembly, due to volume purchasing and production of supplies or parts which are interchangeable between makes or usable in their raw conditions as materials for all makes and models. This element is more significant the more established firms become diversified with respect to penetration into other industries.

Among the few writers who have dealt specifically with the entry ques-

tion, it seems generally agreed that a number of the "natural" economic barriers to new enterprise outlined above are of rather widespread significance. The automobile entry experience furnishes empirical foundation for some of the hypotheses of these other writers on new business entry. It also suggests the existence of certain factors neglected by most; notably, the rate of market growth, technical complexity of processes and products, conditions effecting the supply of capital, and the degree of plant, product and industry diversification of the leading established concerns.

The review of entry conditions in this industry also suggests that the development of concentrated, diversified oligopolistic industries in recent decades may have ushered in a change in the character of business entry in American manufacturing. It suggests that new entry in new industries may consist largely of commodity-extensions of large firms in other established industries; and that successful, i.e., *effective* new entry in established industries may take the form, in the main, of commodity-extensions and price-class extensions by established firms—usually by the leaders of the latter group.<sup>16</sup>

##### 5. SPECIAL CONDITIONS OF ENTRY AFTER WORLD WAR II

Discussion of the reason for closure of entry in the automobile market might well be terminated at this point, principally on the basis of the long-run trends exhibited between 1900 and 1940. However, a question may arise as to whether developments in the 1940's, particularly the emergence of Kaiser-Frazer, does not nullify much that already has been said. Specifically, does the appearance of this new auto manufacturer refute the thesis that the last effective new entrant was the Chrysler Corporation? If Kaiser-Frazer were taken as a case of *effective* new entry (which is not the case), to what extent would it be necessary to qualify the general analysis and industrial significance of closed entry conditions in the preceding discussion? In order to advance some tentative answers to these questions, developments in the 1940's (latest phase in the industry's evolution) should be reviewed briefly.

Little need be said regarding entry during the war period itself. The performance of the industry from 1946 to 1950 is, for the purpose at hand, notable for (1) a rapid growth in output to a peak absolutely higher than any previous total (6.6 million passenger units in 1950); (2) the gradual return of a used-car market; (3) an apparently temporary improvement in the position of the independents as a group, followed by a return to their traditional 10 per cent position in 1953 (15 per cent of the total physical output in 1949); (4) the return of the leaders to roughly the same relative market position with respect to each other which they occupied in the last half of the 1930's;<sup>17</sup> and (5) the entry of one important new producer—the Kaiser-

<sup>16</sup> Cf., e.g., Walter F. Crowder, Adolph G. Abramson, and Esther W. Staudt, "The Product Structures of Large Corporations", in U.S., Temporary National Economic Committee, *The Structure of Industry*, Monograph No. 27, Washington: Government Printing Office, 1941, pp. 668-670. Also, A. R. Burns, *The Decline of Competition*, New York: McGraw-Hill, 1936, p. 420.

<sup>17</sup> Shares in 1953 were approximately 48 per cent for General Motors, 23 per cent for Ford, and 22 per cent for Chrysler. (New York Times, Oct. 4, 1953).

Frazer enterprise. We shall confine our discussion mainly to the entry of Kaiser-Frazer.

The newcomer attained a 5 per cent position in the industry by 1948, suffered a drastic decline to 1.5 per cent in 1949, rose moderately in relative standing again in 1950 on the basis of a large absolute increase in sales for the industry during that boom year, and was all but out of the passenger car business by 1955. Despite this rather erratic record, it is generally acknowledged in the trade that the enterprise scored a remarkable achievement. The pertinent question, however, is whether the entry of this firm fundamentally qualifies the general analysis of entry presented above. Aside from the failure of the newcomer to fulfill our requirement of enduring life-span, it can hardly be said that in other regards the entrance of Kaiser-Frazer demonstrates the existence of anything approaching free ingress. Neither does the general significance of the automobile entry experience for industry (as a whole) appear to be basically qualified by this case.

The entrance of Kaiser-Frazer seems in the main to be the product of two circumstances which may in historical perspective still be described as atypical; (1) certain special postwar economic conditions having a peculiar import for this particular industry, and (2) the intervention of the government on behalf of the newcomer.

The automobile market, under the special conditions obtaining after World War II, reproduced temporarily some of the circumstances that were characteristic of the period prior to maturity. The going concerns realized higher rates of return than the average for all manufacturing, but this, of course, has been generally typical of most periods in the history of the automobile. More important, some of the elements that brought 22 firms into the industry at the end of World War I were again to be found in this period. Two such elements of considerable significance were the rising price trend and the existence of a total demand greatly in excess of supply. In addition, certain other factors generated out of wartime expansion in the economy tended to re-create a favorable environment for new ingress, and hence call for comment.

The disequilibrium of demand and supply reversed the conditions which obtained in the market from the late 1920's to World War II. This was undoubtedly basic to the entry of Kaiser. Furthermore, we may consider four specific additional elements in the situation conducive to the appearance of a concern such as Kaiser:

- (1) A short supply of competing new cars.
- (2) A backlog of unappeased wartime and "reconversion" demand, not only for cars in the price-class of this particular entrant, but also in the price-classes above and below that. Consumers were consequently pressed into the price-class of the entering firm (which was in the



case of the Kaiser car above the low-price category), whereas ordinarily the market is much more rigidly segmentalized.

- (3) The absence of a "normal" used car market, and the unusually high average age of vehicles in use. These factors impelled a similar breakdown of market stratification. Buyers who would tend to fall into the medium- and high-priced used car market were forced into the market for medium-priced new cars since the latter were in many cases the only type available.

(The lack of an adequate supply of used cars was undoubtedly also extremely favorable to the creation of a market for foreign small cars, "bantam" cars, and the Willys Jeepsters and station wagons. Willys may be considered an enterprise exit so far as the conventional full-sized car market is concerned.)

- (4) The availability of a variety of relatively inexpensive, wartime industrial plant and equipment surplus, in peacetime, that was quite usable for car manufacture. Almost \$1,900,000,000 in production facilities usable in peacetime was added to the existing plant and equipment of the eleven automobile manufacturers between 1940 and 1945, an increase of approximately 123 per cent over the value of their gross physical capital assets in 1939.

Through the exploitation of these favorable short-run factors, the Kaiser-Frazer firm performed a remarkable feat of engineering and enterprise. Kaiser exploited the situation fully, aided by highly favorable leases from the RFC from 1946 to 1948. He also acquired former aircraft facilities in California for West Coast operations. In addition to government aid through the Willow Run leases, and through lease from the War Assets Administration of their very large blast furnace and coke oven plants at Cleveland, he also received invaluable financial assistance (notably a \$44,000,000 loan in 1929) from the RFC directly, after the private capital market had declined to finance him.<sup>18</sup>

Entrance of Kaiser-Frazer into the industry attests that no industrial structure can remain indefinitely rigid. Even taking such entry into account, however, the industry fails to exhibit the perpetual influx of new enterprise which in conventional economic thinking has been assumed to be characteristic of free markets. Only the ebb of older concerns has remained to justify the appropriateness of the traditional concepts in this case.

Evolution in the automobile industry therefore suggests the hypothesis that entry conditions in certain types of oligopolies may not be assimilable into our theories of free markets. There would seem to be a much higher degree of immobility of resources, at least as to the in-movement of resources, than is customarily assumed. Furthermore, the emergence of such immobility

<sup>18</sup> Attention should be called to the announcement in 1953, consummated in 1954, of the merger between Kaiser and Willys (*Business Week*, March 28, 1953).

appears entirely possible in the absence of any significant "collusive," deliberate, or "artificial" barriers to entry: the barriers are immanent in the very structure and *modus operandi* of markets characterized by fewness, together with heavy fixed investment, plateaus in the secular trend of demand, technical complexity of the product, plant and product diversification, extensive marketing and/or servicing facilities, product differentiation, and, in the case of the auto industry, retooling for major body changeovers.

## V

# STABILIZATION AND DEPENDENT ENTERPRISE: THE GLASS CONTAINER INDUSTRY

## 1. INTRODUCTION AND GENERAL CHARACTERISTICS<sup>1</sup>

Purpose of the present chapter is to analyse briefly the operation of certain important aspects of a representative policy of market stabilization in an industry where it reached perhaps the highest point of development achieved anywhere in American manufacturing, in the absence of government intervention. Our purpose, therefore, is to reorient certain well-known, as well as certain neglected, facts about this industry so as to show the position of the small-firm segment where a "pattern of protection and privilege" (Brady) has been almost fully shaped. We shall also examine the incidence of the disruptive impact of the small-firm group upon the evolution of that pattern.

The "glass bottles and jars" industry entered the 20th century technologically restricted to the use of semiautomatic equipment in wide-mouth ware and hand methods in other types of containers. The basic inventions used were the Siemens regenerative furnace of 1861 and the continuous melting tank of 1872.<sup>2</sup> In 1904, on the eve of the revolutionizing Owens automatic suction machine for delivering molten glass to the forming unit, approximately 158 semiautomatic or hand-method establishments, owned by 155 firms, manufactured a total U. S. output of approximately 12,000 thousand gross containers.<sup>3</sup>

The subsequent two decades were noteworthy for:

- (a) More than 100 per cent growth in total output (to 28,393 thousand gross in 1923);<sup>4</sup>
- (b) A drastic net reduction in number of firms, due to the mass elimination of hand-technique plants and a policy of restrictive licensing on suction feeders pursued by the Owens Bottle Company. This limited expansion of established firms, and ingress of new ones contributed to the rise of Owens to the position of leading producer;
- (c) Solidifying of the competitive opposition to the monopolistic exploitation of the Owens feeder patent;

<sup>1</sup> For the general features of this industry, see an interesting discussion by R. L. Bishop, "The Glass Container Industry", in Adams, Walter, *The Structure of American Industry*, New York: MacMillan, 1950.

<sup>2</sup> U.S., Bureau of Labor Statistics, *Productivity of Labor in the Glass Industry*. Bulletin No. 441. July, 1927, pp. 3-5.

<sup>3</sup> *Ibid.*, p. 15; U.S., Temporary National Economic Committee. *Hearings*. Patents: automotive industry, glass container industry. Part 2. Washington, 1939, p. 755.

<sup>4</sup> *Productivity of Labor in the Glass Industry*, op. cit., p. 15.

- (d) The consequent discovery, in 1918, of an alternative patented (gob-feeding) method, and its acquisition by the Hartford-Empire Company, a patent holding company,<sup>5</sup> and
- (e) The competitive conflict between Owens and Hartford, leading to their historic agreement of 1924 to stabilize the industry.

In spite of a 100 per cent expansion in total output, and very favorable rates of return, the glass container market was not populated with a multitude of small concerns. The characteristic elimination of outmoded units attendant upon the late industrial revolution in glass containers was not compensated by an influx of new enterprises, because control of completely automatic methods was restrictively exploited by the controlling firm, which is also the largest manufacturer. Entry was limited from the outset. In consequence, the great growth in the market was accompanied by a net *decrease* of plants to 102, and of firms to 80, by 1920.<sup>6</sup>

The decisive decade and a half which followed is marked by the absence of a clear secular growth in total output. It will be recalled that the latter stood at 28,393 thousand gross in 1923. Thereafter a gap in the data appears until 1928, when total shipments had risen to only 31,943 thousand gross.<sup>7</sup> The 1929 output of 35,686 thousand gross was not again reached until it was exceeded slightly in 1934, with 35,797 thousand gross manufactured. Subsequently the industry again entered an expansion period, and output amounted to 51,227 thousand gross in 1939.<sup>8</sup> Thus, although the true secular trend for the entire period is upwards, the years to be discussed below, in which the stabilization policy was crystallized, were notable for a relatively slow growth.

The same period, following World War I, also witnessed the emergence of excess capacity in the industry. Production was 72.6 per cent of capacity in 1926.<sup>9</sup> By 1928, shipments of approximately 32,000 thousand gross were made by an industry with a capacity of some 47,000 thousand gross.<sup>10</sup> This was partly due to the fact technical progress is so rapid in the field of glass factory equipment. It has been estimated that, on the average, equipment becomes obsolete every third year.<sup>11</sup> Despite all efforts by concerns in the industry to

<sup>5</sup> Hartford-Empire was the product of a merger in 1922 of the Empire Machine Company, a patent holding company controlled by the Corning Glass Works, manufacturer of optical, heat-resistant and other "pressed and blown ware," and the Hartford-Fairmont Company, manufacturer of glass-ware machinery and developer of the (Peiler) gob-feed method.

<sup>6</sup> TNEC, *Hearings*, Glass container industry, op. cit., 805.

