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Volume Title: Inventories and Business Cycles, with Special Reference to Manufacturers' Inventories

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Volume Publisher: NBER

Volume ISBN: 0-870-14087-6

Volume URL: <http://www.nber.org/books/abra50-1>

Publication Date: 1950

Chapter Title: A Preliminary Theory of the Cyclical Behavior of Manufacturers' Stocks

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Chapter URL: <http://www.nber.org/chapters/c9136>

Chapter pages in book: (p. 310 - 324)

## CHAPTER 13

### A Preliminary Theory of the Cyclical Behavior of Manufacturers' Stocks

This chapter attempts to draw together the many suggestions advanced in earlier parts of the book to explain the behavior of manufacturers' stocks during business cycles. This account, however, cannot be more than a preliminary explanation. The data so far analyzed disclose some of the significant behavior traits of inventories; but they reveal also that for many aspects of inventory behavior we cannot now obtain reliable information, and for some none is available.

#### 1 *Total Stocks*

The physical volume of manufacturers' inventories, as a whole, tends to conform to business cycles with a long lag. This is the solid characteristic of inventory behavior that can be established with presently available evidence and that requires explanation.

Timing measurements point to the conclusion that the length of the lag is 6 to 12 months. As argued in Chapter 4, the true lag is probably closer to the former figure than it is to the latter, but the crudity of our estimates of inventories in constant prices makes it difficult to express the lag more precisely. In any event, the lag of the physical volume of inventories is one of the longest departures yet found among important series from the modal behavior by which cyclical turns in business are dated. Indeed it is so long that during very short expansions or contractions, inventories must typically move counter to the business tide for half a phase or more.

#### 2 *Major Classes of Stocks*

The inventory holdings of manufacturers are not a homogeneous mass of goods subject to similar influences and behaving in similar fashion. Substantial differences can be discerned, and an explanation of manufacturers' total holdings must be a compound of sep-

arate hypotheses about distinct categories. This study has distinguished three major classes—goods in process, raw materials, and finished goods—and several minor classes.

#### GOODS IN PROCESS

To understand the behavior of goods in process, which account for about 20 percent of all manufacturers' holdings, we divided industries into two groups. In one, 'continuous' industries, the quantity of goods in process is fairly rigidly tied to the rate of manufacturing activity for any one of several reasons. There may be only one stage of fabrication or the technical conditions may be such as to enforce or make highly profitable the uninterrupted processing of raw materials. In the second group, the quantity of goods in process is not rigidly tied to the rate of manufacturing activity. Here the process is divided into stages and opportunity exists for inventories to pile up 'between stages' when activity slumps or to be drawn down when activity picks up. The two groups appear to hold about the same quantity of goods in process.

In continuous industries the behavior of goods in process can be deduced from the character of the process (Ch. 8). Stocks of goods in process rise and fall with the rate of output. They cannot lag behind output and, in fact, are likely to lead. The lead, however, must be short, for it cannot exceed the period necessary to process goods—less than one month on the average in manufacturing industries, according to my rough estimates.

As far as goods in process held by other than continuous industries are concerned, we are on less firm ground. It seems likely, however, that they too conform positively to manufacturing activity; for it is only the portion of goods in process held by such industries 'between stages' that is not rigidly tied to the rate of activity. Goods held 'within stages' must move with the rate of activity in these stages just as goods in process held in continuous industries. Moreover, there is no necessity for goods held 'between stages' to behave inversely during all or part of a cycle; there is only a possibility that they will do so if the incentive thus provided to stabilize the operations of preceding stages is sufficient.

It seems safe to conclude that goods in process move in close conformity with cycles of manufacturing activity. But it is not

possible to say whether they tend to lead a few weeks, move synchronously, or lag by a short period.

#### RAW MATERIALS

Stocks of raw materials account for about 40 percent of manufacturers' inventories. Unfortunately we do not have an extensive sample from which we might obtain a well founded idea of how they behave. The hypothesis I have advanced was suggested by studying a small but varied collection of series.

The over-all conclusion is that stocks of raw materials tend to conform positively to business cycles with a lag of about three months, or perhaps somewhat longer. To understand why, one must distinguish the classes of commodities comprising the total stock of raw materials and the forces that control each (Ch. 9-10).

