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PART TWO

Areas of Research in the Behavior of Textile Prices

THE foregoing survey of the price and market structure of the textile industries provides the reference points from which to chart the field for price research in these industries. One might begin with individual markets for particular products, but the vast number of different markets in the textile industries precludes more than passing recognition in this report of the need and significance of thoroughgoing, intensive studies of particular markets. Those interested in this phase of price research in the textile industries will find suggestions as to both markets and phenomena worthy of observation in them below in the section on How Prices are made in Typical Textile Markets.

Beyond the study of particular markets lie the fruits borne of comparing and contrasting price relationships in several markets. Many of the questions research is called upon to answer about price behavior involve inter-market action. Consequently it has seemed desirable to draw this 'chart' of the field for textile price research primarily in functional terms rather than in terms of market areas. Altogether nine 'areas' of study are outlined in this report.

Prices and Buying Movements

Prices and Fiber and Product Substitution

Prices and Costs

Prices and Capacity
Prices and Marketing Methods
Prices and Industrial Organization
Prices and the Business Cycle
How Prices are made in Typical Textile Markets
Improvement of the Price Record

Because of their natural overlapping the delineation of these fields has presented numerous problems. Effective discussion requires that each major price relationship be treated separately. It did not prove feasible, however, to arrange the topics themselves in any set pattern. Both supply and demand aspects and vertical and horizontal relationships were tried as bases of classification, but with unsatisfactory results. Perhaps the best that can be said for the outline is that it seemed to the Committee to minimize overlapping and to point up significant problems better than any alternatives that suggested themselves.

This portion of the report, as remarked in the Preface, is designed to aid in planning economic research in the textile industries, not to present a program of research, or to offer a series of full-fledged projects ready for immediate application. In justification of the emphasis upon price relationships it may be pointed out that price behavior tends to be the 'common denominator' of economic life under our present economy. Furthermore, the very nature of the price system, extending as it does into every sphere of economic activity, may well mean that some of the most illuminating findings concerning general economic behavior in the textile industries may come as 'byproducts' of price studies; similarly, important data on prices may come from studies conducted for quite different objectives.

To repeat, it has been the aim of the Committee in discussing these topics to suggest what needs to be known, not how it is to be discovered. It is the task of others to turn these suggestions into projects. Whether a particular topic should provide one or a series of projects will depend largely upon the enthusiasm, ability, and resources at the command of those undertaking the investigation.

PRICES AND BUYING MOVEMENTS

A study of the relation of textile prices to buying movements would help to explain the extent of economic fluctuations and the factors that make for miscalculation in textile production. Since the textile industries are characteristically not integrated but have several consecutive levels of production under separate ownership, purchases by retailers in anticipation of consumers' buying seasons must be preceded by a series of purchases and sales at preceding stages of production which give rise to a series of vertically related production and trade cycles.

The regular consumer buying seasons such as Christmas, January white sales, Easter, 'back-to-school', have a fair counterpart in the buying operations of retailers although some purchases by the latter are made on a 'day-to-day' fill-in basis. Cutters and converters also may cover part of their seasonal requirements at more or less definite periods based upon the advance commitments of retailers, but there is more tendency on their part to relate their purchases to the technical position of the cloth and fiber markets. Such operations involve the placing of large orders only when conditions indicate that a rise in fiber and cloth prices is imminent, or that a shortage of goods may develop for wanted deliveries. Weavers, knitters, and spinners are also accustomed to time their own buying operations by the technical position of the fiber markets.

Let us review briefly what occurs during an ordinary buying movement or period of advance covering. At the start, gray and finished cloth prices tend to be weak, with little actual buying. Possibly the trade may have waited longer than usual to cover its requirements. Then suddenly inquiries begin to come into the market, frequently from larger operators. Large amounts of goods may quietly change hands. Prices become firm. Others who have been holding off suddenly realize that they have overstayed the market and, since they have to have goods, try to cover at once. Prices firm up still more and deliveries grow scarce.

Usually at this point the seasonal requirements of the trade will have been met and buying will practically cease except for reorders and day-to-day fill-in business.

At times, however, as in fall 1936, an unusual combination of circumstances will bring about a veritable tidal wave of buying. Such a demand is essentially speculative in the sense that it is not related to nearby operations but is inspired by a fear of rapidly rising prices, or a shortage of goods, or both. These abnormal covering movements on the part of the trade may be short-lived or they may go to the wildest excesses, generating increasing vitality as rising prices add to the lure of profits and create a continually greater apparent shortage of goods. Actually, of course, what is happening is that consumer demand is being anticipated, since all the goods bought in these movements must still be sold to consumers. Eventually a point is reached at which buying falls off. With no demand to support the market, prices slide off and remain weak with only day-to-day fill-in orders being placed until accumulated demand generates the next buying movement.

QUESTIONS THAT NEED TO BE ANSWERED ABOUT BUYING MOVEMENTS

Although textile buying movements are a basic characteristic of textile distribution, little if any definite information exists as to what actually takes place. There is great need both on behalf of management and of students of consumer goods industries generally for further light on such questions as the following:

1 Origin and Importance

a) To what extent are buying movements general throughout the textile markets? Do they seem to be stimulated by the same forces or do buying movements sometimes occur in certain lines wholly independent of conditions in other markets?

b) What differences, if any, exist between the timing, duration, and extent of buying movements in different markets? Do prices in the markets exhibit similar patterns?

Some observers say only to the extent that a common fiber is used. Is this always true?

c) What proportion of the total requirements of a market during a season or year are purchased during these buying periods as compared with week-to-week purchases? What influence does distinct seasonal use have upon trade buying, as in the case of blankets? What, over a period of years, is the relation of forward buying to week-to-week purchases?

d) Out of what conditions do buying movements become largely speculative in character? Does this frequently happen when 'shelves are bare' in wholesale houses and stores? Or only when general economic conditions are favorable, such as a broad speculative trend or rising consumer income? What part do fiber prices play? Is a period of declining or weak prices in the primary markets an essential prelude?

2 Prices and Sales Volume

a) Which usually react first in a buying movement, sales or prices? How long and how rapidly may sales increase without affecting prices? Do sales sometimes rise while prices decline?

b) Conversely, how long and how rapidly may prices rise without diminishing the rate of increase in sales? In what way is the relation between prices and sales affected by retail price lines? In apparel fabrics, e.g., some believe that sales will fall as soon as the price of a fabric reaches the point at which the garments in which it is used would have to be sold in a higher retail bracket.

c) About what proportion of the goods changing hands during a buying movement are bought at the 'low of the market' as compared with the higher quotations that prevail toward the end of the period? What is the distribution of buying between unassorted blanket orders and assorted orders? To what extent does the proportion of assorted orders vary from one market to another and from one product to another? In other words, how does the 'time' distribution of buying compare with the 'time' distribution of prices? Do these distributions vary as between an ordinary and a 'speculative' buying movement?

d) To what extent is it possible to determine whether a buying movement is 'speculative' or not before it has run

its course? Does the volume of assorted orders vs. volume without assortments afford any clue?

e) Are there signs that may indicate when trade buying is reaching the point where it will not be supported by future consumer purchases?

3 Prices and Inventories

a) What happens to inventories during a buying movement? To what extent do they change form, i. e., from 'raw materials' to 'goods in process' to 'finished goods?' To what extent do they change ownership, that is, move from one market level to another?

b) Is there any apparent relation between the hands, and the form, in which inventories happen to accumulate and price behavior during an ordinary buying period? During a 'speculative' buying period?

c) Is there any evidence that consumers accumulate 'inventories' beyond immediate needs?

4 Influence of Large Buyers and Sellers

a) What part do large purchasers play in the course of a buying movement? Large sellers? Are large purchasers more likely than small to secure most of their requirements before prices begin to rise rapidly? Do their purchases contribute substantially to such rises? It is reported in the trade that certain large distributors covered inadequately at the beginning of the 1936-37 buying movement only to come in several months later to buy in such volume that many mills were led to revise their earlier judgment that the whole movement was largely speculative and 'couldn't last'.

5 Aftermath

a) How long does the pessimism that accompanies the collapse of a buying movement tend to affect the tone of business? Relative to the position at the beginning and crest of the buying movement, how far may prices have to fall to stimulate market activity? After an ordinary period of buying? After a 'speculative' period?

b) What happens to 'day-to-day' fill-in business after the collapse of a buying period, particularly of the 'speculative' type? Is there any tendency for all purchasing to cease for a time? If so, with what effects?

c) On whom do the losses from the collapse tend to fall?

To what extent are profits made by any one during a 'speculative' buying period as a whole in view of the losses that follow in its wake?