<sup>7</sup> *Ibid.*, pp. 821-22. Shipments probably run slightly less than output totals, but the latter are not available for all years.

<sup>8</sup> Commodity Research Bureau, *Commodities in Industry, 1940*, New York, 1940, pp. 290-291. During World War II, due to the shortage of metals, the glass container industry enjoyed a phenomenal expansion in sales. Production in 1940 totalled 52,116 thousand gross; using the same year as a base, the 1944 output index stood at 200 (*Glass Packer*, October, 1947, p. 749.)

<sup>9</sup> U.S., National Recovery Administration. *The Glass Container Industry*, Statistical Materials Series No. 36, pp. 6-8.

<sup>10</sup> Testimony of E. G. Ackerman, assistant business manager of the Glass Container Association; the trade organization for the industry, at NRA hearings. U.S., National Recovery Administration. *Hearings on the Code of Fair Competition for the Glass Container Industry*. Hearing No. 205, August 20, 1933, p. 29.

<sup>11</sup> Seidler, G., "Allocation of production in the glass container industry" Report for the NRA, pp. 22-23).

effect a policy of capacity control, chronic plant excess plagued this market throughout the entire period from 1920 to World War II. Average operation from 1928 to 1938 was at about 55 per cent of active capacity (i.e., capacity which can be put into full operation immediately, or within 30 days).<sup>12</sup> The policy regarding surplus capacity pursued by those with controlling power in this industry may throw some light upon economic behavior in other lines less favored by the facilitating element of a patent monopoly.

The glass container industry is characterized furthermore by the presence of moderately high overhead costs. This is suggested by the census data. Wages in 1939 accounted for 21.5 per cent of value of product, and raw materials, fuel, etc. for approximately 38 per cent of value of product.<sup>13</sup> This puts glass containers in the group of medium labor-cost industries and between low and medium "raw materials" costs industries according to the Alderfer and Michl classification.<sup>14</sup> While this is a very crude measure of overhead costs, it is clear that the cost structure of the glass container industry places it in a group with relatively high overhead and relatively substantial investments in fixed assets.

We are dealing, then, with an industry whose modern technique has emerged late enough to call it a 20th century industry. It is one characterized by significant overhead costs for the firm, industry excess capacity, and, during the period of evolution of its stabilization policy, from 1924 to 1935, a mild expansion in total market demand.

## 2. SMALL ENTERPRISE: A DEFINITION

The study of the glass container market will be treated largely as a study in the evolution of a policy of industrial stabilization with particular attention to its incidence upon, and implications for, the status of a small manufacturing enterprise. As is now well known, this policy was constructed around a system of patent rights. It is the interpretation herein developed that the patent network was not the outstanding feature from the viewpoint of the evolution of structure and policy, or for the incidence of the latter upon small enterprise; rather, the patent control arrangements are viewed as a means of implementing policies which emanated from the economic conditions inhering in the *modus operandi* of the industry itself. Such an interpretation seems entirely consistent with the record of the preceding industries in the present study. The latter exhibit many basic trends similar to those in glass container. The existence of tightly held patent privileges in glass container functions primarily to sharpen and accentuate industrial behavior patterns that tend in other markets to lack such clear outlines. On these grounds the study of this industry crystallizes and summarizes many of the problems of the smaller manufacturers as surveyed in butter, flour, and automobile.

<sup>12</sup> TNEC Hearings, Glass container industry, op. cit., pp. 803, 817.

<sup>13</sup> Computed from *Statistical Abstract of the United States*, 1946, p. 831.

<sup>14</sup> Alderfer, E. B. and Michl, H. E., *Economics of American Industry*: New York, 1942, pp. 12-13.

The relevant history of the small firm in glass container is pre-eminently the history of its conflict with the policy of stabilization as pursued by the leading factors in the industry. The latter emerged as Owens and Hartford-Empire following the agreement between the two in 1924; and their policy union was formally expanded to include the second largest producer, Hazel-Atlas Glass Company in July, 1932, and Ball Brothers, largest producer of fruit jars, in March, 1933.<sup>15</sup> Two additional firms, Thatcher Manufacturing Company and Anchor Hocking Glass Corporation, may also be added to those prominent in the stabilization movement. Hence, the oligopolistic core is composed of six firms: five container manufacturers and one patent holding company. This core was already established in the industry prior to the rise of the stabilization movement and continued throughout the entire subsequent period. Owens dates from 1907; Hazel-Atlas from the Atlas Glass and Metal Company, 1901; Thatcher from 1905; Anchor Hocking from the Hocking Glass Company, organized in 1905 and merged with Anchor Cap Corporation in 1928; Ball Brothers from 1882; and Hartford-Empire from 1922, although both Hartford-Fairmont and the Empire Machine Company antedate this merger.

"Small enterprise" in the industry is in general composed of (1) prospective entrants who were refused licenses to engage in glass container production;<sup>16</sup> (2) the 28 firms which were consolidated with other companies, primarily through acquisition by the oligopoly group, between 1920 and 1938; (3) the 29 companies that found it impossible to operate under the monopolistic conditions in the industry during these years, and were forced to leave the market; and (4) the approximately 36 dependent firms which remained through the years of conflict to disturb, but occasionally embrace, the stability movement nurtured by the dominant factors. This totals 93 active commercial producers, plus an unknown number of potential entrants.

### 3. STABILIZATION, SUPPRESSION OF ENTRY, AND DEPENDENT ENTERPRISE

The Hartford-Owens agreement of April 9, 1924 was the product of the recognition that the interests of stability could not possibly be furthered, and that the almost complete destruction of the asset values of the two concerns might result, unless the rivalry between them over the licensing of patented machinery was amicably terminated. In the years preceding the settlement of 1924, the two concerns engaged in a race to secure control of gob-feeding

<sup>15</sup> *U.S. v. Hartford-Empire Co. et al.* No. 4426, D.C., N.D. Ohio, W.D., Aug. 25, 1942, pp. 26-29, 40-47, 59-67. Hereinafter cited as "Civil Action No. 4426."

<sup>16</sup> The Glass Container Association, in its report to the TNC alleged that 22 new companies had entered the industry between 1920 and 1938 (*Hearings*, op. cit., p. 805). However, the Government, in its brief against the leading concerns, averred that no newcomers had "been admitted into the industry during the entire existence of" the Hartford-Empire Company. In rebuttal, attorneys for the latter claimed only that it had licensed two newcomers, Northwestern and Diamond, during that period (after 1922). (U.S., *Federal Supplement*, vol. 46, No. 4, pp. 541-622, October 26, 1942, p. 552. Hereinafter cited as "Fed. Sup. Vol. 46.") If the Government and Hartford-Empire are correct, formation of Hartford-Empire marks the cessation of effective entry, since Owens probably did not license a newcomer after 1914 (U.S., Temporary National Economic Committee, *Technology in our Economy*, Research Monograph No. 22, Washington, 1941, p. 215), and certainly did not after 1918. (Civil Action No. 4426, op. cit., p. 69.)

patents and inventions, and the manufacture and licensing of machinery under such patents. But compulsion towards stabilization was too strong, and negotiations between them looking toward a cooperative resolution of the struggle began in 1919.

In a memorandum by H. K. Smith of Hartford, summarizing a conference between the two firms, dated December 23, 1921, the conflict between a policy of stabilization and the entry of a multitude of small new competitors was sharply delineated:<sup>17</sup>

The Owens Company were now making a third attempt to get some solution of a very serious situation . . . if they did not succeed in doing so, they would have to fight over the entire field to a general finish, by all proper means . . . (in which case) - -

a. Either the Owens Company would result in dominating the entire glass industry, or

b. The . . . industry would be thrown wide open on a purely competitive basis with no considerable patent protection for anyone, and any "farmer" could take up this cheap method and go into the glass business . . .

. . . however, . . . as long as Owens and Hartford continue to fight each other, the so-called "outside" feeders will continue to operate and increase in number, with all their destructive effect on the stability of the industry . . .

Small enterprise is identified, as is a many-firm market structure, with the destabilizing force of competition, notably with respect to freedom of entry. An extract from a letter written during the negotiations period (on February 15, 1921) from F. Goodwin Smith of Hartford to E. M. Ashcraft of the Illinois Glass Company, stated:

Owens felt that if no one controlled the gob feed method, the whole field would be open to a number of feeders which would unstabilize the general trade, and that our licensees would be thrown into competition with a lot of small factories that could get Howard or Miller feeders on a 5¢ or 6¢ royalty rate . . .<sup>18</sup>

Stabilization might require the exercise of the entire organized economic resources of the two concerns, with Owens the active agent, against "price-cutters" both medium or small:

. . . there should be . . . some concern like Owens . . . to force a stable price policy upon all important producers; that if Owens, by the plan as above suggested, had the free use of its own suction feed and the free use of the gob feed it could then go to any other producer who threatened to cut prices and unstabilize the market and inform him that such a policy was detrimental, but that if the outsider persisted in doing so Owens had a sufficient margin, by reason of its free use of both devices, so that if necessary it could come out on top in a price war and still make money . . .<sup>19</sup>

<sup>17</sup> Fed. Sup. vol. 46, op. cit., pp. 557-559.

<sup>18</sup> Fed. Sup. vol. 46, op. cit., pp. 559-560. Some years after the stabilization program had been in operation, Owens calculated that "stabilization (was) worth several hundred thousand dollars a year." (Ibid., pp. 566-567).

<sup>19</sup> Memorandum by H. K. Smith of Hartford, January 17, 1922, paraphrasing statement by J. C. Blair of Owens at a conference between the latter and Hartford. (Ibid.)

Professor J. M. Clark has argued that new entrants bear a double threat to established enterprises.<sup>20</sup> It may be inferred that the threat is most potent in cases where the latter operate under the constraint of high overhead costs and a relatively stagnant secular trend of market demand. In the first place, the new concerns are likely to possess superior techniques, making it possible for them to cut prices. In the second place, if they do not cut prices, the industry may in any event suffer from augmentation of its excess capacity. It appears that the competing Howard feeder, among others, represented just such a threat at this time in the industry's evolution and in the progress of the Hartford-Owens negotiations. "Howard has a going business and a feeder which can compete with ours unless properly shut up," wrote V. M. Dorsey, patent counsel for Corning and Hartford on April 12, 1922.<sup>21</sup> The use of such feeders by new or established small concerns to cut prices illustrates one aspect of Professor Clark's formulation of the conventional argument. Thus, F. Goodwin Smith, an officer and director of Hartford, expressed the conviction that "the Howard feeder was sufficiently good to upset trade conditions in general, inasmuch as the feeder when operated by the smaller glass concerns would permit the small concerns to continue to exist and at the same time quote prices which would be detrimental to the general trade . . ."<sup>22</sup>

The objectives of stabilization were inimical to the continued existence of small enterprise, partly because the latter were subversive of the going price structure. The identification of competitive pricing, with a market structure containing many small producers, placed the suppression of entry in the forefront of Hartford's historic policy of stabilization from the inception of its commercial expansion period in 1917. It gave rise to its practice, along with Owens, of restrictive licensing and refusal to license.

. . . if we put out these machines . . . without restriction, we would disorganize the whole industry which was then divided into a large number of small units and most of these manufacturers would not be able to refrain from using practically all the savings produced by these machines in fighting with each other . . .

We licensed the machines only to selected manufacturers of the better type, refusing many licenses whom we thought would be price-cutters, and . . . We restricted their fields of manufacture in each case, to certain specific articles, with the idea of preventing too much competition . . .<sup>23</sup>

Refusal to license continued to be the chief instrument for stifling new entry into the industry.

Since the existence of competing feeders in 1922 (notably those of Howard, Miller, and Federal, in addition to Owens) was a basis for continued entry of smaller competitors, it became necessary to eliminate this potentially disturbing factor in the related machinery manufacturing line. An organized

<sup>20</sup> Clark, J. M., *Studies in the Economics of Overhead Costs*, Chicago, 1923, p. 546. Cf. also, Buchanan, N. S., *The Economics of Corporate Enterprise*, New York, 1940, pp. 340-341.

<sup>21</sup> Fed Sup. vol. 46, op. cit., p. 557.

<sup>22</sup> Ibid., p. 563. Statement to the Hartford Executive Committee at a meeting on May 18, 1921.