For purposes of analysis, stocks of raw materials are divided into three main groups according to source. The first and most significant includes commodities purchased from suppliers who can quickly respond to a change in the demand for their goods by increasing deliveries to customers—in broad terms, commodities purchased by manufacturers from other manufacturers or mines in this country. Such sources usually maintain stocks of finished goods from which sudden increases in orders can be filled, and they can quickly expand their output to meet a lasting increase in demand. When sales fall off, they tend to allow their stocks of finished goods to pile up and to curtail output rather than to force their goods on the market by drastic reductions in price. Finally, the time consumed in transit from suppliers to industrial consumers is usually short. In 1929 commodities supplied from such sources accounted for approximately two-thirds of all raw materials used by American manufacturers (Ch. 9).

Manufacturers who draw their raw materials from these sources can manage their purchases with a view to satisfying the requirements of economy and efficiency in production. These objectives make for a larger inventory of raw materials when the rate of manufacturing activity is high than when it is low—for three reasons. First, the raw materials must be prepared for fabrication. If delivery is accepted at the point of shipment, the goods must be transported to the point of manufacture where they are weighed, inspected, taken to storage rooms, and finally issued for fabrica-

tion. If the rate of arrival and consumption is relatively high, a relatively large quantity will be passing through the operations preparatory to actual fabrication.

Stocks, secondly, serve to protect manufacturers against delays in the arrival of the materials required to maintain production at the desired rate. They make it possible for manufacturers to seek the best sources, to negotiate contracts without the pressure of a dwindling stock upon their rate of operations, and to hold a certain insurance against failure of shipments to meet specifications and against interruptions in the receipt of goods due to strikes or mechanical breakdowns at the plants of their suppliers, or to delays or losses in transit. To guard adequately against these contingencies a manufacturer will want to hold supplies sufficient to meet his needs for some weeks or even months in advance. This, in turn, implies that he will need a larger quantity of goods for such purposes when his rate of activity is high than when it is low.

These considerations are reinforced by the precautions manufacturers take to safeguard the value of their stocks against changes in price. It seems unlikely that during ordinary business cycles manufacturers 'speculate' on price changes in the sense in which this word is appropriate to the operations of commodity traders. They are likely, however, to satisfy their routine desires for holding stocks somewhat more generously when the market for their raw materials is firm and rising, somewhat less generously when it is weak and tending to drop. Consequently, during an upswing of business they are likely to keep something more than their usual number of weeks' supply and during a downswing, somewhat less.

There are good reasons then to think that manufacturers try to manage their stocks of raw materials so that they rise and fall together with their volume of operations. And those who draw their supplies from sources able to deliver on short notice and at steady prices probably find their efforts fairly successful. It is unlikely, however, that they foresee adequately the sharp changes in the demand for their goods and in their own rate of fabrication that often take place during a business cycle. In particular, they are unlikely to become aware of the changes from contraction to expansion and expansion to contraction until after they have occurred. It is plausible, therefore, though our evidence is scanty, that stocks

of raw materials do not begin to rise, even for the sensitive group of commodities now under consideration, until some time after expansion begins, and that they do not begin to fall until some time after contraction begins. The little evidence we have suggests a lag of perhaps 2-3 months, but, as will be indicated below, the lag may be somewhat longer.

A second group of commodities, comprising about 10 percent of the raw materials purchased by manufacturers, is composed of imports. Obviously, to bring goods from abroad by sea takes considerable time. This lag of receipts behind orders tends to cause the total stocks of the commodity kept in this country to fall for a considerable time after consumption has begun to increase. Similarly, when business begins to slump, the rate of imports cannot be immediately adjusted to the new rate of consumption, and total stocks tend to rise for some time. The few indications we have suggest that these lags may be so protracted as to produce inverted movements over the entire course of a business cycle. This, however, refers to total stocks of such commodities. Whether the same behavior characterizes inventories held by manufacturers themselves depends upon how large a proportion of the total they hold. If they tend to keep only a minor portion, leaving the rest in the hands of importers and dealers, wholesalers' stocks are likely to absorb the disparities between imports and consumption, and manufacturers' stocks of raw materials will rise and fall with their rate of activity.

Commodities of domestic origin whose rate of supply is subject to short-term movements that are independent of current demand form the third class of raw material inventories, accounting for approximately a quarter of manufacturers' raw materials. Cycles in the total stocks of these goods, of which agricultural crops are leading examples, tend to be controlled by fluctuations in supply and to be only remotely connected with cycles in general business. Again, however, manufacturers' stocks alone will not share these irregular traits unless they constitute a large proportion of the total stock. If dealers hold the major portion, manufacturers can get the supplies they require despite random fluctuations in the underlying supply of the commodity and thus keep an inventory of raw materials consonant with their own rate of activity.