6 Stabilization

a) Are there any steps that can be taken to prevent ordinary buying movements from turning into 'speculative' buying periods?

b) Would it be practical for sellers to adopt more stringent policies and would they be effective? Many hold that they must sell to maintain 'goodwill' even though they know that contracts may have to be adjusted later. Yet a producer of denims in the 1936-37 buying movement did refuse orders he thought were speculative.

c) What protection does hedging afford the individual company? On raw material? On goods in process? On finished goods?

d) To what extent might more adequate statistical information minimize speculative activity during a buying movement? To what extent could statistical information avoid the miscalculation that comes from overstress on the significance of orders from unexpected sources?

PROBABLE RESEARCH REQUIREMENTS

One or several projects might be developed around the foregoing questions. A general study could probably cover most of the field outlined since many of the questions closely dovetail. Whether projects wide or restricted in scope were undertaken, however, it would probably be found desirable to limit attention to representative products in certain specific markets. Part One, dealing with the price and market structure of the textile and related industries and trades, will be found helpful in selecting both products and markets.

Of particular interest at this time would be an analysis of the buying extravaganza of 1936-37. Undoubtedly it would be less difficult to assemble information about this movement than any other. A study of price behavior during 1936-37, illuminating as it might be made, would still not exhaust the field of price and buying movement relation-

ships. Further work would be needed on earlier movements such as those during 1933-34 and 1926-28, if current movements are to be seen in perspective and the unusual factors in them discounted. In fact it would be highly desirable to compare the buying movements of the last decade with those which preceded the World War, particularly those under comparable conditions. Only by such study could one determine the extent to which the textile buying movement as it is known today is a product of the rise of mass distribution and associated large scale purchasing or whether many of the features regarded as peculiar to this generation might not characterize other periods of textile history.

Most of the information needed about price behavior during buying movements is not to be found in the publications or files of trade associations and government bureaus. It would have to be obtained from individual companies, partly in the form of interviews and partly in the form of statistics drawn from their records. Field work of this type is always expensive—it takes time and it requires a staff skilled in winning co-operation. How much time and money would be required would depend upon the number of products included and of buying movements covered. Field work at some market levels, particularly the retail and cutting-up levels where the collection and analysis of data would be much more difficult than at the mill level, would involve greater expenditures than at others.

PRICES AND FIBER AND PRODUCT SUBSTITUTION

The astounding growth of rayon consumption from a negligible quantity in the early 1920's to a position second only to cotton in this country has directed attention anew to competition among textile fibers and products. This is by no means the first time that a dramatic shift in demand from one fiber to another has aroused both trade and public concern over a condition always latent in the textile industries, namely the substitution of one fiber for another. In

early England this concern resulted in regulations designed to discourage the use of cotton fabrics in place of woolen. Today it has flowered in the so-called 'fiber identification' movement.

Substitution or alternative demand is not limited in the textile industries to the displacement of one fiber by another. Often as significant in its consequences is the competition between a particular fiber and the waste derived from it. A notable example is the use of reworked wool as a substitute for raw wool. Frequently two or more grades of the same fiber may be suitable for the same purpose and therefore actively competitive among themselves. Then too, different yarn or fabric constructions of the same fiber often encroach on one another's markets even to virtual displacement, as when gingham fabric gave way to percales and other cotton prints. Still another form of substitution that warrants consideration in this connection is that between a textile fiber and non-textile materials; for instance, the growing use of paper in place of cotton for such purposes as towels and bags.

Since substitute materials and products cover a wide range of situations in the textile industries, the opportunities for price research in this area can best be discussed in terms of each general type of situation, beginning with inter-fiber and including inter-grade, inter-construction, and fiber waste competition.

COMPETITION AMONG DIFFERENT FIBERS

There has been much discussion about inter-fiber competition in the textile markets, but little has been done to measure either its extent or its consequences. It is customary to compare trends in, say, cotton consumption with those in the consumption of other fibers such as rayon, wool, and jute, and on the basis of such comparison to draw conclusions about the extent to which cotton has replaced or has been replaced by other fibers. Likewise, the price differentials between the various fibers are considered and conclusions drawn about their incidence upon fiber competition.

Such a composite approach seems quite inadequate because it treats all fibers as if competitive for all uses. Most fibers compete with others for only a part of their uses. For example, its peculiar properties of absorption and resiliency make wool the ideal fiber for use in the manufacture of woven felts for papermaking. It has no competition at present in this particular use. Likewise, cotton has currently practically none in sheets and pillow cases. In contrast, for certain uses, as in dress goods, a great deal of competition exists among the fibers.

What seems to be needed, therefore, is a series of studies of particular situations in which two or more fibers have been in active competition for the same specific use. Several may be mentioned: silk vs. rayon in dress goods; spun rayon and cotton vs. wool in men's summer suitings; rayon vs. mohair and cotton in linings; cotton vs. jute for bagging. Furthermore the competitive situations in other periods should be studied as well as those of the current decade. The replacement of cotton hosiery by silk in the War era and the decline of cotton-wool men's wear fabrics in favor of all wool fabrics in the 1900's are examples of shifts in the use of fibers in earlier periods that deserve study.

In every case of inter-fiber competition there will undoubtedly be unusual features requiring special consideration, but in general attention should be directed to four objectives:

1) To what extent was one fiber actually substituted for another? Even if the consumption of one fiber increased relatively to that of the other, what evidence is there of displacement? Could the relative increase have been due wholly or in part to the widening of the market through tapping new demand?

2) What was the price relationship of the competing fibers? To what extent was there a price differential? How persistent? How important when translated into users' costs?

3) What role was played by consumers' choice? To what extent did the substitution originate at the retail counter and to what extent at prior market levels? Where consumers had

opportunity to choose, upon what basis were their decisions apparently made? To what degree were these decisions influenced by sales promotion? By the specific labeling of fiber content?

4) If substitution persisted for any length of time, were there any noticeable reactions in the price behavior of the fibers affected?

For the most part few or no data are readily available that will contribute materially to answering these questions in any particular case of inter-fiber competition. That largely explains why discussions of fiber substitution have been limited to a comparison of general price and consumption series. To make further progress it is essential that data be obtained directly from a particular market, including information from both buyers and sellers.

Changes in the relative positions of the various fibers being consumed in any market should not be accepted as conclusive evidence of substitution. The consumption of a given fiber may show little or no change when measured in pounds but an increase when measured in yards. Shifts from heavier to lighter weight fabrics and vice versa can render poundage data alone quite deceptive, especially over a period of years. Weight, of course, is important to the fiber producer and to all concerned with the raw fiber market, but yardage is more significant to those concerned with subsequent processes.

Even when yardage changes have been taken into account, an increase in the relative consumption of one fiber may not always mean that it is being substituted for those which compete with it. Rather an increase in relative consumption may indicate that a new demand level has been tapped. Perhaps a new technique in the manipulation of the fiber has given it new properties and thereby opened a wider field for its use. Perhaps its cost of production has been so reduced in comparison to that of other fibers that its price could be lowered, which stimulated buying. Thus inter-fiber competition is really a question of whether the

fiber showing the increase is cutting into the market the other fibers had or might have had, or whether it has widened its own market by tapping new demand.

COMPETITION AMONG DIFFERENT TYPES AND GRADES OF THE SAME FIBER

Just as one fiber competes with another for particular uses, so even more do the different types and grades of the same fiber compete among themselves. Medium wool may be used in place of fine; short staple cotton in place of long; 78 per cent seriplane silk in place of 92 per cent seriplane; 75 denier rayon in place of 150 denier. Although substitution among grades of the same fiber is common, it is by no means universal since for certain purposes a particular grade alone is suitable. Aside from this limitation, however, competition is usually quite rife among grades of the same fiber. What part do price differentials play in this competition? Upon what bases have such differentials been established? To what extent do they change with market activity? Are they influenced by style changes? By consumer choice? These and similar questions about the behavior of grade differentials are worthy of study in each of the major fiber fields.

In contrast to the paucity of data bearing on inter-fiber competition, many series relate to inter-grade competition. The reports of the Bureau of Agricultural Economics and the publications of the New York Cotton Exchange provide much information on the price behavior of various grades of cotton. The information on stocks and consumption of raw cotton by grades is less satisfactory but, with proper qualification, may be used. Turning to rayon and silk, one finds about the same situation as in cotton: fairly complete price data by grades but scattered information on stocks and consumption by grades. The picture is brighter in wool. For a considerable time the Bureau of Agricultural Economics has published the weekly range of wool prices on the Boston market by grades and lengths; the Bureau of the Census has published the monthly mill consumption of

wool by grades, and the stocks of wool held by dealers and manufacturers, by grades, at the end of each quarter.