<sup>23</sup> Ibid., p. 593.



campaign to accomplish this was begun in 1922 by Owens and Hartford-Empire.<sup>24</sup>

The second largest producer, Hazel-Atlas had already begun to follow a stabilization policy as early as 1923.<sup>25</sup> Impetus for engrossment of the feeder machine line was given partial expression by one official of Owens, who writes with reference to the Miller machine: "It is fatuous to believe that glass manufacturers are going to continue to pay royalties in the face of competition which pays no royalty and yet has the use of such a successful feeder . . ." <sup>26</sup>

By the end of 1925, Hartford owned or controlled all the feeder rights which these various companies possessed.<sup>27</sup> A similar process of engrossment of independent machinery manufacturers occurred with respect to the items of equipment used in the industry, in particular, other suction machines, forming machines and annealing lehrs.<sup>28</sup> Ancillary manufacturing in this case directly threatened the structure and functioning of the small-plant, scattered, and easily accessible raw-material industry which it served. Complete engrossment, implemented by patent power, was the policy pursued.

Within the industry proper, the protection of manufacturers' asset values and the royalty incomes of the Hartford-Empire Company required coordination of the capacity and output totals for the industry. As basic price determinants, and through these, profit ratios, capacity and output absorbed much of the attention of the dominant oligopoly during the whole period of stabilization. This aspect of the problem of achieving stability bears upon both the control of entry and the subordination of established small enterprise to the dependent status which it ultimately occupied. Like Owens, Hartford early dedicated itself to "the general principle of preventing over plant-investment

<sup>24</sup> " . . . therefore the Howard situation and possibly the Federal must be appraised and provision made for controlling them by successful suit and bringing the users in as sources of income, or, failing a control by successful suit, by purchase on a fifty-fifty basis, to which purchase I think Owens must be positively committed." (Ibid., p. 561, communication by A. D. Falck of Corning to F. Goodwin Smith, April 25, 1922.) " . . . as each of our companies, Hartford-Empire and Owens, have something on the Federal Company, the best strategy is for our two companies to go against Federal in unison. This . . . cuts out the chance of the Federal Company playing one of us off against the other . . . this, if carried out successfully with Federal, is the one procedure which will promptly and completely stabilize the situation and stop the very serious Miller advance." (Ibid., p. 562, minutes of an Executive Committee meeting of Hartford, April 19, 1923.) "Users of Miller feeders to be sued for infringement by Hartford with agreement (i.e., with Owens) that they either be stopped or certain ones be allowed to continue to use Miller feeders at higher rates of royalty than Hartford is now asking." (Ibid., p. 563; memorandum by F. Goodwin Smith, April 27, 1923.)

<sup>25</sup> "To my inquiry as to whether we could rely on Hazel-Atlas going with us in this policy, their answer was in the affirmative . . . Mr. Owens quoted statements of Mr. J. C. Brady which would lead to the conclusion that the Hazel-Atlas Company would rather pay royalties for the use of its plug feeders, than to have the field open, quoting him further as saying that they would, if necessary, return to the flow feeder for their line of ware in case the royalty situation became too onerous." (Ibid., pp. 563-564, memorandum by H. W. Carter of Owens, Nov. 7, 1923.)

<sup>26</sup> Ibid., p. 564. Letter from H. W. Carter of Owens to W. H. Boshart of Owens, August 23, 1924.

<sup>27</sup> Howard realized "something ought to be done to stabilize the trade" and was "willing to consider any proposition that gave the stockholders a reasonable return and did not destroy the prestige which he and his company had obtained," according to a memorandum by F. Goodwin Smith on April 25, 1922. (Ibid., p. 563). It is difficult to determine whether this attitude involved a willingness to stabilize, or coercion. Howard was engrossed by outright purchase through the Beech-Nut Packing Company, one of the original organizers of Hartford (Ibid., p. 557). Both Miller and Federal were also purchased. Hartford and Owens shared in the purchase price of each, \$145,000, for Miller and \$1,600,000 for Federal. (Ibid. p. 564). Nearly all users of these machines, usually under suit for infringement, eventually became Hartford licensees. (Ibid., p. 549).

<sup>28</sup> Civil Action No. 4426, op. cit., pp. 30-31, 51-52.

and over-production, as well as keeping the licenses out of the hands of objectionable and irresponsible parties . . ."<sup>29</sup>

The appropriate perspective with regard to small enterprise, when the achievement of industrial stabilization is the objective, was stated by a Hartford official (H. K. Smith) while the Hartford-Owens negotiations were in progress:

. . . there is also involved in this general question, the question as to what is to be done with the outsiders when dominated. How many shall be allowed to survive and at what price?<sup>30</sup>

The policy represented in a statement such as this brings out an aspect of the status of small enterprise which has not previously been discussed in this analysis. Given the institutional framework of the American anti-trust laws, and the public hostility toward "monopoly," the maintenance of a fringe of smaller units tends to become a part of the high strategy of oligopoly. "Under the present trust laws in the United States, it is natural for large scale business to permit a fringe of competition to survive, some of which they have the economic power to extinguish. They may use this power if provoked, and the weaker producers know it."<sup>31</sup> It may be recalled that during the International Harvester case in the early 1920's, the company took pains to stress that "the number of new manufacturers established . . . for the production of the more important implements was about equal to the number withdrawn from the industry," and that "new firms did not enter a field they believed to be closed against them, or from which they have seen other firms eliminated by impossible conditions."<sup>32</sup> This same consciousness of the necessity for representing an industry as structurally competitive or as possessing the entry conditions associated with such structure, can be inferred from the surprising averment by the Glass Container Association that "22 new companies" entered the industry between 1920 and 1938. The dominant concerns may thus favor the preservation of a certain limited number of dependent smaller producers.

It was of course recognized by the stabilization group in the glass container industry that the existence of too many producers would make the task of private economic planning of entry, capacity, plant expansion, output and price a difficult one. The matter of "how many shall be allowed to survive" was taken up, with the patent as a facilitating instrument, soon after the Hartford-Owens agreement of 1924.

The complex of economic motivation which forced the policy amalgamation between the two firms, and the business objectives embodied in that settlement, were outlined in a memorandum by H. K. Smith in April 1922:

<sup>29</sup> Fed. Sup., vol. 46, op. cit., p. 568. (Memorandum of H. K. Smith, April 21, 1922).

<sup>30</sup> Ibid. Smith was at that time Secretary, General Counsel, and a Director of Hartford.

<sup>31</sup> Clark, J. M., *Overhead Costs*, op. cit., p. 440.

<sup>32</sup> Burns, A. R., *Decline of Competition*, op. cit., p. 114.

. . . the commercial considerations, involved in considering either our agreement or a conflict between Owens and Hartford-Fairmont, are of greater importance than the relative patent values controlled by the two companies. By "commercial considerations" is meant the domination of outside feeders, the stabilization of the industry tending against irresponsible price-cutting; the general cooperation between the gob and suction processes for an orderly development of the two side by side, such as will be most beneficial to the interest of the two companies and to the industry; and finally the steadying influence that will be established in the machine side of the industry by a recognized cooperation between the two companies . . .

That "commercial" factors, rather than patent considerations, were the underlying forces in the development of stabilization—a fact which thereby gives the history of this industry greater significance for industry as a whole—is indicated, not only by the above memorandum but also the inclusion in the 1924 agreement of the statement that "the undersigned believe it is for the interest of both companies to mutually disclose, consider and settle any overlapping or conflicting matters of inventions that may arise between the companies, even though such overlapping or conflicting matters may be outside the field of licensed inventions . . ." <sup>34</sup> Owens pressed for high royalty rates primarily to build up a revolving fund for "coordinating" the recalcitrant, smaller producers. <sup>35</sup> Drawing upon raised royalty rates for both Owens and Hartford licensees, the latter were thus designed to finance their own demise, unless they relinquished their seller independence. The policy of Owens and Hartford was to "cooperate actively in attacking the outsiders, sharing equally in the expenses, including cost of buying out outsiders . . ." <sup>36</sup> Thus, small enterprise receives definition.

#### 4. CAPACITY CONTROL AND DEPENDENT SMALL ENTERPRISE

The construction of the capacity control program was therefore a multi-lateral task. Prevention of the entrance of new capacity was one means. Elimination of independent firms was another. The equipment of some of these may well have been obsolete and "inefficient." "Weak producers must be absorbed, even though their plants prove useless and are closed down." <sup>37</sup>

The problem of efficiency is not a matter for elaboration here, but on the basis of consumer-oriented criteria, it is doubtful if the benefits of monopolistic "innovation," following Schumpeter's line of argument, can be very easily demonstrated in this industry. It is true that the acquisition of inefficient plants by, e.g., Owens, may have in some cases removed such equipment from active production. But the cost of such acquisition, paid in the first instance by the industries purchasing container ware, must allow for consideration of the royalty system, the maintenance by the leading firms of

<sup>33</sup> Fed. Sup. vol. 46, op. cit., p. 561.

<sup>34</sup> *Ibid.*, p. 564.

<sup>35</sup> *Ibid.*, p. 560. Memorandum by F. Goodwin Smith of Hartford, January 24, 1922.

<sup>36</sup> *Ibid.*, p. 560. Minutes of an Executive Committee meeting of Hartford, April 19, 1922.

<sup>37</sup> Clark, J. M., *Overhead Costs*, op. cit., p. 144. It may very well be that in many industries where technical progress is relatively rapid, the small enterprise segment holds the bulk of the obsolete plant and equipment.

large idle, stand-by capacity, and the effect of the suppression of competing producers, upon price. As one writer has reasoned, "If such giant corporations as General Electric and the Hartford Empire Company ride to market on efficiency alone, why have they been so concerned with barricading themselves against the invasion of competitors? The existence of such careful programs to impose license and other handicaps upon small producers raises a presumption against claims for efficiency."<sup>38</sup>

The industry has been able to show a secular decline in price, but evidence for testing the extent to which the savings of improvements have been passed on, is lacking. Capital-saving innovations, particularly in the field of furnace construction and utilization, with the special advantage of *reducing costs without increase of production*, have been made.<sup>39</sup> But the high profitability of the leading concerns, among other things, suggests a faulty transference of lowered production costs into price.<sup>40</sup> An industry which superimposes a monopoly policy of stabilization upon an oligopolistic structure has the weight of theory against its claims to efficiency.

Schumpeter's line of reasoning does not seem borne out in this case. At the time of the NRA code discussions the oligopoly center proposed that smaller producers place a ceiling on their rate of operations lower than had obtained in practice among the latter.<sup>41</sup> The policy of eliminating price competition, the maintenance of a system of price leadership by lines of ware, and the organized frustration of inventiveness on the part of "outsiders,"<sup>42</sup> further indicate that economic advance may more appropriately be identified in this industry with the smaller container manufacturer than with the proponents of stabilization.

The reduction and control of capacity via the method of acquisition and merger, not unique in this industry, explains in great part the net reduction in number of concerns. Twelve firms went bankrupt during the years under review.<sup>43</sup> Much of the plant acquired from bankrupt or absorbed companies by the larger concerns was dismantled, but a substantial proportion was also held by them for either stand-by purposes or in order to secure a larger quota under the production control scheme fostered by the leading firms.<sup>44</sup> Under this plan, production allocations made to each producer were based upon his proportionate holdings of the total capacity in the industry.

Another method used by Hartford to limit total capacity was to prevent small producer plant expansion. This was effected typically by stipulations in the licensing agreements for the use of the Hartford-owned machinery;

<sup>38</sup> Brown, P. L., *The Economics of Small Business Enterprise*. Ph.D. Thesis, Ohio State University, 1944, p. 174.

<sup>39</sup> Fed. Sup. vol. 46, op. cit., pp. 555-56.

<sup>40</sup> For data on profitability of leading concerns and of the industry, cf. Civil Action No. 4426, op. cit., pp. 75-77; TNEC Hearings, op. cit., p. 798; Moody's *Industrials*, 1947, pp. a14-a15; *Fortune*, April 1932, p. 70.

<sup>41</sup> Hearings on the NRA Code, op. cit., pp. 67-70. Also Article VII of the Code as originally prepared.

<sup>42</sup> Fed. Sup. vol. 46, op. cit., pp. 577-613.

<sup>43</sup> TNEC Hearings, op. cit., pp. 806-09.

<sup>44</sup> Civil Action No. 4426, op. cit., p. 71.

and is an important aspect of the dependent status of the small producer in this industry. It is impossible to speak of enterprise autonomy in the absence of discretion regarding plant expansion, a problem which is readily assumed away in the context of a theoretical overemphasis upon the short-run determination of price and output for the individual firm.