It appears then that most raw material stocks held by manufacturers are likely to vary positively with business cycles with a short lag. This would include virtually all goods purchased from other United States manufacturing and mining industries, accounting for nearly two-thirds of total stocks of raw materials,<sup>1</sup> as well as commodities of foreign or agricultural origin that are imported or assembled by dealers who hold the major portion of the stock. The only important exceptions appear to be commodities of foreign or agricultural origin, most of whose stock is held by the industrial consumers themselves. In such cases, the chief effect of importation would be to lengthen the lag, and the chief influence of agricultural origin would be to inject an element of irregular or random variation into the behavior of the stocks.

We cannot, unfortunately, say how significant these exceptional cases are. They can hardly account for more than one-fourth of all raw materials stocks and they are probably much smaller. It is, indeed, hard to think of any outstanding domestic farm product for which a class of dealers does not intervene between the farmer and the manufacturer. Certainly this is true of the grain crops and of cotton. It is true also of the markets for hides. Thus I take it that the behavior characteristic of products supplied by domestic mining and manufacturing industries typifies also a large part of manufacturers' other supplies of raw materials. As already stated, therefore, total stocks of raw materials tend to rise and fall with business activity, lagging 3 months or somewhat more at turning points.

#### FINISHED GOODS

Several distinctions must be made in order to understand the behavior of stocks of finished goods—about 40 percent of all manufacturers' inventories. One division is that between goods made to order and those made to stock or for the market. The stock of finished goods made to order, like goods in process in continuous industries, is fairly rigidly tied to the rate of manufacturing activity. By definition, such goods are made against specific orders and, except for seasonal influences, their shipment will not be delayed

<sup>1</sup> There is a minor qualification for goods purchased on long-term contract and another for goods transported over long distances by water rather than rail. Either condition would tend to lengthen the lag.

long after fabrication has been completed. But for the same reason that goods in process tend to lead production, finished goods made to order—5 to 10 percent of manufacturers' total stocks—must lag behind production, if by only a very short interval.

Goods made to stock, on the other hand, are not mechanically related to the volume of activity; instead their behavior exhibits a variety of characteristics depending upon the nature of the commodities and the factors influencing production. The most important group, for which our materials provide a fairly adequate sample, comprises staples whose rate of output, like that of most manufactured goods, varies largely in response to changes in demand. They include 20-25 percent of manufacturers' total stocks. The evidence indicates that stocks in this group tend to vary inversely to the rate at which they are shipped from the manufacturing plant. If an expansion or contraction is of moderate length the stocks are likely to move inversely during an entire cyclical phase. But if a phase is relatively long, they are likely to reverse their course before the end of the phase, and thereafter proceed in the same direction as general business.

The tendency we observe for stocks to move sharply counter to the rate of shipments immediately after a cyclical turn is probably due to the inability of manufacturers to foresee the turn of business soon enough to adjust their rate of production to the change in sales. The continued decline of these stocks during expansion and their continued rise during contraction probably reflects a combination of several factors. On the one side are factors that tend to retard the rate and reduce the degree of adjustment of production to changes in the volume of shipments. One is the interval between input and output in manufacturing establishments (about 3 weeks, on the average), together with continuing uncertainty about the course of sales so far ahead. Another is the reluctance from the viewpoint of personnel policy to hire workers who may have to be laid off within a short time or to lay off workers who may be rehired soon. A third is the desire to gain other real or supposed benefits from stabilizing output. These combine to make manufacturers hesitate to change their rate of production until they are forced to, and thus to make adjustments late and inadequately.

On the other side there is the character of the commodities. The

goods are durable and staple; they will not deteriorate physically or lose their usefulness before demand revives again; consequently an accumulation of stocks in times of declining activity can be tolerated.