COMPETITION AMONG DIFFERENT YARNS OR FABRICS OF THE SAME FIBER

Probably as prevalent as the competition among different grades of the same fiber is that among different yarns and fabrics of the same fiber. These yarn and fabric differences arise in the course of processing and may range all the way from those growing out of different treatment at each stage of manufacture, such as results in woolens and worsteds, to those growing out of different treatment at but one stage of manufacture, such as results in plain shades and prints. These are but two of the more widely known of the hundreds of cases of inter-fabric competition during recent years. Some should be studied with a view to discovering to what extent price played a major and a minor role in whatever displacement of one construction by the other may have occurred. Furthermore, the part played by consumer choice and the trend of fashion should be considered.

Material for a study of almost any case of the substitution of one yarn or fabric construction for another will have to be obtained from selected buyers and sellers in the market concerned. In a few instances, the Census of Manufactures gives information concerning production trends, and trade association reports on weekly or monthly changes in production. Even together, however, these two sets of data would in all probability have to be supplemented by interviews in the market, if not by the collection of original data. This would be especially true of price information. Trade journals could be used if standard gray yarn or standard fabric constructions were involved, but almost any other price series would have to be built up through first-hand contact with buyers or sellers in the market.

COMPETITION BETWEEN FIBER AND WASTES

In the processing of any textile fiber, wastes occur as by-products, and in the case of wool and rayon it has been

profitable to reclaim the fiber from the discarded garments and other goods into which they were originally made. What then is the relation of the price of the waste or reclaimed fiber to that of the fiber in its original state? Does the waste or reclaimed fiber tend to sell at a more or less constant differential under that of the original fiber? If variations occur, what accounts for them? To what extent is there a relation between the spread of waste and regular fiber prices and the volume of waste fibers that will be substituted? How effective is the limited supply of waste fibers in checking this substitution? Does it tend to narrow the spread as demand increases and thereby to check substitution?

Such questions need to be answered about cotton and cotton waste including linters, about woolen type wools and noils, about woolen type wools and reworked wools, about rayon staple and rayon waste, to name only a few instances of fiber and waste competition. Few data are available except quotations in the trade press. Most of the markets involved, however, are extremely localized, with Boston the market center for practically all textile wastes. Consequently, intensive field work among the dealers in that market, including both those handling the original fiber and those handling 'waste' fiber, should go a long way toward providing the requisite data.

COMPETITION BETWEEN TEXTILE AND NON-TEXTILE MATERIALS

As pointed out earlier, substitution may involve textile and non-textile products. The use of paper instead of cotton bags in the cement industry, of paper towels in offices and kitchens, and venetian instead of cotton shades are examples of the textile product being displaced by the non-textile. While these seem more frequent, there are instances of textile products displacing non-textile. One instance is the substitution of pyroxylin-coated fabrics for leather in handbags and similar articles.

Does price or cost play any part in these shifts from

textile to non-textile products or vice versa? On the basis of the shoe illustration it might be assumed that style was the essential factor. In the case of cement bags, it is said that cotton provides the cheapest container because it can be used for ten to twelve trips on the average, whereas the paper bag cannot be reused even once. Does price account for the use of the paper bag? Is the paper bag also more convenient? Do the users of cement prefer paper bags? Answers to questions like these will contribute to an understanding of why price or cost advantages may be offset by other considerations in the substitution of non-textile for textile products. Whoever undertakes this task will have to depend almost entirely upon contact with individual companies for data, and that means to a considerable extent with companies outside the textile industries.

Without doubt the textile markets afford a rich field for the study of rival or alternative demand, providing as they do cases involving both joint and independent supply; for example, cotton vs. cotton waste, and cotton vs. spun rayon; and both derived and direct demand, for example, cotton vs. paper cement bags and cotton vs. paper towels. Furthermore, the textile markets afford opportunity for evaluating the role played by consumer choice in product substitution as contrasted with trade choice. This is true of both products for which service life may be important, as cotton and wool blankets, and products for which style life may be paramount, as silk and rayon daytime frocks.

PRICES AND COSTS

Of vital concern to both managers of industry and interpreters of economic phenomena are price-cost relationships. So basic are these relationships that each might be treated as a phase of the other 'areas' discussed here. That procedure would make it difficult, however, to give adequate treatment to:

1) Vertical relationships in prices
2) Prices, labor costs, and wage rates

3) Prices and raw material costs

4) Prices, costs, and rate of production.

A great variety of other subjects warranting exploration in this area might be listed, but circumstances of the last decade have served to emphasize these four. Thorough study of any one would result in a major contribution which would both enlighten management and widen the economist's understanding of price behavior.

VERTICAL RELATIONSHIPS IN PRICES

In thinking of price behavior in the textile industries one should keep in mind that usually there are several different market levels at which textiles are priced on the way from their raw material state to final consumer use. Thus, with every appreciable change in price at some particular level, especially if it is an increase, great concern arises over the extent to which the change can and will be passed on to subsequent levels, and to the consumer. This happened with the processing tax on cotton, and more recently with the application of the national wage and hour law. But a change in price or cost at one level may work backward in its effects as well as forward, as is reported to have occurred in 1936 when wage rates were increased in the men's clothing industry. The increase tended to reflect itself for some time prior to its effective date in efforts by clothing manufacturers to secure offsetting concessions in fabric prices from mills; and some clothing manufacturers found it necessary to shift to fabrics at the next lower price 'niche'.

The 'ebb and flow' of price changes through a complex system of vertically related markets represents a fundamental aspect of price behavior in the textile industries which has yet to be analyzed systematically. Now and then some sudden or dramatic change in cost has brought forth special studies by the interests affected; for example, the reports of the Bureau of Agricultural Economics and of the Cotton Textile Institute concerning the processing tax. Such studies have naturally been sporadic; moreover they tend to be transitory in value since their main purpose is to

provide information as a basis for action in a particular situation. There is need for more general and continuing studies that would compare and contrast vertical relationships in prices and costs not only for different kinds of textile products but also for different periods.

What questions should studies of vertical relationships in textile prices seek to answer? It is not known in any comprehensive fashion what relation, if any, exists among prices at each of the major price levels of textile production and distribution. Some comparisons of cotton and cotton cloth prices have been made, and in the case of one or two staple articles of cotton apparel, such as overalls, the relation between the price of the finished garment and of the cotton fiber has been measured.[1] These plane-to-plane analyses of price movements have been severely handicapped by lack of adequate data. Progress is being made in this direction, however, with the revision of its textile wholesale price series by the Bureau of Labor Statistics. It is to be hoped that in this revision the various marketing levels in textiles will be recognized with appropriate indexes for each.

Comparative analyses of level-to-level textile price relationships are needed not only for different periods but also for different classes of textile products. For example, to what extent does the vertical pattern of sheet prices correspond to that of overalls? Both are staple cotton products but one is household and the other, apparel. Studies of this character should raise more questions than they answer. Although they will reveal what relation tends to prevail between prices at one level of production and those at another, they will not reveal the reasons or forces behind these relationships. Those will call for further study, on a more intensive basis.

PRICES, LABOR COSTS, AND WAGE RATES

While one must of necessity be aware of cost changes in any study of vertical price relationships, it would not be

[1] Special studies by the Cotton Garment Code Authority, the Bureau of Agricultural Economics, and the Cotton Textile Institute.

practical from a research standpoint to study intensively at the same time the relation of any particular cost element to price behavior. Furthermore, certain aspects of price and cost relationships, as between a product's price and its labor costs, are largely horizontal rather than vertical. It is suggested, accordingly, that studies of prices in relation to particular cost elements be made not as a part of some general study of vertical price relationships but as major studies in their own right.

There is great need today for understanding the relation between wage rates and labor costs as well as between labor costs and prices in the textile industries. The effects not only of wage rates and labor costs upon prices should be considered but also of prices upon labor costs and wage rates. Such effects should be traced both through the markets vertically related to the market where the change occurs and to competing markets at the same level and even within different branches of the same industry.

An analysis of prices, labor costs, and wage rates opens up many lines of study. In evaluating current price and wage theories it would be particularly useful if we knew more precisely what long run relationships tend to prevail among wage rates, earnings, and prices. This field has been virtually neglected so far as the textile industries are concerned. If we are really to understand the role of wage rates in price behavior, however, we must go beyond wage rates to labor costs. After all, wage rates are but one factor in labor costs, which are affected also by hours of work, work load, labor and plant efficiency, quality of materials, and other factors. How much each influences labor costs and how in turn they may be affected by wage rates deserves serious consideration. It is sometimes said, for example, that low wage rates tend to be accompanied by high labor costs. To what extent can this be verified in the experience of the several textile industries?