By restricting the number of feeding machines to a licensee, Hartford prevented many of its licensees from expanding their businesses into various parts of the United States.<sup>45</sup> Many concerns were refused permission to branch out into the production of additional lines of ware. Such a case was the Three Rivers Glass Company, Hartford licensee, and a "price-cutter." The firm ventured to inaugurate production of a line of fruit jars in violation of its license with Hartford as well as an agreement of March, 1933 between Ball Brothers and Hartford. The latter repeatedly sent notices to Three Rivers to drop this commodity-extension. Thereafter, in 1936, Ball acquired the patents of this smaller competitor and then closed down its plant.<sup>46</sup> Hartford refused a license in July, 1933 to C. H. Hubbard to manufacture fruit jars. Again, in 1933, it refused a license to one, Pine, who had considered acquisition of the plant of the Interstate Glass Co. in order to expand into the production of the same line of ware. Hartford stated that "Ball Brothers are not anxious to have a new competitor springing up beside them."<sup>47</sup>

Expansion ceilings were placed upon other small producers in the form of limits in licensing contracts upon the total number of units that might be produced. No licensee of Hartford was permitted to produce all types of glass-ware on machines licensed from it.<sup>48</sup> The Sterling Glass Company was limited to the manufacture of 30,000 gross beer bottles and 10,000 gross of food condiment bottles per year.<sup>49</sup> Brockway Machine Bottle Company, one of the more "cooperative-minded" concerns, was limited to the production of 250,000 gross of widemouthed food containers per annum.<sup>50</sup> Among the licensees authorized to manufacture milk bottles, e.g., the Florida Glass Manufacturing Company, similar output ceilings were stipulated.<sup>51</sup> Many small firms were similarly restricted, as to their discretion to expand, by license requirements stipulating either the customers to whom their products might be sold (Knox, Gayner, Latchford, Maryland, Laurens, Clean, Maywood, and Chattanooga) or the territory in which they might sell (Northeastern).<sup>52</sup> These cases show in sharpest form how free enterprise was superseded by dependent enterprise in this industry.

Rivalry between the leading oligopoly and its small-firm appendages was

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<sup>45</sup> Civil Action No. 4426, *op. cit.*, p. 78.

<sup>46</sup> *Ibid.*, p. 65.

<sup>47</sup> *Ibid.*, p. 66.

<sup>48</sup> *Ibid.*, p. 79.

<sup>49</sup> *Ibid.*, p. 83.

<sup>50</sup> *Ibid.*, p. 85.

<sup>51</sup> *Ibid.*, p. 57.

<sup>52</sup> *Ibid.*, pp. 87-88.

not always quite so one-sided as the above licensing arrangements might suggest. Conflict broke out more openly, as it did in the case of flour milling, over the excess capacity issue. At the time of the NRA, much evidence came to light regarding efforts of leading firms to suppress the competitive potential represented in plant capacity under control of smaller producers. The capacity program in the industry's code resembled closely that of many other industries having similar structures and problems, but, in such programs, patent factors are minor or nonexistent. The capacity and production code provisions in glass containers were almost identical with those in the cement industry.<sup>53</sup>

The excess capacity situation in glass containers has been likened to that which obtains in textiles, dresses and soft coal, largely because of the easy entry conditions that would exist in the absence of institutional impediments.<sup>54</sup>

The stabilization program of the dominant oligopoly and its trade organization, the Glass Container Association, had not succeeded in eliminating the threat of excess capacity. In 1933 the total output of the industry was 34,826 thousand gross, whereas total capacity amounted to 63,000 thousand gross.<sup>55</sup> It is estimated that the industry as a whole operated at only 60 per cent of capacity.<sup>56</sup> Of course, this low ratio by no means can be attributed entirely to the ineffectiveness of the stabilization program, for the industry had suffered a severe setback from prohibition, followed by depression. On the other hand, a high percentage of the excess plant was held for "quota" purposes by the dominant group, and in such role actually reflected the degree of success of that stabilization program. This latter aspect of the excess capacity situation warrants further analysis.

## 5. PRODUCTION CAPACITY AND INTERGROUP QUOTA RIVALRY

One authority on the industry pointed out that in 1933 "almost all of the idle productive capacity is in the hands of the three or four largest firms, while the great majority of small firms work at full practicable capacity."<sup>57</sup>

When a group of investors, former glass container producers, attempted to rebuild and equip part of the plant of the Northern Glass Works Company, Milwaukee, Wisconsin, after several years of idleness due to prohibition, it petitioned the Glass Container Association for assistance and was told that "if there was a new glass works starting in Milwaukee the Owens-Illinois Company would start it, as they now have thirty shut-down obsolete factories, and surely would not see anyone else get started in this rich territory."<sup>58</sup> From the standpoint of direct cost-profit relationships, this condition was a dis-

<sup>53</sup> U.S. National Recovery Review Board, *Second Report to the President of the United States*, Washington, no date, pp. 14-16.

<sup>54</sup> TNEC Monograph No. 31, op. cit., p. 114.

<sup>55</sup> NRA, Hearings, op. cit., p. 29; and Statistical Materials No. 36, op. cit., p. 9.

<sup>56</sup> NRA, Statistical Materials No. 36, op. cit., pp. 6-8.

<sup>57</sup> Seidler, "Allocation of Production, etc.", op. cit., pp. 22-23.

<sup>58</sup> NRA Hearings, op. cit., pp. 56-58. Letter of Mr. M. V. Dahinden to Hon. R. J. Cannon, M. C., August 1, 1933.

tinctly disadvantageous one for the largest concerns, and one important purpose of the capacity provisions of the NRA code was to rectify it. On the other hand, it was the product of the long-run perspective of excess capacity control that had guided the stabilization group, and also was a necessary premise for their retention of high output quotas under the production allocation plan. As mentioned above, according to the latter arrangement, which "was in operation years before N.R.A.,"<sup>59</sup> the proportion of the industry's total anticipated demand for a coming period allotted to a particular firm was based upon its proportionate holdings of the total capacity. By buying up plant capacity, therefore, the leading concerns accomplished three aims: (1) they removed such plant from control by potential price-cutters; (2) they acquired production quota for the fulfillment of "ordinary" demand; and (3) they put themselves in an advantageous position to exploit any unexpected increase in total demand. This practice is by no means unique, for, as Professor J. M. Clark has pointed out, "the early history of the trust movement furnished glaring instances of combines overloading themselves with plants which were burdens rather than assets."<sup>60</sup> But in the conditions existing in the glass container industry they were clearly not an unmixed burden. It was precisely the burdensome aspect of excess capacity, i.e., the fact that the largest producers held the greater portion of it (accounting for a higher percentage of total excess capacity than of total production), which the NRA code was designed to set right.

Let us bring together the various aspects of the complex capacity issue, in order to summarize their differential impact upon the leading producers and the small firms:

- (1) The large enterprises held the great bulk of the idle and obsolete capacity; i.e., a more than proportionate share.
- (2) Looked at industry-wise, production was normally substantially less than capacity.
- (3) The program of the leading concerns demanded that each corporate unit operate its "available plant" at a stipulated ratio to capacity (a ceiling). This would have different effects upon the large and the small firms, as follows:
  - (a) The small, one-plant firms would have to operate their plants at the stipulated utilization ceilings. This would have meant reducing their rate of operation in many cases.
  - (b) The large, multiplant firms would operate their active plants at full capacity rates, thus enjoying lower unit-costs, and no reduction in rate of operation of those active plants. Their excess, or unutilized capacity, would exist in the form of other idle-

<sup>59</sup> Fed. Sup. vol. 46, op. cit., p. 587. Communication of G. F. Riemann of Capstan Glass Company, July 3, 1935. Riemann was a member of the strategic "Statistical Committee" of the Glass Container Association.

<sup>60</sup> Clark, J. M., *Overhead Costs*, op. cit., pp. 144-145.

stand-by or dismantled plants.<sup>61</sup> The more a large firm possessed of the latter, the higher its production quota, and therefore the more fully-active plants it could enjoy.

The code committee of the Glass Container Association, which proposed and submitted the code to the NRA, was composed of five individuals, of which three represented the dominant oligopoly group—Owens-Illinois, Hazel-Atlas, and Thatcher. The code emphasized in its controversial Article VII the existence of excess capacity in the industry. The proposed code stated in "Schedule A" that the "principle of sharing the available business equitably between the various members of the industry" would have to be recognized so long as "the industry is operating below 80 per cent of capacity."<sup>62</sup> The final code enunciated the same principle, so long as the industry was "operating below 70 per cent of yearly registered capacity," and "not to restrict production but to maintain a reasonable balance between production and consumption of glass containers and to secure adequate supplies thereof."<sup>63</sup> On the basis of a six-day, rather than the customary seven-day operating week in this necessarily continuous furnace-production industry, a Code Authority, chosen on a capacity-voting arrangement, was, according to the final code, to

... from time to time, but not less frequently than each six months, prepare an estimate of expected consumption of glass containers. Upon the basis of such estimate the Code Authority shall make equitable allocations to each member in the Industry in accordance with the plan so approved . . . After such allotments have been assigned, no person shall produce glass containers in excess of his allotment.<sup>64</sup>

Recognition was to be extended to "the greater difficulties to be met by the smaller producers in the industry in operating on a controlled basis" as a result of the functioning of this code.<sup>65</sup>

The differential impact of the capacity and production ceiling provisions of the code, in the framework of the strategy being pursued by the oligopolistic center, was brought to light at the hearings. Two complainants from the related machinery and equipment industry appeared at the hearings, with a joint statement. One was the Amsler-Morton Co., lehr manufacturers; the other the H. L. Dixon Co., engineers and contractors specializing in furnace construction for the independent producers. This statement in part was as follows:

We desire to object to Article VII of the . . . Code . . .

1. It is discrimination against the minority interest in the bottle industry who need increased production to operate on a profitable basis . . .

<sup>61</sup> The statement by Seidler, quoted above, is therefore readily subject to misinterpretation. The active plants of the larger manufacturers were operated at least at as high utilization ratios as the small, one-plant enterprises.

<sup>62</sup> U.S., National Recovery Administration, *Proposed Code of Fair Competition for the Glass Container Industry*, Washington, August 23, 1933, Registry No. 1022-1-03, p. 6.

<sup>63</sup> U.S., National Recovery Administration, *Code of Fair Competition for the Glass Container Industry*, Washington, October 3, 1933, Approved Code No. 36, reprinted in *Codes of Fair Competition*, vol. I, Washington, 1933, p. 465.

<sup>64</sup> *Ibid.*

<sup>65</sup> *Ibid.*



4. Clause VII is unnecessary in an industry now perfectly controlled by a machinery patent situation in the hands of a few, who allocate and classify production made on their machines.
5. The industry is and has been in a very healthy state throughout the depression. It has benefitted handsomely by Modification and Repeal of the Eighteenth Amendment . . .
6. The larger producers have for a period of 5 years been acquiring smaller producers to give them a preponderance of capacity. Most of these acquired plants have been closed down and represent about 700,000 tons of potential idle capacity. However, the plants are obsolete and no attempt has been made to rehabilitate or use them. According to the restrictive provision of the Code, no small producer can add a new furnace, but the large producer can now rehabilitate these plants to acquire for himself all the benefits of Repeal . . . and business recovery . . .
9. Our clientele consists of the manufacturing group outside of the large producers, and the curtailment of the small manufacturers' production and expansion will wipe out our business.<sup>66</sup>

In a telegram to Mr. Malcolm Muir, NRA, on August 26, 1933, the Fairmont Glass Works wired:

We desire to protest vigorously against paragraphs one and two under Schedule A of trade practices in that such arrangement would work to the decided disadvantage of some of the smaller manufacturers restricting further their present limited activities and destroying any possibility of showing progress . . .  
 . . . we . . . did not subscribe to or vote for these provisions in this Code at Buffalo meeting.<sup>67</sup>

Framers of the code inserted an escape clause in paragraph VII of the above mentioned "Schedule A" to the effect that "it is further agreed that the above provisions are not obligatory to all groups under the glass division herein referred to as the industry. In case the majority of the members in any competitive group declare that the principle of sharing the available business equitably does not apply, failure to so apply this provision shall not be construed a violation of the code."<sup>68</sup> In a letter to General Hugh S. Johnson, NRA administrator, on July 29, 1933, the Amsler-Morton Company, manufacturers of furnaces and furnace equipment for the glass container industry, registered a protest against this provision, as follows:

Modification has swamped this industry with orders and the Owens-Illinois Glass Company, the largest producer and chief offender, feverishly makes new furnaces prior to the enactment of the Code to retain for itself its present production quota and saddle on its less able competitors the restrictions of Article VII . . .

Through a very questionable patent situation unfair restrictions are placed on small producers and Article VII of Schedule "A" of the Code is intended for a few . . .

This provision, created by a hand picked committee, is to protect monopolies of certain classes of ware produced in the trade . . .<sup>69</sup>

In a letter from the small Brockway Glass Company, to E. G. Ackerman of the Glass Container Association, on August 26, 1933, the former declared

<sup>66</sup> NRA Hearings on the Code, op. cit., pp. 39-42.

<sup>67</sup> Ibid., pp. 61-62.

<sup>68</sup> Ibid., pp. 64-66.