So much for the inverse conformity of these stocks. That the timing of the turns of finished goods inventories of this class should vary with the length of expansions or contractions is hardly surprising. The first effect of an upturn in business is a rapid drop in stocks. As the expansion proceeds, stocks continue to fall, but the longer the expansion the closer do inventories approach the point at which it becomes inconvenient for a firm to attempt to handle its expanded business from so small a stock. The company runs the risk that a sudden accumulation of orders will find it unable to make rapid delivery and it will have to forego attractive orders. Therefore the incentive to bring the contraction of stocks to an end grows stronger as expansion proceeds. It is not difficult, therefore, to account for our finding that while stocks of finished staples tend to move inversely during short and moderately long expansions, stocks are likely to expand before the end of prosperity if the upswing is protracted. Similarly in contraction. The first result of a downturn in business is a rapid accumulation of stocks. To some extent this is not unwelcome since it allows inventories depleted in the preceding boom to be rebuilt. And to some extent even larger accumulations can be tolerated in order to cushion the rate of operations against the impact of declining sales. But after a point stocks become intolerably large and firms are forced to cut output enough to facilitate inventory liquidation. The longer the decline in business the more likely is it that this point will be reached (Ch. 11).

These findings apply only to stocks of finished staples whose output cycles are activated largely by changes in demand. In some cases, however, output cycles are determined largely by forces from the side of supply. This occurs when two conditions are found in combination: (a) when short-run fluctuations in the supply of raw materials do not respond to changes in demand; for example, when the materials are of agricultural origin, and (b) when there are no sources of raw material supply other than current domestic output, for example, stocks or imports. Under these conditions, the

production of fabricated goods is governed chiefly by changes in the supply of raw materials, and these in turn, are not influenced in the short-run by changes in demand.

Stocks of finished goods produced under such conditions tend to rise and fall with the rate of fabrication. They tend to lag behind the cyclical turns in production since some time usually intervenes between an upturn in production and the day production exceeds shipments. And similarly at downturns (Ch. 12).

The behavior of stocks during business cycles depends upon the durability of the commodity after fabrication. If the commodity is perishable, the finished stock represents no more than the goods in process of distribution or the seasonal carryover. It will rise and fall with output, and since output fluctuations are irregular during business cycles, so are inventory fluctuations (see Ch. 12, Sec. 3 on pork and lard).

When the finished good is durable, however, the surplus tends to be carried over when demand is low relative to output. And when demand is relatively high it can be satisfied in part by liquidating stocks carried over from earlier years. There is some tendency, therefore, for stocks to vary inversely to business cycles. Again the peaks and troughs of stocks should lag behind the opposite turns in business because when sales turn up (down), they will not immediately outrun (fall below) output. This tendency to inverse conformity, however, will usually be more or less obscured by the effect of the irregular fluctuations of output. And the irregularity of behavior will be more pronounced the more the amplitude of fluctuations in output exceeds that in demand (see Ch. 12, Sec. 2 on cottonseed oil).

The broad conclusion is that, in the case of commodities whose production cycles are governed chiefly by fluctuations in the supply of raw materials, stocks of finished goods will tend to behave irregularly during business cycles. When the finished product is durable, there may also be some significant tendency toward inverted conformity with a lag. It is unlikely, however, that commodities whose output is determined by raw material supply constitute an important class. For even when raw material supply is not itself governed by the demand for finished products, the connection between material supply and rate of fabrication can often be

broken by accumulation or liquidation of stocks of raw materials and by variations in imports. When allowance has been made for these methods of adjusting raw materials supply to demand, it seems unlikely that finished stocks of commodities whose output cycles are governed by materials supply account for more than 6-8 percent of total stocks (Ch. 12). Our finding that finished stocks of staple goods made for the market move inversely to business activity in short cycles and positively with a very long lag in long phases is, therefore, not subject to major qualification.

This finding applies to staple commodities alone. Though I do not have any way of checking my belief, it seems improbable that manufacturers would manage stocks of perishable goods or style and fashion items in the same way as they do stocks of staples. While the first effect of a decline in sales may, as in the case of staples, be a rise in stocks, manufacturers of perishable goods are likely to make strenuous efforts, through cuts in prices and production, quickly to bring their stocks of finished goods down in order to prevent serious loss through holding the goods too long. These considerations will be especially important when production and sales are seasonal, and surplus stocks must be carried over many months. It is plausible that movements of stocks of fashion goods and other perishables conform to changes in sales with only a short lag.

But stocks of this type are relatively small. Even if made for stock, the inventories are likely to be kept quite small, and a heavy reliance placed upon current production to fill current orders. The difficulty of managing business under such conditions, moreover, will tend to encourage the practice of producing to order rather than to stock.