The dual role of prices as both cause and effect should also be considered. As with other elements of cost the question arises whether increases in labor costs tend to be

passed on to the consumer and whether consumers really benefit from wage decreases. Though changing labor costs may affect prices, situations frequently arise in which price changes bring pressure upon wage rates, especially during periods of falling prices when management may seek to reduce costs by cutting wage rates.

How extensive an investigation into the relation of prices, labor costs, and wage rates may be worth while would depend largely upon the contacts, experience, and resources of the person or persons undertaking the task. So far as the relation between labor costs and wage rates is concerned, several case studies would be highly useful, particularly if chosen with an eye to representing various types of products and competitive situations within the textile industry. Such studies could well be undertaken by an individual.

Despite the vast amount of material in one form or another that has been accumulated relative to wages and hours in the textile industries during the last decade, virtually none bears on the relation of wage rates to labor costs and of labor costs to prices. Much information has been collected about the number of persons employed in the textile industries and what they earned, but we know little about what they did when they were employed, the rates they were paid, or how much they produced for their wages in terms of specific jobs and products.

PRICES AND DISTRIBUTION COSTS

Probably next to wage rates and labor costs no element of cost is receiving as much consideration today as distribution. In both the popular mind and among textile executives a feeling is growing that something needs to be done to reduce the cost of distribution. It would seem highly desirable, therefore, that distribution costs be closely examined to see to what extent some of the charges now being made about the inefficiency of the distribution of textile products are warranted. This would call for comparison among various classes of textile products of the costs of

getting them into the hands of consumers. It would not be enough to concentrate on the retail costs. There is need of a complete picture of what it costs to market goods at each level of production as distinct from what it costs to process them at each level. To what extent do costs vary with the methods used and the services rendered? Frequently the charge is made that distributive costs, particularly as they are now computed, tend to be pyramided because of the practice of figuring mark-on in terms of a percentage. How prevalent is such practice and to what extent does it tend to maximize cost increases?

While any major study of the costs of marketing textile products would entail the collection of additional data, a worth while start could be made simply through co-ordinating the various pieces of research that have already been done in the field, such as the studies by the Bureau of Business Research at Harvard University and by the Bureau of Foreign and Domestic Commerce. But whether started on a large or small scale, further analysis of the costs of textile marketing are greatly needed, and are likely to have increasing significance in the future from the standpoint of both industry and public interest. While textile executives have paid little attention to distribution problems in the past, they will undoubtedly give more thought to them in the future. The growing use of brand promotion by manufacturers is an evidence of this change in attitude.

PRICES AND RAW FIBER COSTS

Raw fibers have always played a major role in the costs of textile industries and, except for rayon, their continually fluctuating prices have been a major source of both profits and losses to textile manufacturers. In any study of the relation between fiber costs and price behavior, interest centers largely in the vertical relationships; that is, in the degree to which changes in fiber costs are transmitted through the successive markets. How responsive are prices at other levels to changes in prices in the fiber markets?

Unlike labor or overhead costs, fiber prices are in a sense an external rather than an internal factor in prices.

Two types of change in raw material prices may be differentiated: the usual cyclical fluctuations and extraordinary changes which frequently present themselves in some form of taxation, as the processing tax and the wool tariff. Most studies of the incidence of raw material cost changes have dealt with a particular situation; there is need of more general studies that would co-ordinate what has been done and critically appraise the methods followed.

Concerning the relation of cyclical changes in raw material prices to the price behavior of yarns and fabrics considerable work has been done, particularly in the cotton industry. Several series have been compiled showing for a period of years the spreads between the prices of raw cotton and of selected standard fabric constructions. These analyses should be extended and similar studies made in other textile industries. Through such studies we should be able to ascertain what lead or lag, if any, tends to prevail between prices of fiber and of the products into which the fiber is made. For example, one investigator has found a fairly high correlation between the prices of overalls and of raw cotton, with a lag of about three months in the former.[2] Once such relationships are observed statistically, they should be put to qualitative tests and the intermediate steps considered by which the movement of fiber prices is transmitted into price changes at a level several markets removed.

PRICES, OVERHEAD COSTS, AND RATE OF PRODUCTION

It may be questioned whether prices, overhead costs, and the rate of production should be studied separately from the more general problem of prices and capacity, to which attention is given in the next section. Undoubtedly overhead costs could not be overlooked in any searching analysis of prices and capacity, but that area has been outlined

2 Peter Parenty, Consumer Demand for Overalls (International Association of Garment Manufacturers, 1935).

here largely in terms of market and industry-wide reactions. It seems, however, if we are to understand their true significance as a price-determining factor, that overhead costs should be considered also on a company basis.

What rate of production is necessary to cover out-of-pocket costs? To cover all costs? Does this relation vary from one period to another? From one plant to another? Is it affected by size of plant or of order; by work load? These are the sorts of questions continually being asked about the relation of rate of production to overhead costs. It would be highly enlightening to know what rates of production are assumed among mills in a particular industry in figuring their overhead costs and to what extent this influences their decision about the price they accept.

Obviously any study of this sort that included even two mills would depend upon the reconciliation of accounting procedures. It would be a highly technical investigation requiring a combination of accounting and statistical techniques. Perhaps a start should be made with an experimental study in some relatively staple line of products. Most of the requisite data have never been collected and probably could be obtained only through direct plant co-operation. Such co-operation might be facilitated if the study were undertaken together with a group of cost accountants or industrial engineers.

PRICES AND CAPACITY

By capacity, in general, is meant the maximum physical volume of goods an industry can turn out under a given set of conditions. These conditions in the textile industries include, in addition to number of machines, their age and state of repair; usual schedule of hours operated; nature of the product; quality of material from which produced; the size of units or orders in which produced; labor efficiency; general plant efficiency as determined by layout, power facilities, and other factors; and the managerial ability of those directing the enterprise. Thus to study the relation of price behavior to capacity one would seem to

be faced with the task of studying the relation of price behavior to each of the many elements that, taken together, determine productive capacity. The close interrelationship of these determinants makes it impractical to study each separately.

When one considers the role of price behavior in relation to capacity, it is not so much some particular element of capacity that assumes significance as the relation of prices to the utilization of available capacity and to its expansion or contraction. To some extent 'utilization' involves both short term 'expansion and contraction' and long term considerations, but this distinction cannot always be made satisfactorily. Keeping in mind that capacity is a combination of various elements, it seems best to consider the relation of price and capacity in terms of:

1) Prices, profit margins, and machine activity, i. e., how the utilization of textile capacity varies with prices and profit margins

2) Prices, profit margins, and the transfer of machinery from one product to another; frequently therefore from one market to another

3) Prices, profit margins, and capital flow

PRICES, PROFIT MARGINS, AND MACHINE ACTIVITY

During the last twenty years many textile industries have undergone the apparent paradox of a marked reduction in key machinery in place with but little change in actual capacity. Several conditions serve to explain this paradox, including the substitution of new machinery for old, such as the automatic for the non-automatic loom. But more far reaching in its consequences has been the change in industry operating schedules.

During the World War the pressure to get out goods resulted in night operation, a practice not at all common up to that time. Following the War, the practice of running nights continued in some sections, particularly among the cotton mills of the South and in other sections where regulations did not prohibit night work of women and children.

Furthermore, sharp competition during the late '20's caused an increasing number of plants to operate on a multiple-shift basis. Then came the New Deal with NRA and other measures that have virtually established a permanent forty-hour week, with the result that two forty-hour shifts have become the goal of nearly all textile mills, almost regardless of product or industry.

While the growth of multiple-shift operation has represented a major secular change it has also had cyclical aspects that warrant study. In bringing about a drastic change in machine utilization it seems to have tended to make machine activity much more sensitive to market conditions, and it is out of such conditions that questions like the following arise concerning the relation of prices, profit margins, and machine activity in the current decade:

1) Falling prices and shrinking margins might be assumed to bring about a curtailment of productive activity. To what extent does this follow in the various textile industries?

2) When activity does not contract as might be expected, what forces are responsible? Are the costs of idleness a more effective determinant of mill policy than the costs of operating at a loss? What conditions cause this? For example, the statement was frequently made during the depression that companies with mill villages had to keep operating rather than face the responsibility of throwing their workers out of jobs.

3) Are there significant variations in the response of productive activity to lower prices? By products? By stages of production? Is activity more likely to decline in the face of lower prices if the product normally carries a high profit margin than if it carries a low margin?

4) What part has price and margin behavior played in the growth of multiple-shift operation during the last two decades?