<sup>69</sup> Ibid., pp. 63-66.

"it is generally conceded that the larger manufacturers are now selling less than their quota will be fixed at, while the smaller manufacturers are selling larger amounts than they can hope to obtain as a quota figure. This might result in a mad scramble on the part of the larger concerns for the business that must be given up by the smaller units, and unless some more definite provision is placed in the code to prevent selling at less than cost the smaller manufacturer is going to find himself with a reduced production at a low price . . ." <sup>70</sup>

The letter goes on to add that "every small manufacturer unquestionably will be perfectly satisfied if given a reasonable quota, as long as he can be assured that he is going to be able to sell his glass at a profit." This attitude indicates the tendency of the smaller competitor, when under severe pressure, to seek an escape from his unequal conflict with the dominant oligopoly, an escape at the expense of competitive price. That is to say, when under such pressure, he seeks to embrace the economics of stabilization, providing some of the benefits will dribble down to him. The wishes of Brockway were adequately incorporated into Article IX of the Trade Practice section of the code, implemented by the requirement of a uniform cost accounting system which would cover "all the factors of cost as provided for by the Association cost system."

It is thus seen that the leading pro-stability forces sought to correct the great defect in their capacity program by reducing the production quotas allocated to the small firms, increasing their own shares of the total market sales, and, at the same time, bringing the smaller manufacturers into their system of stabilized prices through forced agreement on a uniform plan of cost accounting.

##### 5. INTERFIRM RELATIONSHIPS UNDER A STABILIZATION PROGRAM

For those small concerns which, as in the case of glass containers, are suffered to survive, stabilization brings loss of independence, but it may also bring temporarily high operating rates, inflexible prices and protected profits. The dependent producers may thus become integrated into the "pattern of privilege and protection." The coercive conditions associated with the construction of such a pattern by those leading firms for whom the compulsions to stabilize are keenest, induce the smaller "outsiders" to join the "in-group" on pain of extinction. A pro-stabilization attitude, such as expressed by the smaller Howard and Brockway concerns, referred to above, is one result. The Obear-Nester Company refused to become a Hartford licensee, and thereby prompted the institution of a suit for infringement. They had ventured to combat the ample resources of Owens and Hartford. A Hartford official declared, "we have no particular desire to oppress the Obear-Nester Company, but . . . their action in . . . neglecting to pay minimum royalties

<sup>70</sup> Ibid., pp. 67-70.

for a considerable period and then finally alleging the total invalidity of the contract on the ground of the Sherman Law has left a very bad taste in our mouth and I don't propose, if possible, to let them get away with it."<sup>71</sup>

But the opposition of Obear-Nester to this overwhelming power within its market, had also to cope with pro-stabilization pressure from the small enterprise fringe itself. For example, a communication from R. A. Blunt of the smaller Buck Glass Company to F. Goodwin Smith of Hartford, on May 23, 1935 related a discussion had by the writer with J. Morrison of Obear-Nester, which consisted in part of the following:

My advice to Morrison was . . .

"The only really effective control exercised in our industry is through the Hartford agreements. If another feeder comes into the market, it might reduce the amounts of royalties paid by various people now, but it would entirely destroy the protection which various people enjoy in their principal lines . . ."<sup>72</sup>

The same tendency for small enterprise to acquire a vested interest in stabilization, particularly where the financial inducements of a competitive alternative seem to have been removed by an established pattern of control, is suggested in a Hartford memorandum on a feeder litigation conference on April 6, 1926, to the effect that ". . . our milk bottle licensees would welcome a suit against Lamb as tending to put an end to Lamb's price-cutting policy . . ."<sup>73</sup> However, as has been remarked above, there is never surety that the system of stabilization will hold together. The degree of uncertainty in this regard is in direct ratio to the number and economic importance of the small enterprises in the market.

It is not to be inferred that the incorporation of a part of the small enterprise sector of a market dominated by a stabilization-minded, oligopolistic core brings a dependency that is at the same time a guarantee of profit security. It seems likely that the vicissitudes of the market will recreate continually the schism between the small enterprise segment and the dominant group, just as they will produce a conflict within the latter.<sup>74</sup>

Activities of leading concerns, Owens in particular, when Repeal presented the industry with an unexpected increase in demand, shows the instability of the protection sometimes afforded both large and small producers under private planning for market control. An unexpected drop in total demand is likely to have similar adverse effects upon this type of "security," embraced in a vacillating way by the smaller sellers. Dependency reasserts itself in the form of enterprise insecurity.

<sup>71</sup> Fed. Sup. vol. 46, op. cit., p. 609. Communication from H. K. Smith to Lehmann and Lehmann, attorneys, April 20, 1926, regarding the suit against Obear-Nester.

<sup>72</sup> *Ibid.*, p. 594.

<sup>73</sup> *Ibid.*, p. 590.

<sup>74</sup> Cf. on the last point the evidence of a conflict between Hartford and its controlling corporation, Corning, in regard to the latter's request in 1930 for permission to make containers out of ordinary glass at standard royalties (Fed. Sup. vol. 46, op. cit., p. 555); and the antagonism of Hartford and Owens stemming from the differences between "a company which must primarily regard the granting of licenses from the point of view of greatest possible income, and a company which, on the other hand, would primarily have in mind the effect of such licenses on competition." (Letter from H. W. Carter of Patent Department of Owens to J. C. Blair of Owens, August 14, 1923, Fed. Sup. vol. 46, op. cit., p. 563). The notorious uncertainties attending cartel agreements are illustrative of the same point.

Conversely, the continued existence of a small, quasi-competitive segment, though it may exist on sufferance and offer legal protection, remains as an abiding source of now potential, now actual, disturbance. The record of this industry is replete with complaints by Owens and Hartford against such firms as Lamb, Nivison-Weiskopf, Three Rivers, Hemingray, Salem, Knox, Whitall-Tatum, Turner, Tygart Valley, Fairmont, Peerless, Maywood and McKee for "not observing established price practices in the industry."<sup>75</sup>

Similarly, the extension of the production quota system, a cornerstone of stabilization and the special province of the Glass Container Association, was effected only by making concessions to the small enterprise segment. "In setting the quotas the 1 and 2 furnace factories were given more than their share because it was the only way the quota arrangement could be made to work . . . it is considerable of an advantage to have a quota which permits full capacity operation."<sup>76</sup> This suggests that the smaller concerns acted in concert regarding the quota system, and in so doing won for themselves an advantage in utilization rates. It was different when the individual firm acted alone. Capstan contemplated purchase of the Diamond Glass plant in 1935, emphasizing to itself that it was "buying quota." "However, before doing anything definite at Diamond we would of course make sure the major concerns would guarantee this quota to us if we buy the plant and dismantle it. Their quota amounts to 0.7% . . . and would be about \$600,000."<sup>77</sup> In this case it was necessary to secure approval of the "majors."

In this industry the majors were favored by the patent weapons, which made it easier to impose the quota plan than would have been the case otherwise:

While it is true that no one was absolutely bound to follow the quota system, nevertheless in practical effect all companies had to follow it quite closely or run the risk of bringing down upon them the wrath of Hartford, Corning, Owens, Hazel-Atlas, Thatcher and Ball. Since the smaller manufacturers had to rely upon Hartford alone for their machinery and equipment, this was tantamount to compulsion. In fact, Hartford, through its policy of retaining title to practically all the machinery used by its licensees, retained a control over them under the threat of Hartford to take away this equipment in event of their bad behavior, at least at the expiration of the eight or ten year license which was customary . . .<sup>78</sup>

Nevertheless, a "recalcitrant minority" of smaller concerns continually disturbed the attempts to make the quota system function smoothly. This emerged very clearly under pressure of market adversity during the early years of the great depression. A report on a meeting of the leading factors in the industry by E. G. Ackerman, dated September 19, 1930, contains the following paraphrase of the speech by Mr. Charles R. Stevenson, outstanding

<sup>75</sup> Cf. Fed. Sup. vol. 46, op. cit., pp. 590-592.

<sup>76</sup> Ibid., p. 587. Communication of G. F. Riemann of Capstan, July 3, 1935. This statement reveals part of the explanation for the superior ratios of operation to capacity enjoyed by the smaller manufacturers.

<sup>77</sup> Ibid. Communication of G. F. Riemann, July 15, 1935.

<sup>78</sup> Ibid., pp. 594-595.

figure in the field of glass containers, consulting engineer for over a score of the nation's leading industries, and for many years Business Manager of the Glass Container Association:

Mr. Stevenson added that industry as a whole is facing a real showdown in management . . . He said that there must be a complete solving of unemployment, and that industry must be allowed to force the will of the majority upon a small but disrupting minority, if business is to prosper, and if safe and sane margins of profit are to be maintained. These facts must be faced by our Association.

Additional evidence of the presence of virile competitive elements in the industry in the years following 1930 is found in the expansion of the price-cutter Knox, as well as the bitter controversy around the question of allocation in the NRA Code, referred to above.. It is further significant that, although the trade association, and its "statistical committee" of high executives from the major concerns, was the primary vehicle for extension of the quota plan, as of August 5, 1933 only 14 of the total of 46 glass container firms subject to the NRA code were members of the association.<sup>79</sup> The conflict

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<sup>79</sup> NRA Statistical Materials No. 36, op. cit., p. 11.

between stabilization and small enterprise persisted, a decade after the signing of the historic Hartford-Owens declaration of war on all "outsiders." It is not surprising that E. G. Ackerman during this period had occasion to declare, "we need a 'Moses' for the industry."

## VI

### SUMMARY: TOWARD A THEORY OF SMALL ENTERPRISE<sup>1</sup>

#### 1. TESTING THE WORKING HYPOTHESIS

The central working hypothesis of the present study posited that the strategic factor for the emergence of the modern "small business problem" in manufacturing is the rise of the large corporation and the growth of industrial oligopoly associated with it. Hence, the focus of the problem here has been the competitive relations of small enterprise, taken as a group, and large oligopolistic enterprise, also taken as a group.

That the smaller producer in modern industry no longer competes merely with rivals of roughly equivalent economic resources is obvious. The extent to which he must deal with unequals is indicated in part by the various studies of concentration in manufacturing production made in recent years.

It now seems generally established that high concentration is a permanent feature of our manufacturing economy; that the large producer is widely distributed throughout this sector of productive activity; and that those industries, taken collectively, wherein the large rival is absent are of substantially less economic importance than those where he is found. Therefore, the case material in the present work, and the additional empirical evidence drawn upon in this general discussion, comes from industrial markets in which the large enterprise shares the market with small firms.

The exclusion of the industries at the bottom of the concentration list, i.e., the so-called "small-business industries," is therefore a logical result of what is considered strategic to the competitive problems of small enterprise. Such exclusion, however, is not designed to imply that these industries are not a part of the total problem of small enterprise. They undoubtedly present the economy with great issues of efficiency, price policy, entrepreneurial opportunity, governmental regulations of business affairs, and so on. Numerically they may be of almost equal importance to small enterprise in markets with considerable concentration.<sup>2</sup>

On the basis of the emphasis made in the present study, therefore, the problem of small enterprise emerges as an aspect of the theory of oligopoly.

When the evolution of an industry generates enterprises of widely differing size, we now believe that at some point such quantitative differentiation produces significant differences in the power to compete for relative shares of the total market. Hence, when a market classification such as "heavy con-

<sup>1</sup> In connection with the discussion in this chapter, see Vatter, H. G. "Small Enterprise in Dominant Group Industries," *Proceedings*, 25th Annual Conference, Pacific Coast Economic Association, Corvallis, Ore., Sept. 7-8, 1950, pp. 16-20.

<sup>2</sup> It is recognized that not all concentrated industries are oligopolistic industries; neither is the reverse always true. But the coincidence of the two is satisfactorily widespread.

centration of industry output in the hands of very few firms, with dispersion of the remainder among relatively few . . .", or "moderate concentration of industry output in the hands of relatively few sellers, and dispersion of the balance among quite a few firms . . . oligopoly with a 'competitive fringe' . . ." is set up, it is suggested that certain significant "associated differences in behavior" may result.<sup>3</sup> This is just what has been involved in the use of such market structures in the present study. The automobile and glass container industries fit the first classification, butter and flour milling the second. Differentiation in size between firms has been used as a starting point to elaborate corresponding differences in competitive power between the group which makes for concentration within the market and the group which makes for dispersion. Such two-fold classification exhausts the total number of enterprises in the given industry; hence, we use the term "bilateral differentiation" of markets. These market structures are sub-categories of oligopoly; and the few concerns in which a significant proportion of total output is concentrated have been designated the "oligopolistic core"; whereas the remainder of the industry, "dispersed" in varying degree, has been designated the "small enterprise sector."