This judgment is confirmed by some rough estimates. The value of the total stock of finished perishable goods at the end of 1939 was less than \$300 million (App. E), only 7.5 percent of all finished goods held by manufacturers and hence no more than 3 percent of their total stocks. This amount, moreover, must have consisted in part of goods made to order and in part of products made from agricultural materials whose output in the short-run is dominated by supply. Even allowing for the crudity of my estimates, it seems reasonable that stocks of finished perishables made for the

market in industries whose output is dominated by demand constitute a very small group—less than 3 percent of manufacturers' total stocks.

#### TIMING OF THE MAJOR CATEGORIES AND THE LAG IN TOTAL STOCKS

Having accounted as well as I can for the behavior of the various components, I can best complete the story by indicating how they fit together to explain the tendency of manufacturers' total stocks to vary positively during business cycles with a long lag. To begin with, it appears that none of the three major groups of stocks tends to lead the turns of business at large by a significant interval. Goods in process in continuous industries do, indeed, tend to lead production, but the lead cannot be longer than a few weeks on the average. When we consider these stocks together with goods in process in other industries, it is no longer certain whether the entire group tends to lead or to lag. But in any event, the interval is short. Goods in process tend to turn at about the same time as output and, therefore, business in general.

Another category closely tied to the rate of output is the stock of finished goods made to order. These too must rise and fall almost as soon as the output of the goods in question itself does. Whether they tend to turn before the peaks and troughs of business cycles, however, depends upon the cyclical habits of the kinds of goods that are made to order. If their output tends to lead aggregate manufacturing output, so will their finished stocks. If it tends to lag, so will their stocks. I do not know of any evidence, however, that supports the hypothesis of either a lead or a lag. Orders for manufactured goods tend to turn early, but before production declines, backlogs must be reduced and the interval between input and output bridged. Pending the accumulation of data, therefore, it is reasonable to assume that finished stocks made to order, like goods in process, turn almost synchronously with output and business in general.

These two categories of stocks account for a substantial, though minor fraction, of all manufacturers' holdings. Goods in process included about one-fifth of manufacturers' stocks in the interwar period and goods made to order 5-10 percent. Thus no more than 30 percent, probably less, of manufacturers' total stocks begin to decline or rise almost simultaneously with business. The remainder

continues to rise after business begins to recede and continues to fall after the onset of expansion.

The next category to reach its cyclical turn is probably the part of raw material stocks whose size manufacturers can adjust fairly promptly to the level of business. I estimate that it includes three-quarters or more of raw materials stocks and, therefore, about 30 percent of total stocks. General considerations suggest a lag of only a few months, no more than 3 or 4, and the data indicate that it may be less than 3 months. The evidence on this point is poor, however, and these figures may underestimate the lag somewhat.

Another group of stocks that should turn at or about the same time (though no evidence is available) is finished perishable goods made in industries whose output cycles are dominated by changes in demand. As indicated above, however, this is a small group accounting for no more than 3 percent of all manufacturers' stocks. If we assume that it too turns about 3 months after business, inventory groups comprising 60-65 percent of manufacturers' total stocks have either begun to fall or just reached their peak at the end of, say, the third month after the peak in business. And the same statement might be made about the relation between stocks and business at large at business cycle troughs.

Two other notable groups conform regularly to business cycles: finished staples made for the market and raw materials imported by manufacturers. The first, as we have seen, tends to move inversely when business falls off and does not show any tendency to fall, as a class, until many months, probably more than two years, have passed. Imported raw materials also tend to lag by a long interval, though how long is difficult to say. Finished staples made for the market are a large class, perhaps 20-25 percent of manufacturers' total stocks. Allowing a few percentage points to cover imported raw materials, we get a total of 22-27 percent of all stocks that move inversely or with a very long lag. If we add these figures to the 60-65 percent of stocks mentioned above, the total thus far taken into account covers about 85-90 percent of all manufacturers' stocks. The remainder behave irregularly during business cycles and can be neglected in this discussion.

This recapitulation brings into sharp focus a certain gap in the argument. About 60 percent of total stocks reach their cyclical

turning points either together with or some 3 months after the turns in business. But the lag of aggregate stocks is 6-12 months. How can this apparent gap of 3-9 months be explained?