5) Is it correct to conclude that machine operation in the textile industries tends to be elastic with rising prices and inelastic with falling prices? Situations like that mentioned above with reference to mill villages are said to play a part in preventing the contraction of machine operation during a weak market. On the other hand, it can be argued that mills cannot go to three-shift operation overnight, but require a con-

siderable period to assemble and adjust a working force to such schedules.

Several studies have been made by trade associations and other agencies of the course of machine activity in the textile industries during recent years. In the main these have dealt merely with what has happened rather than why. In none has the relation of machine activity to price behavior been adequately explored. Although data on the activity of various kinds of key textile machinery are available in the monthly reports of the Bureau of the Census, they are more likely to be useful for cursory than for penetrating analysis, since they do not afford classification of activity by products. In the cotton and silk industries trade associations compile statistics of machine activity in conjunction with those of production.

PRICES, PROFIT MARGINS, AND TRANSFER OF MACHINERY

Industry policy relative to number of shifts operated, although a material factor, is by no means a dominant reason why the capacity of any particular textile industry at any given time is fairly indeterminate. There is an uncertain line between any textile industry's actual and potential capacity that cannot be precisely defined even though the industry may have a settled policy regarding operating schedules. This is largely because there is such a wide opportunity in the textile industries for machines making goods for one market to be transferred to making goods for another market if conditions warrant. In other words, textile machinery to a considerable extent is general rather than special purpose. Although there are limits beyond which machinery cannot be transferred, they seem to be flexible. That is, market conditions seem to have much to do with determining the effectiveness of a limit. Probably of major importance in setting limits to machine transferability is the fact that most textile machinery is built for the purpose of processing some particular fiber. This limitation grows less and less effective, however, as one moves from the

fiber preparatory operations to those responsible for the finished fabric. For example, the range of fabrics that can be handled in finishing is quite broad. At the spinning level, mills are presumably set up to handle a particular grade of fiber, but shifts are made under certain market conditions. The balance between operations is in some respects the most compelling limiting factor, but even that is quite flexible. Some mills are set up on an unbalanced basis with the deliberate policy of supplementing their operations by purchases or sales outside.

Technical developments may at any time eliminate conditions that in the past have served to prevent the transfer of machinery from one product to another. At one time it was considered impractical to weave woolen cloth on worsted-type looms. Today it is not at all uncommon, largely because the quality of woolen yarn has been so improved that it is able to stand the strain of the faster operation of the worsted looms. Much, of course, depends upon the particular mill, its management, and the traditions of its workers. For example, workers who have long associated with wool manufacturing are said to be very reluctant to have anything to do with cotton processing.

It should not be supposed, however, that there are no special purpose machines in the textile industries. Certain finishing machines can be used for only a very limited line of products and certain knitting machines, such as the full-fashioned hosiery machine, can be used for but one grade of a particular product. One can detect, however, a rather general trend throughout to more general purpose equipment. This is particularly exemplified in the new equipment machinery manufacturers are offering. The spinning frames being built today are designed to spin a wide range of counts rather than a restricted range, as in earlier days. Similarly, looms are being designed to produce a wider range of fabrics.

How do the diverse policies of a large number of mills in transferring equipment from one product to another combine to affect the supply of goods of a specific type that reaches the market? What effects do changes in profit mar-

gins have upon the transferring of machinery from one product to another and upon the amount of goods produced for a given market?

Another phase of this problem of transferability is the effect of retail price brackets upon demand. Frequently during a rising or a falling market, the bulk of the demand for a given type of goods may shift from one construction to another, because of the need for cutters-up to hold their garments to certain price brackets. At times a situation of this kind may lead to a shift away from one type of fabric to other types. Just how has this operated in the past, and what are the criteria for judging the probable behavior of price and demand under such conditions?

On the whole it seems that any studies of prices, margins, and transferability of machinery would have to be made in terms of some particular situation; for example, the shift of mills making coarse cotton goods to fine goods, of cotton mills to cotton-worsted fabrics, of wool mills weaving women's wear to men's wear fabrics. Almost innumerable cases could be found. The data would have to be obtained largely from trade association and mill sources. Except for background purposes there are no official statistics that would contribute to these studies.

PRICES, PROFIT MARGINS, AND CAPITAL FLOW

What role do prices play in the expansion and contraction of productive capacity? On theoretical grounds it might be assumed that a period of declining prices would result in the contraction of capacity and a period of rising prices in the expansion of capacity. For this to happen, of course, capital must flow either out of or into the industry. What then is the relation of capital flow and price behavior in the textile industries?

The last two decades have seen vast changes in the capacity of the textile industries as represented by machinery and plant—the decline of the Philadelphia area as a center of wool fabric manufacture and of Fall River and New Bedford as centers of fine cotton goods manufacture, the

rise of the South as a producer of fine goods, and the growth of Los Angeles as another 'Brooklyn' in the knitted outerwear industry. Besides such geographical shifts, the last two decades have seen the automatic loom supplant the non-automatic in the woolen and worsted industry, the adoption of long draft spinning in cotton, and the virtual displacement of 39-gauge hosiery machinery by finer gauge equipment in the full-fashioned hosiery industry. All these changes have represented capital flow in some form. To what extent, if any, has price behavior played a part? About these situations and others like them such questions as the following develop.

1) Where chronic idle capacity develops, how effective are falling prices and decreased margins in bringing about its liquidation? What other forces, if any, enter the picture to retard or delay liquidation? What about the secondhand machine? Though lack of profit may force their original owner out of the business, this does not mean that the machinery is lost to the industry. What part have secondhand machines played, therefore, in prolonging the adjustment of capacity during the last two decades?

2) By what means does capital 'flow out' of the textile industries? By transfer to other uses? By depletion? Is the transformation of fixed assets into current through operating at a loss for several seasons a necessary concomitant to the flow of capital out of textile industries when no longer needed? Buildings can be put to other uses but what about machinery? That can sometimes be transferred to other markets. To what extent has the capital flow of the equipment in liquidated mills been depleted? Has much of it actually been used beyond its reasonable operating life? There are stories of fifty-year-old spinning frames in some of the mills that have gone out of business.

3) What is the relation of price and margin behavior to the establishment of new or the expansion of old plants in old areas? In new areas? As represented by the introduction of more productive machinery, processes, or methods of manufacture?

4) From what sources has additional or new capital been obtained? To what extent have the textile industries depended upon financing new capital outlays from earnings?

5) In what way have taxation, wage rates, interest rates, and other cost factors facilitated or retarded new capital outlays?

A whole series of studies could be made concerning capital flow in the textile industries. Probably more information could be obtained with less effort on this subject than on any other phase of price and capacity study. Undoubtedly the co-operation of machinery manufacturers could be obtained and, for the most part, their manufacture is in the hands of relatively few companies. Much information is to be found in the biennial and monthly reports of the Census; and trade directories and trade magazines would provide data on the rise of new mills and the passing of old. Second-hand machinery dealers could provide a picture of what happened to the old equipment.

PRICES AND MARKETING METHODS

May one assume that prices have no necessary relation to merchandising methods? That hardly seems a tenable assumption in the light of the references made in the foregoing discussion to certain merchandising practices of retailers, particularly price lining, and their repercussions upon the wholesale textile markets. In other words, price-demand relationships and price-supply relationships tend to be colored by the manner in which business is carried on. Probably many practices now common in the distribution of textile products affect and are affected by price behavior, but two seem particularly significant at present: price lining and brand promotion.

PRICE LINING

Among the forces influencing price behavior to which attention has been called none has been more continually in the background than the practice of price lining, or selling goods at certain fixed price intervals or brackets. While peculiarly characteristic of the retailing of textile products, it has some use at prior levels of marketing, perhaps in large measure as a reflection of retail methods. Whether one is

concerned with the relation of prices to buying movements, the role of prices in fiber substitution, the interrelations of price changes, or with the relation of price movements to transfer of machinery from one product to another, always in the picture is the question of how price lining affects the situation. While the influence of price lining in particular situations can no doubt be studied most effectively in terms of those situations, e. g., machine transferability, such analyses do not enlighten us about price lining itself. Clearly there is need for an examination of this marketing practice from the standpoint of both its bases and its relation to price behavior.

When the manufacturers' price of a given textile article is raised above, say, a point where it fits into the $1.00 retail bracket, there is a disposition among retailers to believe that there is no price at which it can be merchandised successfully short of $1.19 for some articles, $1.39 for others, and even $1.95 for still others. If one were to express doubt that the curve for consumer demand is actually as discontinuous as this suggests, one would be met in most retail quarters by the response that tests have shown that intermediate brackets simply do not produce sales; that consumers are suspicious of them or do not react favorably to them; or that you can sell more of the same article at $1.19, for example, than at $1.10.