Industrial markets are not a congeries of autonomous, competitively undifferentiated producers. Our fundamental classification of markets into these two segments conforms to the practice of the business community itself, which typically distinguishes between "leading firms" and "independents," between "majors" and "minors," between "cooperators" and "outsiders," or simply the "large" and the "small."

Technological elements can be instrumental in bringing about size differences and accompanying competitive differences between firms. Otherwise it would not be a truism that technological change has been a factor in the growth of large-scale enterprise. This has very specific implications for the problem at hand. Technical progress is very seldom absorbed to equal degrees by all firms, both large and small, in a given industry, any more than it is between industries. To take as illustrative, one type of technical progress—the application of electricity—it has been shown that, on the plant basis, the rate of utilization of electric power per man-hour is much greater in concentrated than in nonconcentrated industries.<sup>4</sup> In a sample of 21 manufacturing industries in 1937, wide differences were found in the KWH consumed per man-hour in establishments within each industry arrayed by size according to number of wage-earners.<sup>5</sup>

It would obviously be a mistake, however, to define the concept of industrial differentiation in such terms that it appeared always to be generated by technological (or cost) factors. Industrial differentiation may be brought

<sup>3</sup> Bain, J. S., *Pricing, Distribution and Employment*, op. cit., p. 178. Such structures probably correspond roughly to Kaplan's "mixed industries" (*Small Business*, op. cit., p. 146).

<sup>4</sup> U.S., Temporary National Economic Committee, *Technology in Our Economy*, Mon. No. 22, Washington: 1941, pp. 206-07. Data are for 1937.

<sup>5</sup> Ibid., p. 205.

about partly by product differentiation, as in flour milling, automobile, cigarettes, gasoline, and so on. It may be produced by the penetration of certain leading manufacturers into distribution, as did the centralizers in the butter industry; by the reverse movement of distributors into manufacture, as in the case of the packer-centralizers, and also in the butter industry; or by various other instances of forward or backward integration.

Once differentiation has become sharp, so that there are two major segments (not merely one dominant firm) to the market, it may become extremely difficult for a typical member of the small-firm segment to rise out of the ranks. This seems true, for example, in the automobile market, where the sales "gap" between the independents (now only two!) and the big three appears impossible to close. A similar gap appears to exist in the rubber tire and tin can industries.

On the other hand, many markets in which there is some degree of bilateral differentiation reveal a rather gradual gradation in their array of firm sizes, and in such cases it is difficult to distinguish the line of demarcation between the oligopolistic and the small-enterprise segment. Illustrations of this condition to varying degree are found in the flour milling, paperboard, and, if the national market be taken, cement industries. In such cases the careful study of competitive behavior over time is of particular importance in the determination of the dividing line and of the functional differentiation between the two segments.

Finally, the generation of bilateral market segmentation is sometimes stimulated in part from outside the given industry. One example is the work of promoters or investment houses, as in the case of the earlier history of the automobile and many other industries. Again, fabricating concerns in related industries may diversify their investments. Such concerns are likely to be large and to contribute significantly to the formation of the leading core in the industry which they penetrate. Cases in point are the mechanical refrigerator and synthetic rubber industries. In the glass container industry we have the special case of a patent-holding company being the primary vehicle, along with a dominant producer, for the creation of a favored few firms on the one hand, and a numerous group of subordinate competitors on the other.

The evidence from the case studies seems to show that, in the main, the presence of a class of smaller independents is likely to be a source of disruption with respect to the actual or attempted establishment of a policy of controlled competition. This destabilizing influence appears to be operative generally and typically at all stages of market evolution in the case of small firms; whereas, it was for the most part, only in the less advanced stages of market growth, and/or periods of rapid market growth, that the large concerns tended to follow policies vigorously disruptive of established market patterns. This historical aspect is all-important because it indicates that the peculiarly destabilizing role of the small-enterprise sector, as distinguished



from the leaders, stands out clearly only *in the more advanced stages of development* of an industry, when such role is performed in the hostile setting of stabilization efforts by the leaders.

It may be presumed that the characteristic histories of particular markets, between about 1875 and the present, reflect structural changes in general economic history, although this is not under examination here.

The essential criterion of disruption is persistent independent effort to change the distribution of business among the firms in an industry. There is no particular competitive technique, policy or type of behavior, however, on which it might be said that the small firm has any special claim.

In generalizing the evidence in the case studies of the destabilizing influence of the small-firm sector, the most significant data must be drawn from more mature market conditions in which the large leading concerns have attempted to minimize competitive uncertainties by one means of control or another. This is so because the modern problems of the small competitor usually only develop in that stage of industrial evolution in which (1) inter-firm differentiation has already gone so far that the larger enterprises have acquired a stake in stabilization, and (2) stability appears to the large-firm group as possible only by measures and devices which constrain the smaller independents. Hence it is often possible to infer the existence of the disturbing influence of smaller independents from the efforts of the leading core to contain and control disruptively competitive forces in the market.

What are these disruptive forces? What do they threaten to upset? Certainly where the high state of flux associated with vigorous independent efforts by all to redistribute market shares is found, there is no "stability" (actual or attempted) to be undermined. But disruption has a different context where some group within the totality endeavors to pursue a common policy of control of the centrifugal tendencies in the market. We then have two policies: stabilization and disruption. The disturbance of stability, insofar as it comes from interfirm relations within the given market, may emanate from (1) the cooperating group, or (2) noncooperating "independents." For the present we ignore the former, recognizing that it is a very important factor in oligopolistic behavior. As for the second source of disturbance, there can be no doubt that its existence is a highly important consideration, perhaps the most important in the majority of cases, underlying a number of prevailing techniques of market control. Furthermore, it is necessary to recognize that such techniques, in industries having structures of the type treated here, are inaugurated, developed and applied primarily by the leading core of large firms.

Not all techniques of control reflect primarily the reaction of leading cores to the competitive potential of small firms: some are mainly measures for maintaining stable relations among the former. The techniques which imply particularly the disruptiveness of small enterprise, i.e., the tendency of

the latter through independent policies to redistribute market shares both within the small enterprise sector and between it and the oligopoly core, may be classified into two broad categories: (1) "the coercive activities of large enterprises—that is, those that are designed to destroy competitors or to discipline them through fear . . ." <sup>6</sup> and (2) certain among other forms of behavior usually associated with monopolized markets. <sup>7</sup>

As a final aspect, taken from general industrial evidence, of the "excessively competitive" character of the small-firm segment of industry, attention should be called to the apparently more flexible behavior of prices in non-concentrated industries, when total demand falls cyclically, than in concentrated industries. This phenomenon (aside from the extent to which it may be traced to oligopsony) may be related to the problem under consideration by three major assumptions. The first assumption is that "industry," when conceived as a single-product market, will give a correlation between concentration and price flexibility closely similar to that obtaining for an industry defined on the basis of other criteria, as in the present study, to include typically more than a single product. The second assumption is that in comparatively nonconcentrated industries, the policy of the small firm tends to dominate; and in concentrated industries, the policy of an oligopolistic core is likely to rule. The third assumption is that cyclically flexible prices represent a mode of business behavior at odds with the stabilization policies widely associated with oligopoly-dominated markets.

A clear formulation of the relationship appears in the *Structure of the American Economy*. <sup>8</sup>

. . . the dominant factor in making for depression insensitivity of prices is the administrative control over prices which results from the relatively small number of concerns dominating particular markets.

This hypothesis has, of course, been challenged, but the work of Gardiner Means and his followers nevertheless has thrown considerable light upon the comparative role of small and large enterprise.

Additional evidence of a different character is afforded by the body of accepted theory. So far as the small-firm sector of an industrial market is concerned, we may liken it in general to the structural features usually associated with workably competitive markets. Each producer holds a very small proportion of the total market and is surrounded by close-substitute producers. The member of the small-firm segment will be likely to consider his own demand function to be relatively elastic. He is not likely to consider the effect of his individual, short-run profit-maximising decisions upon his *smaller*

<sup>6</sup> Edwards, Corwin, *Maintaining Competition*, New York: McGraw-Hill, 1949, p. 157. Edwards' coercive practices include, e.g., preemption of facilities which are necessary to competitors, including bidding up of prices of materials to divert them from independents; exclusive-dealer contracts; exchange of technology and patent rights to the exclusion of smaller enterprises; localized price cutting by large concerns to drive out smaller producers; predatory price wars; squeezing the nonintegrated concern (through greater proportionate control at one stage of an industry than at another); and tying arrangements.

<sup>7</sup> E.g., trade association activities designed to control competition; price leadership systems; and delivered price systems.

<sup>8</sup> U.S., National Resources Committee, Part I, Wash.: June 1939, pp. 143 and Appendix 8.

*rivals*. In many industries of the type under analysis the small-firm fringe is quite numerous, “. . . the turnover of producing units is rapid, and . . . the rate of business mortality is high . . .”<sup>9</sup>

If it were possible to isolate the small-firm segment from the oligopoly core, we would expect its behavior to conform, therefore, to that appropriate to more or less atomistic markets. Such behavior would involve certain results, e.g., with respect to profits, rate of utilization of plant,<sup>10</sup> prices, and so on. Perhaps more important, it would be anticipated that the relative shares of the total market would be continually shifting among the different competitors. “If first one firm and then another gets the greatest share of business or the highest rate of profit, it is plain that competition is active.”<sup>11</sup> This process of perpetual sifting and winnowing of firms, in which some now forge ahead, now drop behind, so classically described by Marshall, is precisely the central characteristic of the small-firm sector that brings it into collision with those members of the industry which above all strive to prevent a redistribution of market shares between the two segments. The small firm behaves true to the form of its theoretical archetype when it strives to expand its business through its own independent actions.

With respect to what has been said in the case studies regarding the interests of the leading oligopoly core in market security and stabilization, formal oligopoly theory has much of interest to say, much that can only briefly be referred to here. In general, the theory recognizes that a given member of an oligopolistic group will tend to shun a redistribution of market shares, because its fellow oligopolists will in all likelihood retaliate. In the case of differentiated oligopoly (differentiated with respect to product, not industrial structure and policy), the reference may be to either price or product differentiation. “. . . advertising or product variation will be matched by rivals as surely as price cuts. . .”<sup>12</sup> Furthermore, “. . . to avoid change is by all odds the *simplest* way of maintaining the oligopolistic *entente* to which the seller is a party . . .”<sup>13</sup> And, “. . . the most elementary rule of behavior under oligopoly is to minimize the number of price changes and hence the number of times the understanding among oligopolists is put to a test . . .”<sup>14</sup> Hence, the theory indicates that where producers are few and large, the tendency will be toward the attempt to stabilize relative market shares over time. Although most writers devote themselves largely to price policy, the analysis may be readily extended to other aspects of business behavior which affect comparative market shares.

<sup>9</sup> U.S., Temporary National Economic Committee, *Competition and Monopoly in American Industry*, Monograph No. 21, Washington: 1940, p. 20.

<sup>10</sup> If competition in the sector is less than perfect, there may be some degree of excess capacity, but this question is unsettled. Cf. Kaldor, N., “Market Imperfection and Excess Capacity”, *Economica*, February, 1935.

<sup>11</sup> Tucker, R. S., “Concentration and Competition”, *Journal of Marketing*, April 1940, p. 358.

<sup>12</sup> Bain, J. S., *Pricing, Distribution and Employment*, op. cit., p. 201. The writer adds that such retaliation will take place “. . . less easily, less quickly, and less certainly . . .” however.

<sup>13</sup> Galbraith, J. K., “Monopoly and the Concentration of Economic Power,” in *A Survey of Contemporary Economics*, Philadelphia: Blakiston, 1948, p. 113.

<sup>14</sup> Ibid.

We are not concerned here, however, with markets where sellers are few and large, all of which implicitly have significant shares of the total volume of business. Our main interest is with markets in which there is an oligopolistic core, surrounded by a small-firm group more or less sharply differentiated in size from the members of the core. Certainly the small-enterprise sector is not to be excluded from the theory, if for no other reason than its influence upon the interfirm relations of the oligopolists.