The solution can take one or more of several forms. As we shall see in Part Three, stocks of finished staples rise rapidly in the first part of contraction and decline rapidly in the first part of expansion. This is understandable when we consider that output lags behind shipments at business turns and that the uncertainties regarding the adjustment of production to a decline of sales are at their height early in contractions and expansions. For the same reasons raw material stocks might be expected to decline slowly at first and to act similarly on the rise. At the beginning of a contraction, manufacturers are still receiving the goods ordered when the outlook was brighter. And they are still uncertain about the future course of business and less likely to reduce their purchases as drastically, say, in the first three months of recession as they will in the next three. The scant evidence we have about raw materials stocks is consistent with this view, but it is flimsy indeed. As far as it goes it seems possible, in fact plausible, to suppose that the rapid rise of finished goods stocks should, for a time, offset the decline of the remainder and so lengthen the lag of total stocks.

These considerations may possibly explain the entire gap between a lag of 3 months and one of 6-12 months, but there are two other possibilities. I may have underestimated the lag in most raw materials stocks. Three months is a judgment based on a very small and, as emphasized repeatedly, unrepresentative collection of series. The lag may well be longer and, on the reasoning of Chapter 9, probably is.

On the other hand, I may have overestimated the lag in aggregate inventories. I argued in Chapter 4 that the imperfect indexes used to adjust inventory values for changes in price probably cause the lag in physical inventories to be overstated. If the true lag is nearer 6 than 12 months, say, 7 or 8, and the lag in raw materials is as long as 4 or 5 months, the gap becomes narrow enough to be easily explicable in terms of the inverse behavior of finished staples. If the lag in aggregate inventories is as short as 6 months, the action of finished goods might bridge the gap even if the lag in raw materials is no longer than 3 months. I must end, therefore, with

a largely qualitative statement: the lag in manufacturers' aggregate stocks behind business is long, 6 months or more. It is to be explained as a compound of the behavior of several groups of inventories: goods in process and finished goods made to order, which, roughly speaking, move synchronously with business; the major part of raw materials stocks, which follow business with a short lag; and imported raw materials and finished staples made for the market, which follow business activity with a very long lag or move inversely.

### 3 *Unsettled Questions*

The preceding section not only presented a tentative hypothesis about cyclical fluctuations in manufacturers' stocks but also indicated how extensive are the areas in which the theory rests upon guesses or inadequate evidence. These areas and some others deserve stress by way of conclusion.

As stated at many points above, the major question to which a more precise answer is necessary concerns the length of the lag in aggregate inventories behind manufacturing activity and business at large. We shall be able to reach such an answer only when the monthly estimates of the Department of Commerce, which begin in 1939, have extended over several peacetime cycles. Even then difficult problems of correcting inventory values for changes in prices will remain.

Following this basic question are several subsidiary problems. One concerns the relative size of the major categories of stocks. We now have a fair idea of the relative size of the three largest divisions: goods in process, raw materials, and finished goods. The separation between goods in process and raw materials, however, would be better if it rested on census data. I have calculated crudely the relative size of goods in process in continuous process industries. We need a more firmly founded estimate than my crude calculation, though if the Department of Commerce can improve its estimates of goods in process as a whole, we shall be less interested in knowing how large a part of goods in process is fairly rigidly determined by the rate of output.

Analysis of the behavior of raw materials rests on knowledge of the importance of different industries—manufacturing, mining,

and agriculture—and of different geographical areas as sources of supply to industrial consumers. An estimate based on more recent materials than the 1929 Census would be valuable. Better understanding in this area depends also on knowing how large a share of stocks of imported and agricultural commodities is held by manufacturers, as distinct from dealers.

Among finished goods the most significant distinction is between goods made for the market and to order. My estimates of the size of these classes are only guesses, and the same can be said about my estimates for the various classes of finished goods made for the market: perishable goods, staples whose output cycles are dominated by changes in demand, and staples whose output cycles are governed by changes in raw material supply.

As to the behavior of the stocks in these various classes, the major question concerns the vital category, raw materials. My analysis rests on a very small sample. Some years hence the Department of Commerce series will be a valuable index to the behavior of aggregate raw materials stocks, and we shall know more about the length of their lag. The aggregate is composed of various components with different characteristics, however, and further analysis requires a more comprehensive collection of data by commodities.

These questions go far to indicate how tentative my explanation of inventory behavior is. But they do not exhaust the areas to be investigated when more adequate evidence is available. The data at hand conceal significant differences between the behavior of inventories classified by durability or by industry. Nor finally, did I consider the data sufficiently extensive to clarify the very complicated problem of the relation between price speculation and inventories during business cycles. As the data now available are reviewed by others and as records improve we hope that many of these questions will be settled and my tentative account of the behavior of manufacturers' inventories substantiated or modified.