The faith in retail price brackets evidenced in some quarters, however, does not, even among the retail trade, obtain universal support. A few department stores as well as certain mail order and chain organizations have found it possible to merchandise textile products more nearly as groceries are merchandised, at whatever prices the cost and required mark-on dictate. Thus some odd and intermediate price lines have been established by such stores, which seems to indicate consumer willingness at least to go along with other than conventional price lines.

Under a system of retail price brackets, adjustments to changing prices in the wholesale markets may be made either by shifting the merchandise to another price bracket

or by changing the quality or amount offered. In such articles as thread, the adjustment of price can be made by simply changing the yardage on the spool. But for most textile articles it is not so simple; the only way may be by changes in cloth construction, a process requiring time and expense and incurring considerable risk for all concerned. Under just what conditions such changes of quality occur, how extensive they are throughout the trade, and on what products this method is most frequently employed, are matters of genuine interest to both economists and the industries concerned.

Just what consumers actually do when faced by a price change over a period remains to be explored over a wide enough range of textile products for the answers to be conclusive. It is not certain that consumers are always aware that prices have risen for specific goods and that prices are higher for the same quality of goods. Lack of consumer standards of quality and frequent changes of brands offered by stores make it difficult, if not impossible, for the average layman to make any check on quality. Furthermore, style considerations frequently make direct comparison on a utility basis meaningless.

One phase of analysis that certainly should be taken into account is the shift in the price brackets in which the largest volume is obtained in its relation to changes in national income and the income of certain wage groups, occupations, or specific communities. During the last decade the relation of consumer income to the quality of goods demanded has been particularly evident. It has seemed that increased prices have not of themselves led to decreased demand when national income has been rising and that increasing national income may actually stimulate demand for better quality and, therefore, usually higher-priced products.

In short, the question of consumer reaction to price changes must be answered finally in terms of the character of price adjustments made by retail stores, the size of individual price adjustments, and the extent to which quality changes are used as a substitute for changes in price. All

these factors are integral parts of retail merchandising policy. They have a direct bearing upon merchandising by textile manufacturers on the one hand and are also tied up closely with consumer buying habits. Under a given set of conditions and within the limitations of these merchandising methods, how is consumer demand affected by price changes?

Such work as has been done on price lining has been limited chiefly to the use of the product for merchandising purposes. Relatively little objective study has been devoted to the problem in its broader aspects, probably in part because of the lack of readily available sources of material. With existing data in the manufacturing and retail trades a reasonable start could, however, be made. Possible ways to get additional information would be through personal interviews with retailers, particularly those in merchandising and sales promotion positions; the analysis of retailers' records and of records of those selling to retailers. Still another approach would be to analyze retailers' price policies as reflected by advertised prices of specific commodities.

PRICE BEHAVIOR OF BRANDED AND UNBRANDED PRODUCTS

Frequently the study of price lining leads into the study of brand promotion. Whether merchandise selling at one particular retail price is shifted to another depends in part on how extensively and for how long that price has been advertised to consumers. This is well illustrated in the experience of the chain stores selling men's suits at fixed prices, which postponed price decreases as long as they possibly could during the depression, partly because they had a fixed investment in signs and other advertising material all carrying the set price. But brand promotion and its relation to price behavior is a far bigger subject than mere price lining.

As used by some manufacturers, brand promotion becomes an informal method of vertical integration by which they direct the pricing, inventory, and promotion policies of the retailers associated with them. Thus instead of there being pricing at three levels, namely, manufacturing, whole-

saling, and retailing, it in reality occurs at only one. At the same time large distributors have undertaken private branding programs which have not only tended to forestall manufacturer branding but have led the distributor into close relationships with producers in order to ensure sources of uniform quality. Even where brand promotion has not developed into close manufacturer-retailer relationships, it may still have an important bearing upon price behavior. A manufacturer may elect to sell aggressively through extensive brand promotion, without any restrictions on resale price, in an effort to develop volume which may result in turn in his product being widely used as a 'loss-leader' by retailers. This may mean at times that the product is offered to the consumer at less than the price of similar unbranded merchandise.

The subject is one of unusual interest at present both because of the upholding of price-fixing laws by the Supreme Court and the growing interest among textile executives in advertising and promotion. To what extent, for example, has branding enabled manufacturers to obtain a higher return for both themselves and their distributors, and to what extent has it resulted simply in consumer acceptance of their product when priced at the same level as competitive goods? The answer may not be the same on all levels. Fabric manufacturers may succeed in getting no more for their product than competitors for theirs despite brand policies, whereas cutters or retailers may be able to obtain a substantial price differential on their advertised lines.

Although there is much interest in the branding of textile merchandise today and a good deal of promotional activity on the part of both manufacturers and distributors, most of it is too recent to yield more than tentative conclusions. For certain textile products, however, promotion would seem to have a sufficiently long history to justify a comparative analysis of the behavior of branded and unbranded lines. This would include such household textiles as sheets and blankets; such knitted apparel as hosiery, underwear, and bathing suits; and such cut and sewn

apparel as men's suits and shirts. Care must be taken to distinguish between merchandise that merely carries some name or trade mark and that which is continuously kept before the consumer by some form of advertising or promotion. Those goods which are merely named or trade marked are usually merchandised in about the same fashion as those which carry no name, and frequently in some lines of merchandise like shirts, all carry a name or label. For purposes of the comparative study suggested here, only merchandise that is actively advertised or promoted to the consumer warrants consideration as 'branded merchandise'.

The price behavior of branded textile merchandise such as sheets or hosiery may afford conclusions little different from those which might be obtained by studying non-textile branded merchandise which was likewise ready for consumer use. There is, however, a growing use of brand promotion, which, if not unique, is represented to an unusual degree in the textile industries. This is the practice that some yarn and cloth producers follow of advertising their goods directly to the ultimate consumer as well as to their immediate mill, converter, or cutter customers. Presumably by this method they gain a competitive advantage over their competitors, if they are able to convince their own customers that their promotion has 'pulling power' with consumers. Promotion of this type has had unexpected consequences. In some cases, the mill has found itself having to assume responsibility for the workmanship of those who made garments from its fabrics in order to protect its investment in consumer goodwill; in one instance this actually led a mill into the manufacture of garments. In other cases, problems arose over advertising allowances because they tended to become nothing more than price rebates.

What are the possibilities for mill yarn and fabric promotion that extends all the way to the consumer? Do prices behave any differently under these programs than under traditional methods? Are producers with branded yarns or fabrics able to secure any differential over their competitors? To the extent that differentials cannot be secured,

how can the promotion be supported? Through increased volume? Is there any difference in the reaction of branded and unbranded lines to a rising market? To a falling market? These are but a few of the questions to which answers are needed about the relative price behavior of branded and unbranded yarns and fabrics. The task is by no means easy. One should be concerned with prices not only at the fabric level but also at all subsequent levels, including retail. Furthermore only a few cases extend over a long enough period to justify analysis in rayon filament yarn, percales, woolen specialty fabrics, and summer men's wear fabric.

PRICES AND INDUSTRIAL ORGANIZATION

In the study of textile prices over a period account should be taken of changes in the structure for producing and marketing textile products. The significance of any intermediate textile market depends upon the volume of goods that passes through it as compared with the volume of the same goods that moves directly from one stage to another without change in ownership. Wherever manufacturers or distributors are increasing the number of functions under their control in the direction of either their source of material or the final consumer, the markets involved are vitally affected and are usually reduced in importance. Contrariwise, where firms dispense with some of the functions they have been accustomed to perform and buy or sell instead in the open market, the significance of the market concerned is materially enhanced.

The organization tendencies in textiles today are quite mixed. A casual survey of developments would indicate that the efforts toward integration may be more numerous than those toward specialization, particularly when one considers the various indirect means of accomplishing much the same ends without actual integration. For example, a weaving mill need not take over a cutting factory to avoid selling its goods in the open fabric market. It may have its fabrics cut up on contract and sold as finished garments or it may make

arrangements with one or two cutters whereby it confines its fabrics to them exclusively. Such arrangements take the goods out of the fabric market and make their pricing less subject to the play of the forces of demand and supply in that market.