What may be expected regarding the relations of the oligopoly core to the small-firm segment, if we draw upon the existing body of oligopoly theory? In general, the empirical study of industry suggests that the small-company sector may be considered as a single bloc of potential competition by the oligopoly core taken as a group. As in the case of member oligopolists, the leading core therefore must estimate the effect of its formal or tacit collective policies upon the small-enterprise sector considered as a totality. The former have both a community of interest and often the necessary resources to reduce the competitive potential of the latter to comparative impotency and then to maintain it in such status.<sup>15</sup> The oligopoly core may be expected to act in formal or tacit concert to keep the small-enterprise group individually and collectively subdued, for net shifts in the distribution of total output in favor of the small-firm sector are a threat to each and all of the members of the core. An illustration of the individualized attention that may be given to the smaller companies is found in the gasoline industry, where in 1935 and 1936 the leading core of majors adopted a plan to maintain gasoline spot prices in ten Midwestern states. "Each of them selected an independent refiner as a 'dancing partner' and assumed responsibility for his 'surplus' output . . ."<sup>16</sup> In the case of controls under the ethyl-compound contracts in the same industry, 11,000 jobbers were kept in line with respect to price policy.<sup>17</sup>

However, the location of the equilibrium distribution of market shares between the leading core and the small-company group is in most cases indeterminate. It can only be in cases of an extreme development of controls by the former, such as in the glass container industry, that the equilibrium distribution may be fairly determinate and stable for a time. Otherwise, in the general case, there is likely to be continual sporadic outbreaks upsetting a given established pattern in the relations between the two groups. Furthermore, where entry is effectively open, there may always be new additions to the small-firm sector which disturb the status quo by virtue of their individual innovations or the resulting gradual increment to the small-firm share.<sup>18</sup>

<sup>15</sup> In the terminology of a recent writer, the oligopoly core attempts to "insulate" itself in this manner so as to reduce the capacity of any member of the small-firm segment, or of the segment as a whole to "penetrate" the share of the market held by the leading core (cf. Papandreou, A.G., "Market Structure and Monopoly Power", *American Economic Review*, Vol. XXXIX (Sept., 1949), pp. 890 ff.).

<sup>16</sup> TNEC Mon. No. 21, op. cit., p. 136.

<sup>17</sup> Ibid., p. 161.

<sup>18</sup> The rise of Sylvania Electric in the incandescent lamp industry is a good illustration.

On the other hand, if we further extend present oligopoly doctrine to the relations between the two segments, the matter may be looked at from the perspective of the small-firm group.<sup>19</sup> They must consider the effect of their actions upon the leading oligopoly group. If they do so, they act, through their consensus, as an oligopolist; and hence they will tend to embrace the stabilization policies which may obtain in the industry. However, it has been argued above that they do not act as oligopolists typically. They are not basically inclined to collaborate because of a fear of retaliation, as in a single oligopoly enterprise. The reason for this has been suggested above as residing primarily in the condition that the members of this group are small in size and comparatively numerous. They must be forced, again and again, to recognize the retaliatory power of the industry leaders. They are, perhaps, deceiving themselves, because of their own individually negligible position in the market, into thinking their actions will be overlooked in the general competitive hustle and bustle. Hence they must be repeatedly "coordinated" and chastised into acceptance of more "cooperative forms of competition."

To the extent that the small-firm group acts at times like a single oligopolist, and cooperates, is due partly to the (apparently typical) presence of a minority which is in itself stabilization-minded. This element may be motivated by fear or the hope of gaining from the protective cover of a program of market control. But in any case, it is no doubt responsible to an important degree for the appearance of solidarity between the large- and the small-firm sectors.

The extension of formal oligopoly doctrine to the present area of problems therefore indicates:

(1) The leading core in industries of the type treated herein tends to embrace stabilization because the members of the core take into consideration the possible retaliatory actions of rivals, and are likely to be highly skeptical regarding possible gains from attempts to redistribute market shares among themselves. It has been suggested by one writer that the various types of nonprice competition are for the most part the necessary means of allowing some flexibility of response to changes in market circumstances in order that established prices and basic positions in the industry are not surrendered.<sup>20</sup>

(2) The leading core may be expected to act collectively with respect to attempts from elements within the small-firm segment to reduce the relative share of any of their number. The leaders will retaliate. In the longer period it will behoove the oligopoly core, if possible, by vigorous price and by nonprice competition, by acquisition of smaller profitable concerns, by the buying up of idle plant, and by other means, to reduce the segment of lesser enterprises to what it considers manageable proportions.

<sup>19</sup> "Perspective of the small-firm group"—conceived as a consensus of the bulk of the group.

<sup>20</sup> Rothschild, K.W., "Price Theory and Oligopoly," *Economic Journal*, vol. LVII, No. 227, September, 1947, p. 312.

(3) The object of this gradual reduction process is to put the small-firm segment into the position where it will itself behave like an oligopolist and develop a business consensus which considers first of all the possible retaliation from the leaders (or absence of certain gains of stabilization) resultant from any serious effort by the members of the segment to redistribute market shares in its favor. Such is the result in some markets, where the power and cohesion of the leading core is great enough to bring about for protracted periods the incorporation of the small-firm segment into its pattern of stabilization for the industry.

(4) In what is probably the majority of our industrial markets, however, the small size and considerable numbers of firms still to be found in the small-enterprise segments makes for centrifugal business policies. The atomistic character of this sector of the total industry means that the objective conditions for oligopoly behavior are in general lacking. Thus, we adapt the basic classification suggested by Machlup: the small-firm sector tends to be heedless of rivals' reactions; the leading core tends to be conscious of rivals' reactions.<sup>21</sup> The former is consequently anti-stabilization. Even though the small-enterprise sector does not account for a critical percentage of total output (capacity, assets, etc.), it may be able still to influence market results in a direction quite different from those designed by the stability-minded forces in the industry. The cleavage in policy involved in this probably typical case makes for continual intergroup conflict.

The main task of summarizing and briefly examining the central working hypothesis is almost completed. There remain only two comments. The first is that it is impossible to overemphasize the necessity to consider the stage of development of the given industry in order to assess properly the behavior of the two market segments. The second point is that the central hypothesis naturally requires various qualifications and acknowledgments of exceptions. Chief among these factors are the following four: (1) a middle group of medium-sized firms and a blurring of the sharp bilateral cleavage regarding business policy which has been our central focus; (2) lack of homogeneity of size and policy within the small-firm sector; (3) lack of complete homogeneity of policy regarding stabilization within the oligopoly leadership; and (4) neglect of the influence on our problem of centralization of market controls, through financial institutions and other indirect intercorporate devices (a factor which supports the central hypothesis).

Summarizing—the review of the relations between the leading cores and the policy of industrial stabilization, the case studies, the stabilization movement as an historic phenomenon, various typical patterns of behavior in oligopolistic markets, and formal oligopoly doctrine, all seem to bear out, with

<sup>21</sup> Machlup, F., "Monopoly and Competition: A Classification of Market Positions", *American Economic Review*, vol. XXVII (September, 1937), pp. 445-51. Cf. also, Abramovitz, M., "Monopolistic Selling in a Changing Economy," *Quarterly Journal of Economics*, vol. LII (February, 1938), pp. 199-200, fnnt. 1.

some exceptions, the hypothesis that oligopoly and industrial stabilization efforts go hand in hand. The same evidence also seems to indicate that such efforts bring the oligopoly cores into conflict with the non-oligopolistic sectors of their particular markets. This conflict gives us a variety of possible end-result patterns which may however be broadly classified into three categories: (1) the most typical case, wherein the quasi-atomistic behavior of the small firms continues to disturb, undermine and divert the stabilization policies of the leaders; (2) the frequently-occurring but minority case, wherein the small-enterprise segment generally follows the leadership of the dominant core in pursuit of aims designed to stabilize competitive conditions; and (3) the mixed case, wherein the policies of the lesser enterprises may be approximately equally divided between cooperation with the aims of stabilization and resistance to such aims.

## 2. FUNCTIONAL CHARACTERISTICS OF SMALL BUSINESS

It will be recalled that in the introductory chapter and throughout the case studies it was stated that a functional approach and not merely a size concept, would be used in the present investigation. The term "functional" in this context refers to the changing competitive status of the small-firm group with respect primarily to the leading core. It is concerned with answering the question: What economic role does the former execute in its relation with the latter, and how is a "problem" generated out of these relations? As one group of writers has put the matter, "the important consideration is not the precise boundary that divides small companies from larger companies, but rather the comparative positions of smaller and larger companies . . ." <sup>22</sup>

Three major reasons for the superiority of the functional approach now seem to have emerged: (1) it is quite meaningless to construct a category of small enterprise purely on an absolute size basis; (2) consideration of functional relations removes much of the arbitrariness of size classifications; and (3) only such an approach can be adequately related to what is already known about business policy, and thus in turn related to problems of public policy.

The contributions of the case studies to an understanding of the characteristics of small enterprise through the use of a functional approach have been, we hope, substantial. It is these contributions, which at the same time also give shape to certain of the "problems" of small business.

What are some of the major elements entering into a composite descriptive picture which may be gleaned from the case studies? A suggested list is, briefly, as follows:

(1) Small enterprise may be differentiated from other enterprises in regard to its heavier reliance upon local sources of supplies of materials. It is therefore also relatively more limited in its techniques and channels of procurement. (E.g., butter, flour.)

<sup>22</sup> Butters, J. K., and Lintner, J., *The Effect of Federal Taxes on Growing Enterprises*, Boston: Harvard University Press, 1946, p. 9.

(2) Small enterprise is differentiated from others in that it seems to have higher total unit costs of production, i.e., it is less efficient in terms of this criterion of efficiency. It is likely to have technically inferior equipment, a fact which may partly account for higher costs. (Such as the smallest creameries in the butter industry; the smallest millers in the flour industry.)

(3) Small manufacturing enterprise must, because it is limited to performing specialized fabrication work and also has limited resources, surrender the often very strategic function of marketing to other larger concerns, many of whom may at the same time be its competitors in the fabrication stage. (E.g., in butter and flour.)

(4) Small enterprise is that type which, in an industry enjoying foreign business, either does not participate in such business, or receives a smaller share of it than it does of domestic sales. (E.g., as in flour and automobile.)

(5) In industries where sales promotion is an important competitive factor, the small concern is that which must turn increasingly to more restricted market areas, since national and regional markets tend to be more responsive to the selling efforts of the larger enterprises. (E.g., butter, except for cooperative selling organizations; and flour.)

(6) The small firm is typically differentiated from the large in that it is (a) a one-plant firm (like butter, flour, glass container), and (b) a single-product or few-product firm (all four industries studied).

(7) Small enterprise has a smaller life-span than the leaders in an industry. It has higher mortality rates than the large-firm segment. (As seen in butter, flour, and glass container.) Discontinuance of firm identity through acquisition by large enterprises is a characteristic pattern of evolution in the case of small business.

(8) Small enterprise in modern industry encounters special obstacles to entry, due in important degree to the existence of industrial oligopoly and the advantage of the large firms usually comprising such oligopoly. (E.g., in automobile and glass container.)

(9) Small enterprise is often dependent enterprise, i.e., it surrenders part of its power to make independent decisions to large concerns, some of which may be its competitors. (All four industries studied.)<sup>23</sup>

(10) On the other hand, small enterprise, as indicated at length above, is independent enterprise in the sense that it typically acts without allowance for the effect of its actions upon rivals; it does not permit such considerations to prevent it from striving to increase its share of the market. (Butter, flour, and glass container.) Hence,

(11) Small enterprise is that segment of the typical industrial market which actually or potentially disrupts policies of stabilization fostered by the

<sup>23</sup> In the case of the automobile, dependency was not found in the industry proper, but exists in the ancillary supplying industries and in distribution.



leading core. (Flour and glass container.) Where nonprice competition prevails, small enterprise is the chief representative of price competition; e.g., where there is price leadership, it is small enterprise which is "led."

(12) Small businesses are, in the secular period and taken as a group, the least profitable firms as compared with the leading core taken as a group. This point was touched upon in the introductory chapter, and the case studies are consistent with such a conclusion. (Flour, automobile, and glass container.)

These twelve relationships found in one or more of the case studies give concrete shape to the bare size concept of small business. All of them are of course not necessarily present in one industry—it would be extraordinary if they were. But a substantial proportion of the points, taken collectively, should provide a helpful outline of the chief descriptive features of small enterprise.

### 3. SURVIVAL OF THE SMALL MANUFACTURER

The question may be raised at this juncture, in view of the great disadvantages suffered by the smaller manufacturers, as indicated in the present analysis, how is it that small enterprise continues to survive and to remain a more or less dynamic factor in our industrial markets? A partial answer has been suggested in the points above on qualifications of the central hypothesis, as well as in the various mitigating influences noted at numerous points throughout the investigation. Certain other factors may be mentioned.