WHERE INVESTIGATION SHOULD POINT

What happens to prices when an intermediate market is curtailed or eliminated? For example, what effect has the withdrawal of mail order houses from certain garment markets had upon the behavior of prices in those markets? In other words, what effect is the tendency of mail order houses and other large retail distributors to go around the garment markets and buy either gray or finished cloth having upon the garment markets, and also upon the cloth markets? Another instance that warrants study is the backward integration of tire companies into the manufacture of tire cord: what happened to prices? To what extent did the market 'dry up'? In all such cases it would be desirable to identify and evaluate the factors or conditions that favor the 'bridging of a market'. Also account should be taken of what happens to costs and if there were savings, what happened to them? Did the consumer benefit?

What happens to prices when a new intermediate market arises, for example, the wool top market during the last decade? Such tendencies warrant study. They provide excellent material for studying how markets come about. It is especially important that some attempt be made to evaluate the effect that the development of these markets may have upon prices in subsequent markets. Does specialization make for more or less price flexibility when it is introduced into the production and distribution chain in such a way that new markets result?

In those markets where both integrated and specialized firms operate, as in cotton gray goods, how do the results obtained by these two types of organization compare? In terms of profits and losses? Of costs? Does a firm only partly integrated adjust more quickly to changing market condi-

tions than one completely integrated across the market in question?

What relation, if any, is there between price flexibility and degree of vertical integration? Are prices of woolen and worsted dress goods, for example, necessarily less flexible than those of filament rayon dress goods just because woolen and worsted goods are produced by completely integrated mills, and rayon by a series of specialized mills? It has been suggested that the shortening of the manufacturing cycle, induced by conditions in the worsted cloth market, has been made possible only because of the high degree of integration of spinning and weaving in worsted cloth manufacture. Are prices more sensitive as a result?

Integration is presumably often undertaken to avoid the price-cutting tactics of competitors. In other words, it is a device for taking one's product out of competition at a given stage. This means taking one's product out of competition at one stage and putting it into competition in a different form at some later stage. What happens at the later stage? Is price pressure avoided? May it not prove to be cumulative?

What relation, if any, is there between price behavior and degree of intra-market integration (that is, the extent to which manufacturing and merchandising are united under one control)? In some markets direct selling prevails while in others selling is in the hands of agents and brokers. What differences, if any, in price behavior grow out of such arrangements? Again integration may take the form of ownership of materials and goods, processing being done on a commission basis: when this change occurs does it have any influence upon prices? An opposite step in the direction of less integration is factoring: what is its extent and relation to price behavior?

METHODS

In seeking to reveal the relation of structural changes to price behavior, the investigator can hardly hope to study more than a few situations. To a considerable extent the

data have to be created, that is, the companies will have to be solicited for the information required. Little can be gleaned either from the reports of governmental agencies or the files of trade associations. Clues will be found in the market news reports of trade papers. Of some help as background material will be the study recently published by the Industrial Research Department, University of Pennsylvania, under a grant from the Textile Foundation entitled Vertical Integration in the Textile Industries, "primarily an appraisal of how the combining of successive steps in the production and distribution of textiles has worked in the case of selected present-day textile companies".

PRICES AND BUSINESS CYCLES

The foregoing areas, including that relating to buying movements, deal with special aspects of business fluctuations. Furthermore, the current decade has been emphasized not only because of its immediate interest but also because of the greater opportunity for assembling data where gaps are substantial. Neither current interest nor relative availability of data, however, should blind investigators to the need for a broad study of the relation of prices to business cycles in the textile industries, a study that should cover the history of textile manufacture in this country since its establishment upon a factory basis. Without this background, intensive studies of the current scene, fertile as they might seem in worth while findings, would still be incomplete.

Probably in no industrial field can long time cycles in prices and activity be studied to greater advantage than in the older textile industries such as cotton or woolen and worsted manufactures. Their industrial life closely parallels that of the country, their price and activity record, though broken and inadequate, is still probably as complete as that of any industry, and the files of several companies with more than a century's history afford rich material.

A major contribution to the price record of the textile field is being made by the price history work now in progress under Anne Bezanson's direction at the Industrial Research Department, University of Pennsylvania. Three volumes have already been published giving indexes of the monthly prices of important commodities, including textile products for the later years of the colonial period, and for the early national period in the Philadelphia area, and a fourth volume is in preparation which will continue the record to 1896. These together with the price series of the Bureau of Labor Statistics dating back to 1890 will give more than a 200-year record of price cycles in textile products.

Comparable price series for Philadelphia, Boston, New York, Charleston, New Orleans, and Cincinnati have been assembled in the summary of *Wholesale Prices in the United States, 1700-1861* by A. H. Cole, published in 1938 by the Harvard University Press. Other data, as well as price series, some of which relate to textiles, appear in *Fluctuations in American Business, 1790 to 1860* by W. B. Smith and A. H. Cole, published in 1935.

These works, some of which summarize special studies available in more detail, give prices of the leading fibers and of some manufactured products. Fiber prices, especially, have been assembled for many regions. The prices of cotton, for example, date from 1731 in the Philadelphia series, from 1752 in Boston, 1786 in New York, 1796 in Charleston, 1800 in New Orleans, and 1816 in Cincinnati. After the Revolutionary War cotton was roughly graded first by regions and later by quality of staple. Thus, after 1792, in the New York and Philadelphia series prices of specified grades of raw cotton can be used. Prices of cotton cloth of domestic manufacture, namely, ¾ checks, begin as early as 1818 in Philadelphia and by 1825 several grades are available for the New York market. Flax, hemp, cordage, several grades of duck, and brown and white sheeting start as early as 1784 in Philadelphia and the prices of many similar textile products have been traced from at least 1797 in New

York. Consecutive prices for wool start somewhat later than the cotton or flax series. Grading by full-blood, three-fourths, one-half, etc., was effective when the Philadelphia series began in 1813. A similar grading prevailed in New York in 1815 and 1816 and in Boston in 1827 when the regular reporting of wool prices starts. Cincinnati prices for an unspecified grade of wool date from 1816 to the outbreak of the Civil War. Thus, the preliminary task of assembling prices of the leading textile fibers and some manufactured products has been done for several important markets for the years preceding the Civil War. Work is in process for more textile items which will fill the gap from 1861 to 1896.

Surely this record of price history is enough stimulus for some investigator to undertake the task of assembling both quantitative and qualitative data on the textile trade during these years as a basis for a thoroughgoing study of the role of textile prices in business cycles. This may seem a far cry from such issues as the influence on price behavior of the buying practices of large distributors but we must view the present scene in its perspective. In terms of long time price cycles, we seem to have been in a deflationary phase for perhaps two decades. Surely it would help the thinking of all observers of the current scene whether in public or private life, in business or academic work, if a longer perspective could be obtained.

HOW PRICES ARE MADE IN TYPICAL TEXTILE MARKETS

Although the study of the behavior of textile prices in relation to costs, capacity, or some other economic factor could give a much needed insight into the functioning of the textile industries, it could not be expected to reveal in their true proportion the price-determining forces in any particular market. It would probably show the relation of the economic factor to prices rather than how prices themselves behave. Certainly no general study of this character could adequately interpret the role management might play in

price determination. For that it would seem one could most fruitfully turn to the restricted but intensive study of selected markets.

WHAT MARKET STUDIES SHOULD TAKE INTO ACCOUNT

Much of the preceding discussion of the relation of prices to other economic factors is pertinent to the study of price behavior in particular markets, especially that dealing with prices and buying movements and prices and costs. In addition such points as the following should be considered.

1) Character of the product: its seasonal, cyclical, and secular demand; breadth of market, i. e., degree to which it is multipurpose; nature of styling and operation where styled.

2) Elasticity of supply: extent to which machinery can be transferred into and out of the market; policy of shift operation; industry practice concerning goods in process and finished inventories: are goods made to stock, on order only, or are goods made and sold at the market almost regardless of price?

3) Extent of producer specialization by product and by market level. Degree of inertia among producers with respect to changes in product construction.

4) Degree of uniformity in the offerings of different producers. (This is not so much a question of knowing what mills produce the best or poorest qualities as the extent of variation vs. homogeneity of products.)

5) Number and relative size of sellers in the market—extent and character of price leadership.

6) Procedures by which sellers claim to arrive at selling prices; attention given to market information, probable action of competitors, statistical appraisal of market prospects, own costs, etc.

7) Number and relative size of buyers in the market; extent and character of their domination of the market; procedures by which they claim to arrive at prices they will pay.

MARKETS WARRANTING STUDY

It is hard to say that one textile market is more deserving of study than another. Much depends upon the contacts and resources of the investigator. A thorough analysis of how

prices are made in one particular market, even though the product itself is inconsequential in our economy, might tell us more about the working of the price system than a superficial analysis of a series of markets. On the assumption that these analyses might be made by individual investigators working with small resources, the following markets are suggested:

Men's Worsted Suitings. To a considerable extent this is a 'market within a market' since many houses sell both woolen and worsted fabrics, and manufacturers of men's suits commonly buy both, varying their proportions as style and price considerations dictate. Nevertheless, this continual competition between the two types of fabrics, as well as the domination of the 'worsted' end of the market by a few relatively large producers would justify emphasis upon worsted suitings. Furthermore, worsted fabric constructions are more easily identified for price study purposes than woolen.

Denim. From the standpoint of styling, denims are staple fabrics and to a considerable extent single purpose in use. Their market is dominated, relatively speaking, by both large buyers and sellers, chain stores and mail order houses wielding an important influence.

Auto Cloths. This market, together with woven wool felts, is suggested to represent the industrial field. Both specification and style play a part in this market. Many producers, some of whom make only pile fabrics while others make only flat goods, compete for the business of relatively few customers.

Woven Wool Felts. These fabrics are used almost entirely as accessory equipment in the manufacture of paper. There are not more than eleven producers. The product requires great technical skill in manufacture and must meet exacting specifications. It has no direct substitute.

Cotton Print Cloths. It is not easy to suggest a market at this level that would not severely tax the resources of one investigator working alone. The cotton print cloth market is by no means simple, but no other gray market is so wide-

spread in its influence, or better illustrative of the price behavior of a multi-purpose product.

Filament Rayon Yarn. In this market technology has much to do with price behavior, partly because it is still developing and therefore subject to improvements that materially lower costs, and partly because the nature of the process and the investment required tend to make for continuous operation.

Woolen Carpet Sales Yarn. In contrast to the rayon market, which producers dominate, the wool carpet yarn market approaches the other extreme—domination by few purchasers. Furthermore, in contrast to rayon filament, it represents a shrinking market, partly because purchasers of woolen yarn are now making some of their own requirements.

The list by no means exhausts the possibilities; in fact the number of markets that might be analyzed intensively is legion, especially if one defines them narrowly. It is therefore the intent here to mention merely a few that might be studied by one investigator as illustrative of the rich field for research on price determination in the textile industries.

IMPROVEMENT OF THE PRICE RECORD

The serious inadequacy of the record of textile prices from the standpoint of economic research has been pointed out over and over again in the preceding discussion. While some improvement of price data would naturally accrue as a result of any studies undertaken in the areas herein suggested, such efforts cannot be relied upon to give widespread improvement. There must be in addition continual effort by those concerned with the collection and use of textile price data to see that the record grows in usefulness from the standpoint of coverage, representativeness, and reliability.

A most encouraging recent development has been the co-operation of the United States Bureau of Labor Statistics with the Textile Statisticians Group in revising the price specifications for textile materials and products included in

its index of wholesale prices. While work of this sort is less price research and more statistical administration, both this kind of improvement and the usefulness of the resulting price statistics would be greatly enhanced by certain corollary research activities.

1) Study of prices quoted in trade journals and governmental reports to determine the extent they represent actual changes in the market

2) Measurement of quality and style changes in textile products over the last few decades as an aid to the study of price movements

3) Development of methods for taking account of changes in quality and style in both wholesale and retail indexes of textile prices

QUOTED PRICES

What is the relation of 'quoted' prices to prices actually paid for goods? Are the prices quoted merely 'ask' or 'bid' prices or do they represent sales? To what extent are they 'list' prices subject to modification by terms, advertising allowances, or other forms of discount? Questions of this sort are continually rising about most textile price series now available. Undoubtedly the compiling agencies, whether trade journals or governmental bureaus, have given considerable attention to these problems. But the necessities of day-to-day reporting or of statistical collection do not always allow the thoroughgoing analysis these questions merit if the true worth of various textile price series is to be established.

The collection of data on sales by certain trade associations during the NRA made possible some comparison between prices realized by mills and prices quoted in trade journals. In one instance, for example, the Cotton Textile Institute found that during 1933 the difference between prices based on actual sales and market quotations was not more than 4 per cent. It is hard to say, however, whether this relation is typical even of combed cotton yarn over a period of years, let alone of textile yarn price series gen-

erally. Further investigation is needed, series by series. Such study would not be justified, however, if it were directed merely to measuring the adequacy of present series in terms of realized prices. In addition as much, or possibly even more consideration, should be given to possible means of improving quoted price series in the future. That is, the investigator should assume responsibility for working out possible methods by which quotations might approximate prices at which goods actually change ownership.

MEASUREMENT OF QUALITY AND STYLE CHANGES

Changes in quality can be regarded as of two types: substitution of one yarn or cloth construction for another, and changes in the quality of a specific construction. As an example of the former there is the trend from 64x60 percales to 80x80 percales during the last 15 years. At the same time the quality of both 64x60 and 80x80 percales has been improved. Such improvements of quality in a specific construction are of at least three kinds: improvements in the cloth itself and in the types of colors used in decoration, and reduction of shrinkage. How are these elements to be measured?

Tensile Strength

In a specific construction of cloth, improvements consist essentially in greater uniformity of yarn whereby unevenness and corresponding weak spots are reduced. Measuring changes in tensile strength accordingly gives some measure of changes in the quality of a specific type of fabric. For fabrics subject to heavy wear, such as frequent laundering, results from a rubbing test should also be used, since tensile strength is of itself not an infallible guide to actual wearing quality. The tensile strength of constructions made 10 or 15 years ago can undoubtedly be compared with similar constructions today for a fairly wide range of fabrics. The old Cotton Research Company and the commercial testing companies, as well as individual mills, should have records for what was average strength then and what is

average tensile strength today on given constructions. The United States Bureau of Agricultural Economics, for example, has made studies of tensile strength of sheets and of other cotton fabrics.

Improved color fastness

Fast colors have been adopted throughout the entire range of women's wear fabrics within the last fifteen years. Today, in both plain shades and prints fast colors predominate in women's cotton fabrics except in the 60x48 percales sold by a few low-end converters. Details of the stages of this transfer and the costs of producing fast colors today as compared with commercial colors 15 years ago could undoubtedly be worked out in conjunction with the technical research staff of organizations like the DuPont Company. It is believed that a measure of the increased consumer value arising from the use of fast colors can be determined from the increased expenditure by manufacturers for fast colors as compared with commercial colors. This is a cost-of-production measure and overlooks the increase in subjective consumer utility. A similar measure of increased consumer value may be determined for pre-shrunk goods. Improved quality resulting from the Sanforizing process applies so far to only certain types of goods, but for these types, the percentage of goods so processed can be determined and a measure arrived at. The same can be said for other patented processes such as Trubenizing and anti-crease.

Style changes

Changes in style form another necessary modification of price series if prices are to show changes in comparable items. There are essentially two aspects to this question: style in fabrics and in garments. They represent rather different things, since the finished product in styling cloth is the same thing quantitatively one time as another, whereas in styling a garment, especially women's apparel, the final product may represent something quantitatively different

one time than another—more yards of cloth, more labor, or more trimming.

For styling cloth, it is believed that it should be possible to arrive at estimates for the amount spent today by given divisions of the industry as compared with 15 years ago. In the mill field the cost of styling can be worked out by co-operation with the leading brokers, selling houses, mills, etc. Such figures will again represent not intangible consumer value but the actual cost of producing style effects in comparable cloths. It is assumed that novelty weaves, that is, goods 'styled in the loom', carry an extra charge comparable to the extra cost of weaving them. Similarly, changes in the styling of printed designs and plain shades might be approximated through changes in production costs. Thus it is believed that the total styling bill for each textile industry is susceptible of estimate, at least in comparison with 15 years ago. When obtained it could then be related back to appropriate price series. Changes in styling garments and household articles present problems to which at present no solution is seen in terms of measurable quantities.

TECHNIQUES FOR TAKING ACCOUNT OF QUALITY AND STYLE CHANGES IN PRICE INDEXES

Once the trend of quality and style changes is measured, there is still the question of how price indexes are to be adjusted for such changes. It may be argued, of course, that no adjustment should be made; that users of textile price indexes should be provided with a record of quality and style changes, and left to make such allowance for those changes as they see fit. Though this might make for a wider appreciation of the role played by quality and style in textile price behavior, it does seem that it would unnecessarily increase the opportunity for confusion and misunderstanding among persons using such generally accepted indexes as those compiled by the United States Bureau of Labor Statistics. The techniques to use is a problem to challenge the ablest student of index numbers. It enters every stage

of textile pricing, retail as well as wholesale. Can nothing more satisfactory be devised than the use of chain index numbers? One of the great needs of those undertaking price research in the textile industries today is for a comprehensive index of retail prices comparable to that now compiled for wholesale prices by the Bureau of Labor Statistics.