Alfred Marshall forecast that economies of scale, if widely applicable to any given manufacturing field, were a powerful factor in favor of the large concern. In lines where specialized machinery and conveyor techniques may be used, the small capitalist is "threatened with extinction." This leaves certain related areas still open to the "strong man with slender means," however. And if, as Marshall assumed, affected industries are still expanding, then these related areas of small enterprise will themselves offer increasing opportunities. There are four such industries, but mainly two: (1) production of a single component of a complex commodity or at a single stage in the fabrication of such commodity. This allows for rationalization of the productive process to some extent by the small concern which manufactures the component, thus permitting internal economies. Marshall recognizes, however, that "such a man may indeed find that the markets in which he looks to buy his material or to sell his products, are controlled to his prejudice by a monopolistic combination in stages of production below his, or above his . . ." <sup>24</sup>

This is an acknowledgment of a relation similar to what we have called "dependent enterprise." On the other hand, he is relieved of marketing expense "if the markets are free." (2) The second related area is preserved for the small firm by virtue of the fact that "although machinery may have

<sup>24</sup> *Industry and Trade* (3d ed.) London: MacMillan, 1921, p. 245.

been applied to what used to be the greater part of a process of production; yet the remainder is still done in the old way . . ."<sup>25</sup> So long as hand methods and the incomplete application of mechanized techniques still holds sway, the small producer may find a haven; and if the parent industry is expanding, investment opportunities there will even grow.

But these conclusions do not apply generally to marketing, chiefly because of the growth of advertising, of branded articles, savings in purchasing, elimination of middleman expenses, and superior service to the consumer.<sup>26</sup>

The other two "small-business industries" may be especially available to the lesser entrepreneur, according to Marshall. These are: (3) various specialty lines requiring much skilled labor and often using semifinished materials bought from industries in which large concerns dominate, and (4) industries in process of taking over or competing directly with household work, e.g., dressmaking, baking, washing.<sup>27</sup>

P. Sargent Florence has pointed to an important set of factors protecting the existence of the smaller manufacturer. These he subsumes under the general heading of "vagaries of free production for free consumption." The consumer demands variety of products, requiring production on small unecological scales; and the search for variety tends to feed on itself, leading the consumer "to turn from one sort to another, thus perpetuating the small scale of production."<sup>28</sup>

Florence also refers to certain restrictions on the size of markets or sources of supply which tend to perpetuate the small plant, or even the small firm. The restrictions include cases in which materials or markets are widely dispersed, and transport difficult or expensive; extraction or rendering of a service is direct at some fixed site; or demand or supply are not uniform or continuous.<sup>29</sup>

These factors are quite similar to those pointed out by many other writers.

Emphasis on non-homogeneity of the product has also been placed by Steindl in attempting to explain the survival of the small enterprise in manufacturing.<sup>30</sup> The presence of this and other elements making for market imperfection is mentioned as of major importance, in addition to (2) the pace of accumulation of capital (pressing for investment outlets) by the bigger firms in the same or closely-related industries, (3) the desire of dominant oligopolies to maintain a fringe of small "competitors" as a facade, and (4) the desire of petty entrepreneurs to be their own master or to use business as a means of employment for themselves and their families.<sup>31</sup>

<sup>25</sup> Ibid., pp. 246-48. P. Sargent Florence reminds us that "many of the small plants that exist at any one time have survived from days when small plants were necessitated by the restrictions of markets and sources of supply due to less efficient conditions of transport, communication, and technique generally." (*Logic of Industrial Organization*, London: Kegan, Paul, 1933, p. 47).

<sup>26</sup> Ibid., pp. 249; 297-99; 300-07. His discussion refers largely to the marketing of consumer goods.

<sup>27</sup> Ibid., pp. 246, 248.

<sup>28</sup> *Logic of Industrial Organization*, op cit., p. 61.

<sup>29</sup> Ibid., p. 44.

<sup>30</sup> Op. cit., pp. 59-60.

<sup>31</sup> Ibid., pp. 59-61.

Steindl argues that imperfect competition tends at some points to counterbalance the advantages of internal economies enjoyed by large concerns. The latter tend to encounter lower prices, greater sales cost per unit, greater unit cost due to a smaller degree of capacity use, and additional costs due to "the production of several lines in one plant or by one firm (multiproduct firm)." <sup>32</sup>

The matter of small business survival through enlisting the aid of the government has been referred to by some writers.<sup>33</sup> However, adequate treatment of this question has been deliberately excluded from the scope of the present work.

What does the study of small enterprise in butter, flour, automobiles, and glass containers reveal regarding factors working for survival? What are the qualitative (competitive) aspects of the continued presence of varying numbers of small firms? Are the survival factors obtaining in these four industries also the same ones generally found in other industries?

Although the creamery butter industry was the only one of the four analyzed which failed to show an absolute decline in numbers of firms in the secular period, it probably should not be inferred that numerical persistence is unimportant in manufacturing. Why is this so?

The central requirement of the "new competition"—stabilization—can be met in either of two ways. The structure of the industry may be reshaped so that the end result is a leading core with a small number of lesser concerns whose tendency to disrupt established patterns is fairly readily controllable. Such is the condition in the well-known oligopolies. On the other hand, various factors may operate to sustain a large class of lesser enterprises alongside a group of leaders.

Most discussions of survival power overlook the entry aspect. This is important nevertheless, for only where easy entry is possible can survival power be adequately discovered. This points to two different conditions in which it is possible to speak of the persistence of small enterprise in an industry: (1) where effective entry is closed but a number of small concerns continue for many years to occupy a place in the market, i.e., exhibit what has been called above "staying power." The independents in the glass containers industry illustrate this. (2) The second type of survival is that in which ownership in the small-firm segment is continually turning over, with new entrepreneurs entering with fresh capital, either constructing new plant facilities or taking over old capacity. This condition is found to varying degrees in the small-firm segment in creamery butter, cotton textiles, lumber products, cement, and a number of other industries. Obviously, although the conditions of business entry are not significant for the first type of survival power, they are important if there is to be turnover survival, for without

<sup>32</sup> Ibid., p. 18. On the last named point, he quoted P. Sargent Florence, *Logic of Industrial Organization*, op. cit., p. 26.

<sup>33</sup> E.g., Kaplan, *Small Business*, op. cit., pp. 217-18.

relatively free entry the absence of staying power will result in a continued excess of egress over ingress. The flour milling industry illustrates the mixed case, in which entry conditions have not remained open enough to compensate for the weak staying power of smaller established concerns, so that there is a net reduction in the number of enterprises.

With regard to the matter of market imperfection, it is apparent that as a factor strengthening the survival power of smaller business it is subject to serious qualification. Students of the problem appear to disagree among themselves. Whereas Thorp and Steindl argue that non-standardized products are a haven of the small firm, Clair Wilcox, along with much traditional theorizing, alleges that commodities which cannot be identified with their producers are likely to be produced by many sellers.

One generalization, stressed by Steindl, seems entirely valid. This is that imperfect mobility in the labor market does typically contribute to the survival of the small enterprise. It is known that small business enjoys less labor organization even in urban centers, and cheaper labor in rural areas where such enterprise is very often located. The latter was shown to be a factor in the case of flour milling. It has been a major element protecting the existence of the smaller Southern cotton textile mill.<sup>34</sup> Of course, the potency of this factor is a function of the relative importance of labor costs in the total.

As for product differentiation due to location factors, and/or transport costs, this is probably on balance a positive force for survival, particularly where the product is so heavy that the industry becomes semiregionalized, as in steel, cement or petroleum. However, ownership and control spread without any of the serious impedimenta affecting the movement of commodities from producer to consumer; the multiplant concern is able to carry competition to the remote corners of markets thought to be regionally segregated. Such type of expansion has been notable in the case of the growth of National Dairy Products Corp., and the Borden Co.<sup>35</sup> It is also found, e.g., in the spread of U. S. Steel's interests in the cement industry.<sup>36</sup> Such was the evolution in flour milling, and this is true to some degree in the butter industry.

It is undeniable that this process requires time, as the persistence of the soft winter wheat mill in the Southeast attests. Hence, market imperfections due to location and transportation factors may for a time shield the smaller competitor. In the petroleum industry smaller refineries, typically located far from the larger consuming centers, have a definite advantage in many local markets, although this advantage limits their ultimate expansion and is greatly dependent upon the source of supply of crude.

Product differentiation due to sales promotion, on the other hand, can be a vital competitive weapon making for a distinctive superiority on the part

<sup>34</sup> On the other hand, in some industries the largest concerns have deliberately located in small communities, notably rayon.

<sup>35</sup> U.S., Federal Trade Commission, *Summary Report on the Merger Movement*, Washington: 1948, pp. 37-38.

<sup>36</sup> *Ibid.*, p. 75.

of the larger enterprises. It is doubtful that the small seller can hide behind a relatively small sales promotion outlay (directed perhaps at a local or regional market), and expect to affix his customers to him in the face of the competition of national advertisers in the same market.

These conditions are modified favorably to the small firm, however, to the extent that it may secure some segregation of its own product-market by sales promotion rather than by completely foregoing the expenditure of any funds on differentiation of its product. Within this range of the problem it may be said to receive some gains from differentiation, plus the comparative advantage of a smaller unit outlay for sales promotion than is indulged in by its larger competitor. Thus it "splits the difference" and gives itself to some extent a sheltered market.

It may be concluded, therefore, that product differentiation is a competitive weapon which is probably at least as useful to the large as to the small firm. However, a more exact appraisal of the advantages and disadvantages of product differentiation, to large as contrasted with small enterprise, does not seem possible at present on the basis of the information available.

A further general point in the theory of small-firm survival is mentioned by Steindl. He argues that in industries having a leading oligopolistic group there is (1) no competitive compulsion to eliminate *all* the small firms, since if stabilization is desired it can be attained as well with a comparatively negligible small-firm fringe as without it; and (2) for political reasons, especially in the hostile legal setting within which American industry operates, it is judicious to maintain the fringe.<sup>37</sup>

Evidence on such a point is difficult to secure, but it would be hard to take issue with the point. Strategy in maintaining a group of smaller producers was made explicit in the glass container case study. As a general policy in industry it is referred to by J. M. Clark.<sup>38</sup> More recent trends in the thinking of the Supreme Court, as represented in the Alcoa case,<sup>39</sup> are likely to reinforce the consciousness of business policy makers that too-high concentration may be legally dangerous. This conclusion is strengthened by the apparent continuing hostility of the public toward the concentration of economic power.

It may be concluded that where the small-firm fringe has been reduced to a comparatively negligible market influence it may survive for extended periods of time, and indeed that the leading concerns are likely to desire such continuance provided that the lesser enterprises refrain from competitive excesses. This is therefore a condition for small-firm survival.

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<sup>37</sup> *Op. cit.*, p. 60.

<sup>38</sup> *Economics of Overhead Costs*, *op. cit.*, p. 440.

<sup>39</sup> *U.S. vs Aluminum Co. of America*, 322 U.S. 716, 1945.

#### 4. CONCLUSION

Our purpose in this chapter has been to synthesize and generalize the results of the case studies, and to test these results in the light of other available industrial evidence and theory, in order to appraise the significance and validity of the central hypothesis regarding the competitive problems of small enterprise. It has been found that this evidence does provide an empirical foundation for the working hypothesis. By pointing the direction to be taken in laying a basis for the theory of small enterprise, the case studies justified themselves; and by suggesting that certain relationships were strategic, the case studies also pointed to specific major problem areas of small business in the manufacturing industries.

It is not to be inferred that the theory posited here makes any attempt to be either exhaustive or final; this has been reiterated in the course of the discussion. Moreover, the generalizations arrived at, like all such in social and economic theorizing, are subject to modification and correction to allow for the numerous cases which fall outside their province. Given the infinite complexity and variety of our industrial life, this could not be otherwise. Nevertheless, as tentative generalizations they appear to have sufficient validity to warrant further investigation along the lines which they suggest.

The burden of the results achieved in the study may be stated simply enough. The theory of small business needs to be integrated with the theory of oligopoly. In markets of the type treated, the small enterprise appears to carry with it certain competitive drawbacks which ordinary conditions in such markets tend to accentuate rather than alleviate. The well-recognized market type, oligopolistic core with a fringe of smaller competitors, is thus much more than a mere structural classification. The small firm operates in a context such that its market opportunity is rather rigorously proscribed, largely by virtue of the superior competitive positions typically enjoyed by its larger rivals. Its access to the market, as well as to a range of alternatives within the market, is inhibited by the latter condition. Its problems are in a sense unique because of this differential status. The major endeavor of the present investigation, aside from the vital task of definition, has been to establish, first, the fact of this differential status; second, the nature of it; and third, some of the various forms assumed by such differentiation. Any measures of public or private policy designed to protect the small enterprise against the adverse effects of its differential disadvantages will have to take into consideration all three of these matters.

Finally, attention should be called to the fact that many of the problems emanating from the group interrelationships between large and small rivals tend to be accentuated under conditions of constant or declining total market demand. Much progress might therefore be made toward alleviation of such problems if it were possible to maintain a civilian economy with a high and rising level of total national output.

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